Department Head: John W. Shervais
Location: Geology 205
Phone: (435) 797-1273
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Undergraduate Advisor:
Peter T. Kolesar, Geology 110, (435) 797-3282, peter.kolesar@usu.edu

Graduate Director:
W. David Liddell, Geology 212, (435) 797-1261, davel@cc.usu.edu

Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), and Master of Science (MS) in Geology; BS in Composite Teaching in Earth Science

Undergraduate emphases: *BS in Geology*—Hydrogeology-Engineering Geology and Geoarchaeology

Graduate Specializations: *MS in Geology*—Geomorphology, Hydrogeology, Igneous Petrology, Paleoecology, Sedimentary Geology, Structural Geology, and Tectonics

Undergraduate Programs

Objectives

Geology is the study of the planet Earth, the materials of which it is made, the processes that act on these materials, the products formed, and the history of the planet and its life forms since its origin. Geology considers the physical forces that act within and on the Earth, the chemistry of its constituent materials, and the biology of its past inhabitants as revealed by fossil evidence. Geologists integrate biology, chemistry, engineering, mathematics, and physics in the study of our natural surroundings. The knowledge thus obtained is used by geologists to explore for energy, mineral, and water resources; to identify geologically stable sites for major structures; and to provide foreknowledge of some of the dangers associated with the mobile forces of a dynamic Earth. Geologists provide fundamental information required by modern society to plan for cultural and industrial development, reduce geological hazards, identify potential resources, and assist in the design of waste-disposal facilities.

The Department of Geology prepares students for professional careers in the geosciences and provides the background required for advanced studies. The department offers three options of study to meet the growing demand for geoscientists with training in general geology (BS in geology without an emphasis), hydrogeology-engineering geology emphasis, or geoarchaeology emphasis. All options provide exposure to the sciences and an appreciation of our physical surroundings. The BS program in Geology meets the curriculum standards established by the American Institute of Professional Geologists.

The department also offers the Composite Teaching Major in Earth Science to prepare teachers of earth science at the secondary school level. Requirements for this major meet or exceed the standards of the National Science Teachers Association. Those students who major in earth science should be aware that state licensure is required of secondary education teachers. The Composite Teaching Major in Earth Science fulfills the requirements that provide eligibility for licensure. Licensure requirements vary from state to state, and students should investigate the requirements for the states in which they intend to seek employment. Advising for the Secondary Teacher Education Program (STEP) and State of Utah secondary education licensure is provided by the USU Department of Secondary Education.

The Department of Geology is housed within the Geology Building, which is located at the northeast corner of the Old Main Quad. The Geology Building provides spacious, well-equipped teaching labs, classrooms, and facilities, including a display and study area for students, computer access, document room, map room, preparation facilities, and research labs.

General College of Science Requirements

All general College of Science requirements are embedded within the various major requirements listed below. No extra coursework is required to fulfill the general college requirements.

Requirements

Departmental Admission Requirements

New freshmen admitted to USU in good standing qualify for admission to this major. Transfer students from other institutions need a 2.2 GPA, and students transferring from other USU majors need a 2.0 GPA for admission to this major in good standing. Students seeking admission to the Composite Teaching Major in Earth Science should be aware that a 2.75 minimum GPA is required for admission to the Secondary Teacher Education Program (STEP) in the Department of Secondary Education. Students in the Hydrogeology-Engineering Geology emphasis must meet all College of Engineering GPA standards appropriate for the courses to be taken having either the ENGR or CEE prefix.

Field Trips and Labs

Most Geology courses have required laboratories and/or field trips. Those enrolled are expected to dress properly for the conditions and observe safety precautions issued by the instructors. Most courses require modest lab fees.

Bachelor of Arts Degree

For a BA in Geology, the foreign-language requirement must be satisfied in addition to the Bachelor of Science in Geology requirements.

Geology Major—General Geology Option

GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F,Sp).....4
GEOL 3200 (DSC) The Earth Through Time (Sp).....4
GEOL 3500 Mineralogy and Crystallography (Sp).....4
GEOL 3520 Optical Mineralogy and Petrography (F).....2
GEOL 3550 (CI) Sedimentation and Stratigraphy (F).....4
GEOL 3600 Geomorphology (F).....4
GEOL 3700 Structural Geology (Sp).....4
GEOL 4500 Igneous and Metamorphic Petrology (F).....4
GEOL 4700 (CI) Geologic Field Methods (F).....3
GEOL 5200 Geology Field Camp (Su).....5
CHEM 1210 Principles of Chemistry I (F,Sp).....4
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su).....4
CHEM 1230 Chemical Principles Laboratory I (F,Sp).....1
CHEM 1240 Chemical Principles Laboratory II (F,Sp).....1
MATH 1210 (QL)[1] Calculus I (F,Sp,Su).....4
STAT 3000 (QI) Statistics for Scientists (F,Sp) (3 cr) **or**
MATH 1220 (QL) Calculus II (F,Sp,Su) (4 cr).....3 or 4

CS 1050 Problem Solving with Computers (F,Sp) (3 cr) **or**
CS 1700 Introduction to Computer Science—CS 1 (F,Sp,Su) (3 cr) **or**
CEE 5190 Geographic Information Systems for Civil Engineers (Sp) (3 cr) **or**
AWER 4930 Geographic Information Systems (F) (4 cr) .....3 or 4
PHYX 2210 (QI) General Physics—Science and Engineering I.....4
PHYX 2220 (BPS/QI) General Physics—Science and Engineering II ..4

Students must also select 12 credits from any Geology courses numbered 4900 or above, except GEOL 5200 (Geology Field Camp).

Geology Major—Hydrogeology-Engineering Geology Emphasis

GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F,Sp).....4
GEOL 3200 (DSC) The Earth Through Time (Sp).....4
GEOL 3500 Mineralogy and Crystallography (Sp).....4
GEOL 3550 (CI) Sedimentation and Stratigraphy (F) 4
GEOL 3600 Geomorphology (F) 4
GEOL 3700 Structural Geology (Sp).....4
GEOL 4700 (CI) Geologic Field Methods (F).....3
GEOL 5200 Geology Field Camp (Su).....5
GEOL 5510 (QI) Groundwater Geology (F) 3
GEOL 5600 Geochemistry (F).....3
CHEM 1210 Principles of Chemistry I (F,Sp) 4
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) 4
CHEM 1230 Chemical Principles Laboratory I (F,Sp) 1
CHEM 1240 Chemical Principles Laboratory II (F,Sp) 1
MATH 1210 (QL)[1] Calculus I (F,Sp,Su).....4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2250 (QI) Linear Algebra and Differential Equations (F,Sp,Su)..4
CS 1050 Problem Solving with Computers (F,Sp) (3 cr) **or**
CS 1700 Introduction to Computer Science—CS 1 (F,Sp,Su) (3 cr) **or**
CEE 5190 Geographic Information Systems for Civil Engineers (Sp) (3 cr) **or**
AWER 4930 Geographic Information Systems (F) (4 cr) .....3 or 4
PHYX 2210 (QI) General Physics—Science and Engineering I.....4
PHYX 2220 (BPS/QI) General Physics—Science and Engineering II ..4
ENGR 2000 Engineering Mechanics Statics (F,Sp) 2
ENGR 2040 Strength of Materials (F,Sp) 2
CEE 3500 Civil and Environmental Engineering Fluid Mechanics (F,Sp).....3
CEE 3430 Engineering Hydrology (Sp) (3 cr) **or**
CEE 4300 Engineering Soil Mechanics (Sp) (4 cr) .....3 or 4
SOIL 3000 Fundamentals of Soil Science (F,Sp) (4 cr) **or**
SOIL 5130 Soil Genesis, Morphology, and Classification (F) (4 cr) 4

Geology Major—Geoarchaeology Emphasis

GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F,Sp).....4
GEOL 3200 (DSC) The Earth Through Time (Sp).....4
GEOL 3500 Mineralogy and Crystallography (Sp).....4
GEOL 3550 (CI) Sedimentation and Stratigraphy (F) 4
GEOL 3600 Geomorphology (F) 4
GEOL 3700 Structural Geology (Sp).....4
GEOL 4700 (CI) Geologic Field Methods (F).....3
GEOL 5430 Paleontology (F).....2
ANTH 1030 (CI/BSS) World Archaeology (F,Sp) 3
ANTH 4350 Archaeological Method/Theory and Cultural Resource Management (Sp).....3
ANTH 4360 (DSS) Ancient Desert West (F).....3-4
ANTH 5300 Archaeology Field School (Su).....4-5
ANTH 5310 Archaeology Lab.....1-3
CHEM 1110 (BPS) General Chemistry I (F,Sp) (4 cr) **and**
CHEM 1120 (BPS) General Chemistry II (Sp) (4 cr) **and**
CHEM 1130 General Chemistry Laboratory (Sp) (1 cr).....9
Or
CHEM 1210 Principles of Chemistry I (F,Sp) (4 cr) **and**
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) (4 cr) **and**
CHEM 1230 Chemical Principles Laboratory I (F,Sp) (1 cr) **and**
CHEM 1240 Chemical Principles Laboratory II (F,Sp) (1 cr) 10

BIOL 3010 (CI/DSC) Evolution (Sp).....3

Two courses selected from:
BIOL 2220 General Ecology (F,Sp) (3 cr) **and/or**
BIOL 3030 (DSC) Genetics and Society (Sp) (3 cr) **and/or**
BIOL 3040 (DSC) Plants and Civilization (F) (3 cr) **and/or**
BIOL 3220 (QI) Field Ecology (F) (2 cr) .....5 or 6

MATH 1210 (QL)[1] Calculus I (F,Sp,Su).....4
STAT 3000 (QI) Statistics for Scientists (F,Sp).....3
AWER 4930 Geographic Information Systems (F).....4
AWER 5930 Geographic Information Analysis (Sp) 4
SOIL 3000 Fundamentals of Soil Science (F, Sp) (4 cr) **or**
SOIL 5130 Soil Genesis, Morphology, and Classification (F) (4 cr) 4

Composite Teaching Major in Earth Science

GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F,Sp).....4
GEOL 2500[2] Geology Field Excursions (F,Sp).....2
GEOL 3200 (DSC) The Earth Through Time (Sp).....4
GEOL 3500 Mineralogy and Crystallography (Sp).....4
GEOL 3550 (CI) Sedimentation and Stratigraphy (F) 4
GEOL 3600 Geomorphology (F) 4
GEOL 3700 Structural Geology (Sp).....4
GEOL 4700 (CI) Geologic Field Methods (F).....3
PHYX 1020 (BPS)[3] Energy 3
PHYX 2210 (QI) General Physics—Science and Engineering I.....4
PHYX 2220 (BPS/QI) General Physics—Science and Engineering II ..4
PHYX 3010 (QI/DSC) Space Exploration from Earth to the Solar System .....(3 cr) **or**
PHYX 3030 (QI/DSC) The Universe (3 cr) 3
CHEM 1210 Principles of Chemistry I (F,Sp) 4
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) 4
CHEM 1230 Chemical Principles Laboratory I (F,Sp) 1
CHEM 1240 Chemical Principles Laboratory II (F,Sp) 1
ENVS 5110 Environmental Education (Sp) (3 cr) **or**
FRWS 2200 (BLS) Ecology of Our Changing World (F,Sp) (3 cr).....3
BMET 2000 (BPS) The Atmosphere and Weather (F,Sp).....3
AWER 3000 (DSC) Oceanography (Sp) (3 cr) **or**
GEOL 3300 (DSC) Geology of the World's Oceans (Sp) (3 cr) 3
SCI 4300 Science in Society (F,Sp) 2
MATH 1210 (QL)[1] Calculus I (F,Sp,Su).....4
STAT 3000 (QI) Statistics for Scientists (F,Sp).....3
CS 1050 Problem Solving with Computers (F,Sp) (3 cr) **or**
CS 1700 Introduction to Computer Science—CS 1 (F,Sp,Su) (3 cr).....3

Students must also complete the Secondary Teacher Education Program (STEP) as follows:
Level 1
SCED 3100 Motivation and Classroom Management (F,Sp) 3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp).....3
SCED 3300 Clinical Experience I (F,Sp) 1
SCED 3400 Teaching Science I (F,Sp).....3
INST 3500 Technology Tools for Secondary Teachers (F,Sp,Su).....1

Level 2
SPED 4000 Education of Exceptional Individuals (may be taken anytime) (F,Sp,Su) 2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp) 3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp) 3
SCED 4300 Clinical Experience II (F,Sp) 1
SCED 4400 Teaching Science II (F,Sp) 3

Level 3 (12 credits)
SCED 5500 Student Teaching Seminar (F,Sp) 2
SCED 5630 Student Teaching in Secondary Schools (F,Sp) 10

Notes
This curriculum meets the standards of the Utah Core Curriculum—Science 7-12.

Beginning in 2006, all USU teacher education candidates will be required to take and pass the content exam approved by the Utah State Office of Education in their major content area prior to student teaching.

A 2.75 minimum GPA is required for admission to the Secondary Teacher Education Program (STEP).

Geology Minor

GEOL 1100 (BPS) Geology of National Parks: Introduction to Geology (F,Su) (3 cr) **or**
GEOL 1150 (BPS)[4] The Dynamic Earth: Physical Geology (F,Sp) (4 cr) ..... 3 or 4
GEOL 3200 (DSC) The Earth Through Time (Sp) 4

Students must also select 10 elective credits from Geology courses at the 3500 level or above.

[1]Students may need to complete prerequisite courses prior to enrolling in MATH 1210.
[2]GEOL 2500 (a 1-credit course) is repeatable for credit, and must be taken *twice* for the student to earn the required 2 credits.
[3]PHYX 1020 may also be listed as USU 1360, ST: Energy.
[4]GEOL 1150 is preferred.

Senior Thesis

Geology majors in good academic standing may elect to complete a senior thesis. This is an endeavor which normally spans a year in its preparation and presentation. Senior thesis credits may be applied toward the elective requirements in the General Geology option. For further information, students should contact their geology advisor or the geology department head.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. This is a departmental recognition which is separate from the University Honors program. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school.

Geology majors with a minimum GPA of 3.30 may elect to complete the requirements for the Geology Honors degree option. For further information, students should contact their geology advisor or the geology department head.

Undergraduate Research Opportunities

The Department of Geology offers a range of opportunities for undergraduate students to participate in research activities under the guidance of a faculty mentor. All departmental undergraduate research activities are coordinated by the departmental undergraduate research coordinator, James Evans, (435) 797-1267, jpevans@cc.usu.edu. More information may be found on the Geology Department website: **http://www.usu.edu/geoldept/**

Learning Objectives

Upon graduation, geology majors are expected to be able to: (1) identify common minerals; (2) identify common fossils, as well as their ages and the conditions under which they lived; (3) describe sedimentary rocks and measure a stratigraphic section in the field; (4) create a surficial geologic map; (5) define and distiguish between, and determine the type of stress responsible for forming, various structural features; (6) use a Brunton compass; (7) read topographic maps, as well as construct profiles from them; (8) read and make geologic maps, as well as construct cross sections from them; (9) use aerial photographs in geological investigations; (10) know the ages of important geologic features and events in the Earth's history, as well as explain how and why the Earth has changed over time; (11) know the Earth's internal processes and the features produced by them; (12) collect and evaluate geologic data; (13) interpret and create graphs of quantitative data; and (14) communicate observations and interpretations, both orally and in writing.

Assessment

The Department of Geology relies on a variety of tools to periodically assess its undergraduate program, including: (1) student input in assessment; (2) value-added assessment; (3) college-level assessment; (4) alumni participation in assessment; and (5) faculty program assessment. For more information, please refer to the Geology Department assessment website at: **http://www.usu.edu/geoldept/assessment/assessment.htm**

Additional Information

For more information about bachelor's degree requirements for Geology programs, see the Geology Major Requirement Sheet, available from the department, or online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Admission Requirements

See general admission requirements on pages 93-94. In addition, applicants must have acceptable GRE scores. Minimum scores of 40th percentile on the Verbal section and 40th percentile on the Quantitative section and a combined minimum of 1,000 are required. A member of the Geology faculty must agree to serve as the major professor for the applicant prior to acceptance.

Department of Geology

Applications will be considered throughout the year, but program entry in fall semester is preferred. Students who wish to be considered for assistantships or other financial aid must have complete applications on file no later than February 15 for entry into the program the following fall semester.

Prerequisites for Matriculation

Completion of a BS or BA in geology, biology, physics, chemistry, or engineering is required for matriculated status. Suggested prerequisite courses include: CHEM 1210, 1220, 1230, 1240; PHYX 2210, 2220; MATH 1210; STAT 3000; and CS 1050 or CS 1700 or CEE 5190 or AWER 4930. Deficiencies in geology are determined based on current USU undergraduate degree requirements for either the Geology or Hydrogeology-Engineering Geology option, as appropriate. The following geology courses or their equivalents are expected: GEOL 1150, 3200, 3500, 3550, 3600, 3700, 4700, and 5200. It is expected that any deficiencies will be made up before the end of the first year of study.

Degree Program

Master of Science Degree

The department offers advanced study and research opportunities leading to the MS degree in Geology. Although many research specialties require advanced courses selected primarily from Geology offerings, additional courses may be selected from other departments on campus, such as Civil and Environmental Engineering; Plants, Soils, and Biometeorology; Biology; Mathematics and Statistics; Aquatic, Watershed, and Earth Resources; Environment and Society; and Forest, Range, and Wildlife Sciences.

Specializations

Fields of specialization for graduate research include the following: hydrogeology, igneous petrology, paleoecology (including invertebrate paleontology), sedimentary geology (including petrology, basin analysis, sedimentation, stratigraphy, and petroleum geology), process geomorphology, Quaternary geology, structural geology, and regional tectonics.

Degree Requirements

Only the Plan A thesis option is allowed for the MS degree in Geology. The recommended distribution is 20 credits of coursework and 10 credits of thesis to obtain the required 30 credits for the MS degree. A minimum of five 6000-level geology courses (other than GEOL 6800) is recommended for the degree program. Only two grades of less than *B* (*C* to *B*-) will be accepted as part of the required degree program as listed on the "Program of Study for Master's Degree." A 3.0 grade point average must be obtained in required coursework as listed on the Program of Study. Thesis credits will be graded *P-F* only (i.e., no letter grade will be given). Geology graduate students using department or University facilities and/or under geology faculty supervision must register for a minimum of 3 credits every semester, up to and including the semester in which the thesis is cleared by the School of Graduate Studies. Registration may not be required during the summer.

Research

There are six broad areas of research emphasis within the department: (1) sedimentary geology, (2) structural geology (3) regional tectonics, (4) igneous petrology and geochemistry, (5) geomorphology, and (6) hydrogeology.

Research in **sedimentary geology** is diverse: sedimentation and development of coral reefs and associated carbonate environments during Pleistocene and Holocene times, changes in shallow-water carbonate environments through early Paleozoic time, nonmarine siliciclastic depositional systems and petroleum reservoirs, geochemical provenance methods, and large-scale architecture of Mesozoic-Cenozoic intracontinental basins in Asia. Research activities are dominantly field-oriented, and often have a subsurface component. Studies are ongoing in the western United States, Mexico, the Carribean, China, and west Africa.

Research in **structural geology** includes the examination of the mechanical and chemical evolution of fault zones, the development of fold-and-thrust structures in Idaho, Montana, Wyoming, and Utah, and the characterization of fluid-flow properties in fractured crystalline rocks.

Research in **regional and global tectonics** examines the structural and tectonic development of extensional structures in the Great Basin and Salton Trough; collisional and accretionary tectonics in the Western U.S., Pakistan, and the southern Appalachians; the relationship of ophiolites to active margin processes; and the application of basin analysis to the tectonics of basin formation and large scale crustal structures in China, Mongolia, Pakistan, and west Africa.

Research in **igneous petrology and geochemistry** focuses on the origin and evolution of basic to intermediate magmatic systems, and their relationship to global tectonic processes. Current projects include plume-related volcanism and its interaction with continental lithosphere in the Snake River Plain, Idaho; the origin and tectonic evolution of accreted arc terranes; the multi-stage origin of ophiolites; and the formation and evolution of lunar highlands crust.

Geomorphology research includes the study of climate and anthropogenic controls on landscape change and sedimentation; controls on alluvial stratigraphy; hillslope processes; numerical modeling of climate controls on basin stratigraphy; Quaternary landscape evolution of the Grand Canyon; and the integration and evolution of the Colorado River.

Research activity in **hydrogeology** includes wellhead protection in confined to semiconfined aquifers, the relationships between stream losses and water table depths, and the identification and geochemical characterization of groundwater recharge to surface streams.

Geology faculty members commonly interact with the faculty and staff of the Utah Water Research Laboratory; the College of Natural Resources; the Department of Plants, Soils, and Biometeorology; and the Department of Civil and Environmental Engineering.

Financial Assistance

Departmental financial support for incoming graduate students consists primarily of graduate teaching assistantships, which are awarded on a competitive basis. There is often other financial support available, such as research assistantships, resulting from grants or other external funding. Students requesting financial support should apply directly to the department no later than February 15. Admission to the MS program does not guarantee financial assistance.

Additional Information

Additional information on the research activities of faculty and graduate students may be obtained directly from the Department of Geology's website at **http://www.usu.edu/geoldept**

Geology Faculty

Professors
James P. Evans, structural geology, structural petrology
W. David Liddell, marine ecology, paleoecology, sedimentology
John W. Shervais, igneous petrology, geochemistry, tectonics

Adjunct Professors
Lynn M. Dudley, soil chemistry
David G. Tarboton, water resources and hydrology

Professor Emeritus
Robert Q. Oaks, Jr., sedimentary petrology, stratigraphy

Associate Professors
Donald W. Fiesinger, igneous petrology, Dean of College of Science
Susanne U. Janecke, tectonics, structural geology
Peter T. Kolesar, carbonate petrology, geochemistry
Thomas E. Lachmar, hydrogeology

Adjunct Associate Professors
Janis L. Boettinger, soil mineralogy
John C. Schmidt, fluvial geomorphology

Assistant Professors
Carol M. Dehler, sedimentation, geochemical cycles
Joel L. Pederson, process geomorphology, Quaternary geology
Bradley D. Ritts, basin analysis

Adjunct Assistant Professor
David G. Chandler, surface hydrology

Lecturer
Susan K. Morgan, science education, carbonate petrology

Course Descriptions

Geology (GEOL), pages 526-528

Department of Health, Physical Education and Recreation

Department Head: Craig W. Kelsey
Location: Health, Physical Education and Recreation 122
Phone: (435) 797-1498
FAX: (435) 797-3759
E-mail: hper@cc.usu.edu
WWW: http://www.coe.usu.edu/hper

Graduate Program Coordinator:
Richard D. Gordin, Jr., HPER 155, (435) 797-1506, gordin@cc.usu.edu

Undergraduate Academic Advisors:
Health Education Specialist Major *and* Parks and Recreation Major:
Mary Lou Reynolds, HPER 145, (435) 797-1278, reynolds@cc.usu.edu

Physical Education Major:
Suzanne D. Stones, HPER 143, (435) 797-1495, suzies@cc.usu.edu
(**Note:** During the summer months, the advisor for the Physical Education Major is Mary Lou Reynolds.)

Degrees offered: Bachelor of Science (BS) in Health Education Specialist; BS in Parks and Recreation; BS in Physical Education; Master of Science (MS) and Master of Education (MEd) in Health, Physical Education and Recreation

Undergraduate emphases: *BS in Health Education Specialist*—School Health and Community Health; *BS in Physical Education*—Exercise Science, Pre-Physical Therapy, and Teaching

Graduate specializations: *MS*—Corporate Wellness, Exercise Science, and Health Education

Undergraduate Programs

Objectives

Undergraduate Programs of Study
The Health, Physical Education and Recreation (HPER) Department offers undergraduate programs of study designed to prepare USU students for successful careers in one of three areas: Health Education Specialist, Physical Education, or Parks and Recreation. Preparation is accomplished through well-rounded, rigorous course requirements.

Activity Courses
USU students are served by an extensive elective lifetime-skill activity course program. The number and diversity of courses encourages students to increase their lifetime participation skills and enjoy opportunities, creativity, and expression. Students may also achieve and maintain a high level of personal fitness and adopt a proactive lifestyle conducive to health and well-being.

Recreational and Intramural Activities
The intramural program is planned and conducted to meet the needs of all students regardless of skill or ability. The major objectives are to offer a wide variety of sports experiences, to encourage lifetime sports participation, to develop habits of fair play, and to provide leadership experiences. The intramural concept not only embraces the traditional highly-organized program with teams, leagues, and tournaments, but also voluntary free play activities where opportunities are provided for physical recreation for all segments of the University community.

Undergraduate Research Opportunities
Undergraduate students interested in health, physical education and recreation research are encouraged to assist faculty members with grant writing, data collection, data analysis, and report writing. Additionally, students can assist faculty members with submissions of scholarly presentations and articles, as needed.

Departmental Admission Requirements

Health Education Specialist Major and Minor
New freshmen, transfer students, and students from other USU majors who have at least a 2.75 total GPA qualify to enter the Health Education Specialist major. Students must formally apply to the School Health minor. Pre-minor coursework must be completed before application to the school health minor.

Pre-minor coursework for the School Health minor includes:
BIOL 2000 Human Physiology (F,Sp,Su) (4 cr) **or**
BIOL 2010 Human Anatomy (Sp,Su) (4 cr).....4
ENGL 1010 (CL) Introduction to Writing: Academic Prose (F,Sp,Su) ...3
HEP 2500 Health and Wellness (F,Sp,Su) 2
MATH 1050 (QL) College Algebra (F,Sp,Su) (4 cr) **or**
STAT 1040 (QL) Introduction to Statistics (F,Sp,Su) (or higher) (3 cr) .....3 or 4
NFS 1020 (BLS) Science and Application of Human Nutrition (F,Sp,Su) 3

For application materials and deadlines, contact the HPER Department Main Office (PE 122).

Physical Education Major and Minor
New freshmen, transfer students, and other USU majors who have at least a 2.75 total GPA qualify to enter the Physical Education major. A 2.75 total GPA is also required for the Physical Education Coaching minor.

Parks and Recreation Major and Minor
New freshmen, transfer students, and students from other USU majors who have at least a 2.5 total GPA qualify to enter the Parks and Recreation major or minor.

Course Requirements

Health Education Specialist Major
The HPER Department offers a program of study leading to a Bachelor of Science degree in Health Education. The program offers two emphasis areas. The **community health** emphasis prepares students to work in state and local health departments, clinical settings, nonprofit health organizations, wellness centers, and private industry. Students in the **school health** emphasis earn a teaching license upon graduation and will primarily teach health courses in middle and high schools. All Health Education Specialist majors will be well-prepared to sit for the nationally recognized Certified Health Education Specialist exam.

A. Core Requirements (30 credits)
The following courses are required for all students in **both** the School Health Emphasis *and* the Community Health Emphasis. A grade of *C-* or higher is required in all HEP courses.

HEP 2000 First Aid and Emergency Care (F,Sp).....2
HEP 2500 Health and Wellness (F,Sp,Su).....2
HEP 3000 Drugs and Human Behavior (F,Su).....3
HEP 3200 Consumer Health (F,Su).....3
HEP 3600 (CI)[1] Introduction to Community Health (F).....3
HEP 4200 (QI)[2] Planning and Evaluation for Health Education (F).....3
HEP 5100 (CI)[11] Cultural and Complementary Medicine (Sp).....3
BIOL 2000 Human Physiology (F,Sp,Su).....4
BIOL 2010 Human Anatomy (Sp,Su).....4
NFS 1020 (BLS) Science and Application of Human Nutrition (F,Sp,Su).....3

In addition, students must complete requirements for either the Community Health Emphasis or the School Health Emphasis, and must achieve a *C-* or better grade in all HEP courses. A 2.75 total GPA is required for graduation.

Community Health Emphasis (72 credits)

The Community Health emphasis offers a program of study leading to a Bachelor of Science degree as a Health Education Specialist. The emphasis requires a total of 72 credits. Students must complete the Health Education Specialist 30-credit core, and the Community Health Education 36-credit core.

A. Required Professional Core (36 credits)

HEP 3800[26] Grant Proposal Writing (Sp).....3
HEP 3900[27] Social Marketing in Health Education (Sp).....3
HEP 4100[9] Foundations of Community Health (Sp).....3
HEP 4600[10] Field Work in Health Education (F,Sp,Su).....9
INST 5400 Computer Applications for Instruction and Training (F,Sp,Su).....3
MHR 3110 (DSS)[8] Managing Organizations and People (F,Sp).....3
NFS 4480 Community Nutrition (F).....3
PSY 2800 (QI)[12] Psychological Statistics (F,Sp).....3
PUBH 4030[13] Communicable Disease Control (F).....3
PUBH 4040[14] Fundamentals of Epidemiology (Sp).....3

B. Elective Courses (select 6 credits)

Students must complete 6 credits of elective courses, taking at least one course from two of the following three areas:

Human Nature

ANTH 3110 North American Indian Cultures (F).....3
ANTH 4130 (DSS)[8] Medical Anthropology: Matter, Culture, Spirit, and Health (Sp).....3
FCHD 1500 (BSS)[8] Human Development Across the Lifespan (F,Sp)..3
FCHD 3110[16] Human Sexuality (F,Su).....3
FCHD 3530[16] Adolescence (F,Sp).....3
PSY 1010 (BSS)[8] General Psychology (F,Sp,Su).....3
PSY 1100[15] Developmental Psychology: Infancy and Childhood (F,Sp).....3
PSY 1210[15] Psychology of Human Adjustment (F,Sp).....3
PSY 4240 (DSS)[8] Multicultural Psychology (F).....3
SOC 2500 Sociology of Gender (F).....3
SOC 3010 Race, Class, and Gender (F,Sp).....3
SOC 3330 Medical Sociology (F).....3
SW 2500[17] Human Behavior in the Social Environment (Sp).....3

Content and Methods in Education

BIS 1400[19] Microcomputer Applications in Business (F,Sp,Su).....3
BIS 1550 (CI)[8] Business Correspondence (taught through Center for Independent and Distance Learning *only*).....3
HEP 3100[22] School Health Programs (F).....3
HEP 3400 Stress Management (F,Sp).....3
HEP 3500 Elementary School Health Education (F,Sp).....2
HEP 4400[22] Creative Methods in Teaching Health Education (F,Sp)....3
HEP 4500[22] Sexuality Education within the Schools (Sp).....3
HEP 5700 Special Topics in Health (F,Sp,Su).....1-3
JCOM 1110[20] Beginning Newswriting for the Mass Media (F,Sp,Su)....3
JCOM 2200[21] Introduction to Video Media (F,Sp).....3
JCOM 3010 Communication Research Methods (F,Sp).....3
NFS 2020[23] Nutrition Throughout the Life Cycle (Sp).....3
PEP 4100[24] Exercise Physiology and Principles of Conditioning (F,Sp).....4
SOC 3750 Sociology of Aging (F).....3
SPCH 1050 (CI)[8] Public Speaking (F,Sp).....3

Organizational Dynamics in the Family and Community

FCHD 3100[16] Abuse and Neglect in Family Context (F,Sp).....3
HEP 5000 (CI)[8,11] Race, Class, and Gender Issues in Health (Arr).....3
JCOM 2300 Introduction to Public Relations (F,Sp).....3
MHR 3820 (DSS)[8] International Management (F,Sp).....3
POLS 3810 (DSS)[8] Introduction to Public Policy (F).....3
PUBH 3120 Family and Community Health (Sp).....3
PUBH 3310[25] Occupational Health and Safety (F).....3
SPCH 2600 (CI)[8] Interpersonal Communication (F,Sp).....3
SPCH 3250 (CI)[8] Organizational Communication (F).....3
SW 2400[17] Social Work with Diverse Populations (Sp).....3
SW 3750[18] Medical Social Services (F).....3

School Health Emphasis (74 credits)

(only for students desiring teacher licensure)

The School Health emphasis offers a program of study leading to a Bachelor of Science degree as a Health Education Specialist, and is an approved teaching major through the Department of Secondary Education. It is also necessary for students to complete an approved teaching minor (credits will vary). Students must complete the Health Education Specialist 30 credit core, the Secondary Education 35 credit core, and the School Health Education 9 credit core.

Note: Students must be formally approved by the HPER academic advisor and accepted into the School Health Emphasis before enrolling for School Health Core Courses.

A. Required School Health Core (9 credits)

FCHD 1500 (BSS)[8] Human Development Across the Lifespan (F,Sp)..3
HEP 3100[5] School Health Programs (F).....3
HEP 4500[5] Sexuality Education within the Schools (Sp).....3

B. Secondary Teacher Education Program (STEP) (35 credits)

Level 1 (15-week courses)[3]

INST 3500 Technology Tools for Secondary Teachers (F, Sp, Su).....1
SCED 3100 Motivation and Classroom Management (F,Sp).....3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp).....3
HEP 3300[5] Clinical Experience I (or minor Clinical Experience I) (F,Sp).....1
HEP 4400[7] Creative Methods in Teaching Health Education (F,Sp) (3 cr) **or**
Minor Special Methods Course (3 cr).....3

Level 2 (15-week courses)[4]

SPED 4000 Education of Exceptional Individuals (may be taken anytime) (F,Sp,Su).....2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp).....3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp).....3
HEP 4300[5] Clinical Experience II (or minor Clinical Experience II) (F,Sp).....1

HEP 4400[7] Creative Methods in Teaching Health Education (F,Sp) (3 cr) **or**
Minor Special Methods Course (3 cr) 3

Level 3 (includes 13 weeks of student teaching and 2 weeks of Student Teaching Seminar)[6]
HEP 5500[5] Student Teaching Seminar (2 weeks) (F,Sp) 2
HEP 5630[5] Student Teaching (13 weeks) (F,Sp) 10

School Health Minor (33 credits)

Note: This is an approved teaching minor through the Department of Secondary Education. Students must be formally accepted into the School Health minor before enrolling for the School Health Education Core Courses. Students completing this minor *must* have a teaching major. Applications for the minor are available from the HPER Department. Prior to admission to the minor, the following courses must be completed: ENGL 1010, BIOL 2000 or 2010, HEP 2500, MATH 1050 or STAT 1040 (or higher), and NFS 1020. A grade of *C*- or higher is required in all HEP courses.

FCHD 1500 (BSS)[8] Human Development Across the Lifespan (F,Sp) .. 3
HEP 2000 First Aid and Emergency Care (F,Sp,Su) 2
HEP 2500 Health and Wellness (F,Sp,Su) 2
HEP 3000 Drugs and Human Behavior (F,Su) 3
HEP 3100[5] School Health Programs (F) 3
HEP 3200 Consumer Health (F,Su) 3
HEP 3300[5] Clinical Experience I (F,Sp) (1 cr) **or**
HEP 4300[5] Clinical Experience II (F,Sp) (1 cr) 1
HEP 4400[5] Creative Methods in Teaching Health Education (F,Sp) 3
HEP 4500[5] Sexuality Education within the Schools (Sp) 3
HEP 5100 (CI)[11] Cultural and Complementary Medicine (Sp) 3
BIOL 2000 Human Physiology (F,Sp,Su) (4 cr) **or**
BIOL 2010 Human Anatomy (Sp,Su) (4 cr) 4
NFS 1020 (BLS) Science and Application of Human Nutrition (F,Sp,Su) 3

[1]Prerequisite: HEP 2500.
[2]Prerequisites: HEP 3600; and STAT 1040 or MATH 1030 (or higher). HEP 3100 or 4100 is recommended prior to taking this course. Senior standing is also recommended.
[3]Prerequisite: Admittance to teacher education program.
[4]Prerequisite: Admission to teacher education program and completion of level 1.
[5]Prerequisite: Formal acceptance into the School Health emphasis or School Health minor.
[6]Prerequisite: Completion of Levels 1 and 2; Student Teaching Placement.
[7]Students in the School Health emphasis must receive formal acceptance into the emphasis prior to taking HEP 4400. During the level in which HEP 4400 is not taken (either Level 1 or Level 2), students should complete a minor special methods course.
[8]Course approved for University Studies credit.
[9]Prerequisite: HEP 2500.
[10]Prerequisites: HEP 3600, 4100, and consent of instructor.
[11]Prerequisite: Junior standing (or higher).
[12]Prerequisite: STAT 1040 (or higher).
[13]It is recommended that BIOL 1110 or 3300; or BIOL 2000 and 2010 be completed prior to taking PUBH 4030.
[14]It is recommended that a course in statistics, such as STAT 3000 or PSY 2800, and PUBH 4030 be completed prior to taking PUBH 4040.
[15]Prerequisite: PSY 1010.
[16]Prerequisites: FCHD 1500, 2400.
[17]Prerequisite: SW 1050.
[18]Prerequisites: SW 1050, 2400, 2500.
[19]Prerequisite: Ability to keyboard at 25 wpm minimum.
[20]Prerequisites: ENGL 1010 or equivalent, English Proficiency Test, typing test, and permission of Department of Journalism and Communication.
[21]Prerequisites: Minimum grades of *C*+ in JCOM 1000, 1110, and 2000.
[22]Prerequisite: Consent of instructor for students not in the School Health emphasis or the School Health minor.
[23]Prerequisite: NFS 1020.
[24]Prerequisites: BIOL 2000, 2010, MATH 1050.
[25]Prerequisite: CHEM 1220.
[26]Prerequisites: HEP 2500, ENGL 2010, and passing score on Computer and Information Literacy (CIL) exam.
[27]Prerequisites: HEP 2500 and passing score on Computer and Information Literacy (CIL) exam.

Parks and Recreation Major (51 credits)

The HPER Department offers a program of study leading to a Bachelor of Science Degree in Parks and Recreation. This program prepares students to become professionals in the areas of public, private, commercial, therapeutic, voluntary, and special service settings of parks and recreation. Graduates of the program will be capable of directing, planning, designing, managing, and administering parks and recreation programs. A 2.5 total GPA is required for graduation.

A. Parks and Recreation Core Courses (45 credits)

PRP 1000 Introduction to Parks and Recreation (F,Sp) 3
PRP 2500 Outdoor Recreation Management (F) 3
PRP 3000 Recreation Programming (Sp) 3
PRP 3100 Leisure and Aging (Sp) 2
PRP 3500 (CI)[29, 30] Community Recreation Administration (F) 3
PRP 3750 Commercial Recreation and Tourism (Sp) 3
PRP 3900 Introduction of Therapeutic Recreation for Diverse Populations (F) 3
PRP 4300[35] Legal Aspects of Recreation and Leisure (F) 3
PRP 4400 Recreation Park and Facility Management (F) 3
PRP 4700 Internship Seminar (F,Sp) 1
PRP 4750[31] Recreation Internship (F,Sp,Su) 9
PRP 5000 (CI)[29,32] Seminar in Recreation (F,Sp) 3
INST 5400 Computer Applications for Instruction and Training (F,Sp,Su) 3
ENVS 3300 Fundamentals of Recreation Resources Management (F) 3

B. Electives (6 credits)

Select at least 6 credits from the following courses:
PRP 1500 Social Recreation Leadership (Sp) 3
PRP 4000[34] Therapeutic Recreation (Sp) 3
PRP 4200[28,33] Advanced Therapeutic Recreation (F) 3
HEP 2000 First Aid and Emergency Care (F,Sp) 2
HEP 3400 Stress Management (F,Sp) 3
LAEP 1030 (BCA) Introduction to Landscape Architecture (F,Sp,Su) .. 3
ENVS 4130 Recreation Policy and Planning (Sp) 3
ENVS 4500 (CI)[29] Wildland Recreation Behavior (F) 3
ENVS 4600 Natural Resource Interpretation (F) 3
Activity Courses in Physical Education (numbered PE 1000-2000) 1-3

C. Additional Requirements

In addition to the above requirements for the major, students are required to select a minor from an approved area outside the major.

Therapeutic Recreation Track

Instead of completing the minor, Parks and Recreation Majors may elect to complete a track in Therapeutic Recreation. This track requires the following courses, for a total of 22-23 credits of supportive courses:

A. Required Courses (17 credits)

BIOL 2000 Human Physiology (F,Sp,Su) 4
BIOL 2010 Human Anatomy (Sp,Su) 4
FCHD 1500 (BSS) Human Development Across the Lifespan (F,Sp) ... 3
PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
PSY 3210 Abnormal Psychology (F,Sp) 3

B. Choose two or more courses from the following (5-6 credits):

PSY 1100 Developmental Psychology: Infancy and Childhood (F,Sp) .. 3
PSY 1210 Psychology of Human Adjustment (F,Sp) 3
PSY 2100 Developmental Psychology: Adolescence (Sp) 3
REH 1010 (BSS) Disability in the American Experience 3
SOC 3410 Juvenile Delinquency (F,Sp) 3
SPED 4000 Education of Exceptional Individuals (F,Sp,Su) 2

Note: PSY 1010 is a prerequisite to PSY 3210, 1100, 1210, and 2100.

Additionally, students must complete PRP 4000 and 4200 as part of their electives, and PRP 4750 (Recreation Internship) must be completed under the direct supervision of a certified therapeutic recreation specialist. PRP 4000 must be completed prior to taking PRP 4750.

Completion of this program does *not* guarantee eligibility for certification or licensure. It is the student's responsibility to ensure all program requirements of the NCTRC are met.

CTRS certification requires passing the NCTRC Therapeutic Recreation Specialist Certification Examination. State licensing may also be required.

Parks and Recreation Minor
(for students not majoring in Parks and Recreation)

A. Required Courses (15 credits)
PRP 1000 Introduction to Parks and Recreation (F,Sp) 3
PRP 1500 Social Recreation Leadership (Sp) 3
PRP 2500 Outdoor Recreation Management (F) 3
PRP 3000 Recreation Programming (Sp) 3
PRP 3500 (CI)[29] Community Recreation Administration (F) 3

B. Elective Courses (6 credits)
Select at least 6 credits from the following courses.

PRP 3100 Leisure and Aging (Sp) 2
PRP 3900 Introduction of Therapeutic Recreation for Diverse Populations (F) 3
PRP 4000[34] Therapeutic Recreation (Sp) 3
PRP 4300[35] Legal Aspects of Recreation and Leisure (F) 3
PRP 4400 Recreation Park and Facility Management (F) 3
ENVS 3300 Fundamentals of Recreation Resources Management (F) 3

[28]This course is taught during alternate years.
[29]This course is approved for Communications Intensive (CI) University Studies credit.
[30]PRP 1000 and 3000 are prerequisites to PRP 3500.
[31]PRP 1000, 2250, 3000, 4300, and 4700 are prerequisites to PRP 4750. Students must complete 200 hours of related work experience prior to enrolling in PRP 4750.
[32]PRP 1000, 2500, 3500, 3750, 3900, 4000, and 4400 are prerequisites to PRP 5000.
[33]PRP 4000 is a prerequisite for PRP 4200.
[34]PRP 3900 is a prerequisite for PRP 4000.
[35]PRP 1000, 2250, and 3000 are prerequisites for PRP 4300.

Physical Education Major: Exercise Science Emphasis (54 credits)
A 2.75 total GPA is required for graduation.

A. Prerequisites (12 credits)
BIOL 2000 Human Physiology (F,Sp,Su) 4
BIOL 2010 Human Anatomy (Sp,Su) 4
MATH 1050 (QL)[36] College Algebra (F,Sp,Su) 4

B. Professional Foundation (24 credits)
PE 3000 Dynamic Fitness (F,Sp,Su) 3
HEP 2500 Health and Wellness (F,Sp,Su) 2
PEP 2000 Introduction and History of Physical Education (F,Sp) 2
PEP 3100 Athletic Injuries (F,Sp) 3
PEP 3250 Anatomical Kinesiology (Sp) 3
PEP 4100[37, 53] Exercise Physiology and Principles of Conditioning (F,Sp) 4
PEP 4200 (QI)[37, 52, 53] Biomechanics (F,Sp) 4
PEP 4400 (QI)[52] Evaluation in Physical Education (F,Sp) 3

C. Professional Development (15 credits)

HPER (5 credits minimum)
HEP 2000 First Aid and Emergency Care (F,Sp,Su) 2
HEP 3200 Consumer Health (F,Su) 3
HEP 3400 Stress Management (F,Sp) 3
PEP 4000 Mental Aspects of Sports Performance (F,Sp,Su) 3
PEP 5070 Sport Sociology (Sp) 3
PEP 5430 (CI)[51] The History and Philosophy of Physical Education (F) 3

Biology (4 credits minimum, including lab)
BIOL 1010 (BLS) Biology and the Citizen (F,Sp,Su) 3
BIOL 1020 Biological Discovery: A Lab Course (F,Sp) 1
BIOL 1210 Biology I (F) 4
BIOL 1220 (BLS)[38] Biology II (Sp) 4
BIOL 3200 (QI)[39, 52] Principles of Genetics (F,Sp,Su) 4
BIOL 5190[40] Molecular Genetics (Sp) 3

Chemistry (3 credits minimum)
CHEM 1010 (BPS) Introduction to Chemistry (F,Sp) 3
CHEM 1110 (BPS)[55] General Chemistry I (F,Sp) 4
CHEM 1130[41] General Chemistry Laboratory (Sp) 1
CHEM 1120 (BPS)[42] General Chemistry II (Sp) 4
CHEM 1210[43] Principles of Chemistry I (F,Sp) 4
CHEM 1230[44] Chemistry Principles Laboratory I (F,Sp) 1
CHEM 1220 (BPS)[45] Principles of Chemistry II (F,Sp,Su) 4
CHEM 1240[46] Chemistry Principles Laboratory II (F,Sp) 1

Integrated (3 credits minimum)
NFS 1020 (BLS) Science and Application of Human Nutrition (F,Sp,Su) 3
NFS 3020 Nutrition and Physical Performance (F) 2
PHYX 1100 (BPS) Great Ideas in Physics 3
PHYX 1200 (BPS) Introduction to Physics by Hands-on Exploration 4
PHYX 2110[47] The Physics of Living Systems I 4
PHYX 2120 (BPS)[48] The Physics of Living Systems II 4
PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
PSY 2100[49] Developmental Psychology: Adolescence (Sp) 3
PSY 2800 (QI)[50] Psychological Statistics (F,Sp) 3
PSY 3210 (DSS) Abnormal Psychology (F,Sp) 3
STAT 1040 (QL)[54] Introduction to Statistics (F,Sp,Su) 3

D. Skill Development (3 credits)
Select 3 **different** physical education activity courses numbered from PE 1000 to PE 2120.

[36]Math ACT score of at least 23, MATH 1010, or satisfactory score on placement exam is a prerequisite for this course.
[37]BIOL 2000, 2010, MATH 1050 are prerequisites for this course.
[38]BIOL 1210 is a prerequisite for this course.
[39]BIOL 1210; MATH 1050; and CHEM 1110 or 1220 are prerequisites for this course.
[40]BIOL 3200; and CHEM 3700 or 5700 are prerequisites for this course.
[41]CHEM 1110 must be taken previously or concurrently.
[42]CHEM 1110 is a prerequisite for this course.
[43]MATH 1050 or higher, or Math ACT score of at least 25, is a prerequisite for this course.
[44]CHEM 1210 must be taken previously or concurrently.
[45]CHEM 1210 is a prerequisite for this course.
[46]CHEM 1230 is a prerequisite for this course.
[47]MATH 1100 or 1210 is a prerequisite for this course.
[48]MATH 1100 or 1210, and PHYX 2110 are prerequisites for this course.
[49]PSY 1010 is a prerequisite for this course.
[50]STAT 1040 is a prerequisite for this course.
[51]This course is approved for Communications Intensive (CI) University Studies credit.
[52]This course is approved for Quantitative Intensive (QI) University Studies credit.
[53]Admission to the Physical Education Major is required prior to enrolling in this course.
[54]Math ACT score of 19 or greater, or MATH 1010, or 70 percent or greater on MATH 1050 placement test is a prerequisite for this course.
[55]Math ACT score of at least 23, or MATH 1050 or higher, is a prerequisite for this course.

Physical Education Major: Pre-Physical Therapy Emphasis (72 credits)

Please note that it is the student's responsibility to check with the individual physical therapy schools concerning courses required for admission. Completion of Utah State University's Department of HPER Pre-Physical Therapy emphasis will *not guarantee* admission into physical therapy school. A 3.0 total GPA is required to graduate.

A. Prerequisites (15 credits)

BIOL 2000 Human Physiology (F,Sp,Su) 4
BIOL 2010 Human Anatomy (Sp,Su) 4
MATH 1050 (QL)[56] College Algebra (F,Sp,Su) 4
PSY 1010 (BSS) General Psychology (F,Sp,Su) 3

B. Professional Foundations (26 credits)

PE 3000 Dynamic Fitness (F,Sp,Su) 3
PEP 2020 Introduction to Physical Therapy (F) 2
PEP 3100 Athletic Injuries (F,Sp) 3
PEP 3250 Anatomical Kinesiology (Sp) 3
PEP 4100[57, 72] Exercise Physiology and Principles of Conditioning (F,Sp,Su) 4
PEP 4200 (QI)[57, 71, 72] Biomechanics (F,Sp) 4
PEP 4250 Advanced Cooperative Work Experience (F,Sp,Su) 4
PEP 4400 (QI)[71] Evaluation in Physical Education (F,Sp) 3

C. Professional Development (31 credits)

Biology (4 credits minimum, including lab)
BIOL 1010 (BLS) Biology and the Citizen (F,Sp,Su) 3
BIOL 1020 Biological Discovery: A Lab Course (F,Sp) 1
BIOL 1210 Biology I (F) 4
BIOL 1220 (BLS)[58] Biology II (Sp) 4
BIOL 3200 (QI)[59, 71] Principles of Genetics (F,Sp,Su) 4
BIOL 5190[60] Molecular Genetics (Sp) 3

Chemistry (9 credits minimum)
CHEM 1110 (BPS)[73] General Chemistry I (F,Sp) 4
CHEM 1130[74] General Chemistry Laboratory (Sp) 1
CHEM 1120 (BPS)[75] General Chemistry II (Sp) (4 cr) **or**
CHEM 1210[61] Principles of Chemistry I (F,Sp) (4 cr) 4
CHEM 1230[62] Chemistry Principles Laboratory I (F,Sp) 1
CHEM 1220 (BPS)[63] Principles of Chemistry II (F,Sp,Su) 4
CHEM 1240[64] Chemistry Principles Laboratory II (F,Sp) 1

Mathematics (6 credits minimum)
MATH 1100 (QL)[65] Calculus Techniques (higher-numbered course may be substituted) (F,Sp,Su) (3 cr) **or**
MATH 1210 (QL)[65] Calculus I (F,Sp,Su) (4 cr) ..... 3 or 4

Choose one course from the following:
STAT 2000 (QI)[66] Statistical Methods (F,Sp,Su) 3
STAT 2300 (QL)[66] Business Statistics (F,Sp,Su) 4
STAT 3000 (QI)[67] Statistics for Scientists (F,Sp) 3

Physics (8 credits minimum)
PHYX 2110[68] The Physics of Living Systems I 4
PHYX 2120 (BPS)[69] The Physics of Living Systems II 4

Psychology (3 credits minimum)
PSY 1210[70] Psychology of Human Adjustment (F,Sp) 3
PSY 2100[70] Developmental Psychology: Adolescence (Sp) 3
PSY 3210[70] **(DSS)** Abnormal Psychology (F,Sp) 3

[56] Math ACT score of at least 23, MATH 1010, or satisfactory score on placement exam is a prerequisite for this course.
[57] BIOL 2000, 2010, MATH 1050 are prerequisites for this course.
[58] BIOL 1210 is a prerequisite for this course.
[59] BIOL 1210; MATH 1050; and CHEM 1110 or 1220 are prerequisites for this course.
[60] BIOL 3200, and CHEM 3700 or 5700 are prerequisites for this course.
[61] MATH 1050, or Math ACT score of at least 25, is a prerequisite for this course.
[62] CHEM 1210 must be taken previously or concurrently.
[63] CHEM 1210 is a prerequisite for this course.
[64] CHEM 1230 is a prerequisite for this course.
[65] MATH 1050, or a Math ACT score of at least 25, is a prerequisite for MATH 1100; MATH 1050 and 1060, or an AP Calculus score of at least 3 on the AB test or a Math ACT score of at least 27, are prerequisites for MATH 1210.
[66] MATH 1050 is a prerequisite for this course.
[67] MATH 1100 or 1210 is a prerequisite for this course.
[68] MATH 1100 or 1210 is a prerequisite for this course.
[69] MATH 1100 or 1210, and PHYX 2110 are prerequisites for this course.
[70] PSY 1010 is a prerequisite for this course.
[71] This course is approved for Quantitative Intensive (QI) University Studies credit.
[72] Admission to the Physical Education Major is required prior to enrolling in this course.
[73] Math ACT score of at least 23, or MATH 1050 or higher, is a prerequisite for this course.
[74] CHEM 1110 must be taken previously or concurrently.
[75] CHEM 1110 is a prerequisite for this course.

Physical Education Major: Teaching Emphasis (K-12) (90 credits)

Students also need to complete a teaching minor. A 2.75 total GPA is required for graduation.

Note: This is an approved teaching major through the Department of Secondary Education.

A. Prerequisites (17 credits)

BIOL 2000 Human Physiology (F,Sp,Su) 4
BIOL 2010 Human Anatomy (Sp,Su) 4
MATH 1050 (QL)[76] College Algebra (F,Sp,Su) 4
HEP 2000 First Aid and Emergency Care (F,Sp) 2
PE 3000 Dynamic Fitness (F,Sp,Su) 3

B. Skill Development (5 credits)

PEP 2100 Skills 1 (Swimming, Volleyball, Football) (F,Sp) 1
PEP 2200 Skills 2 (Noncompetitive Lifetime Activities) (F,Sp,Su) 1
PEP 2300 Skills 3 (Softball, Basketball, Soccer) (F,Sp) 1
PEP 2400 Skills 4 (Tennis, Badminton, Track and Field) (F,Sp) 1
PEP 2500 Rhythms and Movement (F,Sp) 1

C. Professional Development (11 credits)

PEP 2000 Introduction and History of Physical Education (F,Sp) 2
PEP 3050 Physical Education in the Elementary School (F,Sp,Su) 3
PEP 3100 Athletic Injuries (F,Sp) 3
PEP 3200 (CI)[83, 87] Motor Learning and Skill Analysis (F,Sp,Su) 3

D. Professional Foundations (16 credits)

PEP 4000 Mental Aspects of Sports Performance (F,Sp,Su) 3
PEP 4100[77, 87] Exercise Physiology and Principles of Conditioning (F,Sp) 4
PEP 4200 (QI)[77, 86, 87] Biomechanics (F,Sp) 4
PEP 4350 Administration of Physical Education (F,Sp) 2
PEP 4400 (QI)[86] Evaluation in Physical Education (F,Sp) 3

E. Methods of Teaching (3 credits)

PEP 3550 Strategies and Methods of Teaching Team, Individual, and Dual Sports and Fitness (F,Sp) 3

F. Methods of Coaching (3 credits)

PEP 4500[78] Methods of Coaching (F,Sp,Su) 3

G. Secondary Teacher Education Program (STEP) (35 credits)

Note: Acceptance into the STEP is required prior to enrolling in the courses listed below. Students must take a minor Special Methods Course and Clinical Experience, which may be completed during Level 1 or Level 2.

Level 1 (15-week courses)
INST 3500 Technology Tools for Secondary Teachers (F, Sp, Su).....1
SCED 3100 Motivation and Classroom Management (F,Sp).....3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp).....3
Clinical Experience I (in minor)[79].....1
Methods of Teaching (in minor)[80].....3

Level 2 (15-week courses)
SPED 4000 Education of Exceptional Individuals (may be taken anytime) (F,Sp,Su).....2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp).....3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp).....3
PEP 4300[81] Clinical Experience II (F,Sp).....1
PEP 4900 (CI)[82, 83] Methods of Physical Education (F,Sp).....3

Level 3 (includes 13 weeks of student teaching and 2 weeks of Student Teaching Seminar)
PEP 5500[84] Student Teaching Seminar (2 weeks) (F,Sp).....2
PEP 5630[85] Student Teaching in Secondary Schools (13 weeks) (F,Sp).....10

[76]Math ACT score of at least 23, MATH 1010, or satisfactory score on placement exam is a prerequisite for this course.
[77]BIOL 2000, 2010, MATH 1050 are prerequisites for this course.
[78]HEP 2000 (which may be taken concurrently) should be completed prior to taking this course.
[79]Clinical Experience I is taught under course number 3300 in various departments. Must be taken concurrently with Methods of Teaching in minor.
[80]Methods of Teaching courses are taught under various course numbers in various departments. Must be taken concurrently with Clinical Experience I in minor.
[81]Must be taken concurrently with PEP 4900.
[82]PEP 3550 should be taken prior to this course.
[83]This course is approved for Communications Intensive (CI) University Studies credit.
[84]Must be taken concurrently with PEP 5630.
[85]Must be taken concurrently with PEP 5500. Application for student teaching must be completed. Applications are available in EDUC 330.
[86]This course is approved for Quantitative Intensive (QI) University Studies credit.
[87]Admission to the Physical Education Major is required prior to enrolling in this course.

Physical Education Coaching Minor

This minor requires 28 credits, plus 17 credits of prerequisites and the 35-credit Secondary Teacher Education Program (STEP).

A. Required Prerequisites (17 credits)
BIOL 2000 Human Physiology (F,Sp,Su).....4
BIOL 2010 Human Anatomy (Sp,Su).....4
MATH 1050 (QL)[88] College Algebra (F,Sp,Su).....4
HEP 2000 First Aid and Emergency Care (F,Sp,Su).....2
PE 3000 Dynamic Fitness (F,Sp,Su).....3

B. Skill Development (select 3 credits)
PEP 2100 Skills 1 (Swimming, Volleyball, Football) (F,Sp).....1
PEP 2200 Skills 2 (Noncompetitive Lifetime Activities) (F,Sp,Su).....1
PEP 2300 Skills 3 (Softball, Basketball, Soccer) (F,Sp).....1
PEP 2400 Skills 4 (Tennis, Badminton, Track and Field) (F,Sp).....1
PEP 2500 Rhythms and Movement (F,Sp).....1

C. Professional Foundation (18 credits)
PEP 3100 Athletic Injuries (F,Sp).....3
PEP 3200 (CI)[91, 93] Motor Learning and Skill Analysis (F,Sp,Su).....3
PEP 4000 Mental Aspects of Sports Performance (F,Sp,Su).....3
PEP 4100[89, 93] Exercise Physiology and Principles of Conditioning (F,Sp).....4
PEP 4350 Administration of Physical Education (F,Sp).....2
PEP 4400 (QI)[92] Evaluation in Physical Education (F,Sp).....3

D. Methods of Teaching (3 credits)
PEP 3550 Strategies and Methods of Teaching Team, Individual, and Dual Sports and Fitness (F,Sp).....3

E. Methods of Coaching (4 credits)
PEP 2050 Sport Rules and Regulations of the Utah High School Athletic Association (Sp).....1
PEP 4500[90] Methods of Coaching (F,Sp,Su).....3

F. Secondary Teacher Education Program (STEP) (35 credits)
PEP 4900, Methods of Physical Education, and PEP 3300, Clinical Experience I, should be taken as part of the STEP.

[88]Math ACT score of at least 23, MATH 1010, or satisfactory score on placement exam is a prerequisite for this course.
[89]BIOL 2000, 2010, MATH 1050 are prerequisites for this course.
[90]HEP 2000 (which may be taken concurrently) should be completed prior to taking this course.
[91]This course is approved for Communications Intensive (CI) University Studies credit.
[92]This course is approved for Quantitative Intensive (QI) University Studies credit.
[93]Admission to the Physical Education Coaching Minor is required prior to enrolling in this course.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information

Updated information concerning undergraduate courses and major or minor requirements can be obtained from the HPER Department, or check the departmental home page at: **http://www.coe.usu.edu/hper**

Major requirement sheets, which provide detailed information about requirements for departmental majors, can be obtained from the department, or accessed online at:
http://www.usu.edu/ats/majorsheets/

Financial Support

The College of Education and Human Services distributes scholarship applications beginning in January of each academic year. For information on those scholarships awarded by the HPER Department, visit the departmental office in HPER 122.

Assessment

Health Education Specialist Major Assessment

The Health Education Specialist major curriculum is based on the National Commission of Health Education Credentialing (NCHEC) seven responsibility areas for entry-level health educators. As such, each course is evaluated on a yearly basis to determine if it is meeting student needs, based on NCHEC guidelines. Coursework prepares graduating students to successfully sit for the Certified Health Education Specialist exam. Additionally, exit surveys and interviews are given to students to better assess the curriculum and the learning needs of the students. To further assess curriculum needs, follow-up surveys are sent to students one year after they graduate.

Physical Education Major Assessment

The Physical Education major curriculum is based on the standards and benchmarks of the National Association for Sport and Physical Education (NASPE). Each course is matrixed against the standards to assure quality in curriculum content. A number of assessments are available for exiting students, including Praxis 2 and a number of certifications of the American College of Sports Medicine (ACSM). Exit surveys and interviews are conducted annually, as well as post-graduation surveys.

Parks and Recreation Major Assessment

The Parks and Recreation major curriculum is accredited by the National Council on Accreditation of the National Recreation and Park Association (NRPA). To assure compliance with the national standards, the curriculum is evaluated annually. Students are eligible to sit for the National Certification Examination. Exit surveys and interviews are conducted yearly, as well as post-graduation surveys.

Graduate Programs

Please refer to the general admission requirements on pages 93-94 of this catalog. In addition, the letters of recommendation must be written by professionals in health or physical education who know the applicant and his/her work well. Students with fewer than 12 credits of undergraduate health or physical education coursework must make up any deficiencies before being granted matriculated status. Basic competencies that have not been acquired through courses or experience may be obtained by completing prerequisite undergraduate courses without credit. Other nongraduate credit courses may be required by the admissions committee. Students with weak oral or written English skills will be required to take remedial work or complete undergraduate or Intensive English classes.

Degree Programs

Master of Science

The MS is available for students who plan to teach, provide community leadership, or do further graduate or research study.

Master of Education

The MEd is designed for students desiring to improve teaching competencies.

Specializations

MS students may select an area of emphasis for research and study from the following specializations: Corporate Wellness, Exercise Science, and Health Education.

Course Requirements

Core Courses

MS candidates specializing in ***Corporate Wellness*** must complete the following courses:

EDUC 6570 Introduction to Educational and Psychological Research (F,Sp,Su) 3
HEP 6800 Seminar in Health Behavior (F) 3
PEP 6290 Corporate Wellness Marketing (Sp) 3
PEP 6400 Exercise in Health, Fitness, and Sport (Arr) 4
PEP 6450 Fitness Assessment and Exercise Testing (Sp) 3
PEP 6500 Practicum in Corporate Wellness (F,Sp,Su) 1-10
PEP 6540 Wellness Programming (Sp) 3
PEP 6800 Biomechanics and Ergonomics of Health, Industry, and Sport (Sp) 3
PEP 6810 Research Methods in Health Sciences (F) 3
PSY 6470 Health Psychology (F) 3

MS candidates specializing in ***Exercise Science*** must complete the following courses:

EDUC 6600 Measurement, Design, and Analysis I (F,Sp,Su) 3
PEP 6400 Exercise in Health, Fitness, and Sport (Arr) 4
PEP 6800 Biomechanics and Ergonomics of Health, Industry, and Sport (Sp) 3
PEP 6810 Research Methods in Health Sciences (F) 3
PEP 6970 Thesis (F,Sp,Su) 1-9

Eleven credits must be selected from the following:

HEP 6100 Current Trends in Health Promotion (F) 3
PEP 6050 Psychological Aspects of Sports Performance (Arr) 3
PEP 6070 Sport in Society (Sp) 3
PEP 6420 Curriculum in Physical Education (F) 3
PEP 6430 History and Philosophy of Physical Education and Sport (F) 3
PEP 6450 Fitness Assessment and Exercise Testing (Sp) 3
PEP 6540 Wellness Programming (Sp) 3
PEP 6830 Motor Learning (Sp) 3
or other committee-approved electives

MS candidates specializing in ***Health Education*** must complete the following courses:

EDUC 6010 Introduction to Program Evaluation: Evaluation Models and Practical Guidelines (F,Sp) 3
EDUC 6570 Introduction to Educational and Psychological Research (F,Sp,Su) 3
EDUC 6600 Measurement, Design, and Analysis I (F,Sp,Su) 3
HEP 6100 Current Trends in Health Promotion (F) 3
HEP 6600 Field Work in Health Education (F,Sp,Su) 3
HEP 6800 Seminar in Health Behavior (F) 3
HEP 6970 Thesis (F,Sp,Su) 1-9

Students must also complete 6 credits from the following:

FCHD 6020 Survey of Human Development Research (Sp) 3
FCHD 6060 Human Development Theories (F) 3
HEP 6300 Stress Management (Arr) 3
HEP 6700 Special Topics in Health (F,Sp,Su) 1-6
HEP 6900 Independent Study (F,Sp,Su) 1-3
HEP 6950 Independent Research (F,Sp,Su) 1-3
INST 5230 Instructional Graphic Production (F,Su) 3
INST 6350 Instructional Design Process (F) 3
MHR 6370 Project Management 3
NFS 6200 Nutritional Epidemiology (F) 2
NFS 6210 Advanced Public Health Nutrition (Sp) 2
PEP 6290 Corporate Wellness Marketing (Sp) 3
PEP 6400 Exercise in Health, Fitness, and Sport (Arr) 4

PEP 6540 Wellness Programming (Sp) 3
PSY 6470 Health Psychology (F) 3
PSY 7700 Grant Writing (Sp) 3
PUBH 4030 Communicable Disease Control (F) 3
PUBH 4040 Fundamentals of Epidemiology (Sp) 3
PUBH 4310 Industrial Recognition of Hazards (F) 4
PUBH 4330 Industrial Hygiene Physical Hazards (Sp) 3
SOC 6460 Sociology of Health (F) 3
Other courses may be selected on the basis of a student's need and interests, subject to the approval of the student's committee.

MEd candidates must complete the following courses:
EDUC 6410 Educational Foundations (F,Su) 2
EDUC 6550 Research for Classroom Teachers (F,Sp,Su) 3
EDUC 6710 Diversity in Education (Sp,Su) 3
PEP 6050 Psychological Aspects of Sports Performance (Arr) 3
PEP 6070 Sport in Society (Sp) 3
PEP 6400 Exercise in Health, Fitness, and Sport (Arr) 4
PEP 6420 Curriculum in Physical Education (F) 3
PEP 6430 History and Philosophy of Physical Education and Sport (F) 3
PEP 6690 Analysis of Teaching Physical Education (Arr) 3
PEP 6800 Biomechanics and Ergonomics of Health, Industry, and Sport (Sp) 3
PEP 6830 Motor Learning (Sp) 3
PEP 6960 Master's Project (F,Sp,Su) 3

Research

Research areas include health promotion, health education, exercise science, corporate wellness, sport psychology, sport in society, biomechanics, and pedagogy.

Financial Assistance

Teaching and research assistantships are available through the HPER Department and are awarded on a competitive basis. Application for the assistantships must be made by March 15 to the department head. A formal application for admission must be submitted to the School of Graduate Studies at the same time as the application for an assistantship. A recipient of a graduate assistantship is usually eligible for a waiver for the out-of-state portion of his or her tuition.

Additional Information

Additional and/or updated information about graduate courses and programs may be obtained from the HPER Department, or check the departmental home page at: **http://www.coe.usu.edu/hper**.

Health, Physical Education and Recreation Faculty

Professors
Richard D. Gordin, Jr., sport psychology
Craig W. Kelsey, parks and recreation

Associate Professors
Hilda Fronske, motor learning
Julie A. Gast, community health, multicultural health issues, women's health
Donna L. Gordon, health promotion
Edward M. Heath, exercise physiology
Arthur R. Jones, recreation administration
John M. Kras, administration, history, philosophy and sociology of sport
Dennis A. Nelson, family recreation, multicultural education, recreation programming
Rolayne Wilson, elementary physical education

Nontenure Assistant Professors
Eadric Bressel, biomechanics
Brett Holt, education pedagogy
Phillip Waite, community health, therapeutic reminiscence, worksite health promotion, program evaluation
Dale Wagner, exercise physiology

Senior Lecturer
Peter J. Mathesius, conditioning, sport skills, and teaching methods

Course Descriptions

Health Education Professional (HEP), pages 530-531

Physical Education Professional (PEP), pages 575-577

Parks and Recreation Professional (PRP), pages 570-571

Physical Education Activity (PE), pages 573-575

Dance West Summer, Dance Education Classes (DE), page 494

Department of History

Department Head: Norman L. Jones
Location: Main 323
Phone: (435) 797-1290
FAX: (435) 797-3899
TTY: (435) 797-1290
E-mail: monica.ingold@usu.edu
WWW: http://www.usu.edu/history

Graduate Program Coordinator: Christopher A. Conte, Main 323G, (435) 797-1303, cconte@cc.usu.edu

Director of Undergraduate Studies: Denise O. Conover, Main 321H, (435) 797-0870, conoverd@hass.usu.edu

Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), Master of Science (MS), Master of Arts (MA) in History; participates in Master of Social Sciences (MSS)

Undergraduate Programs

Objectives

The Department of History offers a flexible program to accomplish the following objectives:

1. To train undergraduates to research, analyze, synthesize, and communicate reasonable conclusions about the past by using the historical method.

2. To inculcate cultural literacy and provide the knowledge necessary for informed decision-making by citizens of Utah, the United States, and the world.

3. To provide students with crucial work skills in research, analysis, communication, and collaboration, as well as enriching their lives.

4. To contribute to the liberal arts curriculum of the University through general education, general interest courses, the history major, the history teaching major, minors in history and classics, and the interdisciplinary programs of folklore, American studies, and British and commonwealth studies.

History is a reading- and writing-intensive program.

Requirements

Departmental Requirements

New freshmen accepted in good standing by the University may apply for admission to the History Department. Students transferring from another institution or another major will be admitted if they have a minimum 2.5 GPA in history courses and an overall minimum GPA of 2.5. A minimum 2.75 GPA is required for entry into the teacher education program.

Candidates for a degree must earn a grade of *C* or better in all history courses used to meet the requirements for a history major or minor, a history teaching major or teaching minor, or a classics minor.

Bachelor of Arts (BA) Degree in History

The BA degree requires a minimum proficiency in a foreign language. This proficiency may be established in one of the following ways:

1. 16 credits in a single language.

2. Documentation of a proficiency level of "intermediate low" or better through an examination administered by the USU Department of Languages, Philosophy, and Speech Communication.

3. Completion of any upper-division foreign language course constituting a third-year course of study with a grade of *C* or better.

Bachelor of Science (BS) Degree in History

The BS degree in history requires 15 credits of math and science beyond the University Studies requirements. Of the 15 credits, 3 must be earned in a statistics course, preferably in social science statistics. The remaining 12 credits must include a course series from the following list:

BIOL 1210 Biology I (F).....4
BIOL 1220 (BLS) Biology II (Sp).....4
CHEM 1210 Principles of Chemistry I (F, Sp).....4
CHEM 1220 (BPS) Principles of Chemistry II (F, Sp, Su).....4
GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F, Sp).....4
GEOL 3200 (DSC) The Earth Through Time (Sp).....4
PHYX 2110 The Physics of Living Systems I.....4
PHYX 2120 (BPS) The Physics of Living Systems II.....4
PHYX 2210 (QI) General Physics—Science and Engineering I.....4
PHYX 2220 (BPS/QI) General Physics—Science and Engineering II..4

History Major

Thirty-six credits of history coursework are required. A grade of *C* or better must be earned in all history courses used for the major. Each major must complete *one* of the following three courses in the area of premodern civilization:

HIST 1020 (BHU) Cultural and Economic Exchange in the Pre-Nineteenth Century World (F, Sp).....3
HIST 1040 (BHU) Foundations of Western Civilization: Ancient and Medieval (F, Sp, Su).....3
HIST 1060 (BHU) Introduction to Islamic Civilization.....3

Each major must complete *one* of the following two courses in the area of modern civilization:

HIST 1030 (BHU) The Modern World (F, Sp, Su).....3
HIST 1050 (BHU) Foundations of Western Civilization: Modern (F, Sp, Su)... 3

Each major must complete *one* of the following two courses in the area of American history:

HIST 2700 (BAI) United States to 1877 (F, Sp, Su).....3
HIST 2710 (BAI) United States 1877-Present (F, Sp, Su).....3

If a student has taken HIST 1700 (American Civilization) on another campus or at USU before entering the History Major, this course may be counted toward meeting the American history survey requirement. No student, including transfer students, may count more than 12 credits of lower-division coursework toward the history major.

Every senior must take HIST 4990 (Special Topics in History), the capstone course for the major. Students should complete their remaining 21-24 credits by taking 3000- and 4000-level history courses. Since new courses may be approved from time to time, any upper-division course listed in the current *Schedule of Classes* under *History* is acceptable.

No more than 3 credits of HIST 4930 (Directed Readings) may be applied toward the major.

Since the study of history requires an understanding of many fields of human endeavor, students majoring in history must select a minor. Historians are encouraged to take electives in fields that will broaden their knowledge of the world and are closely allied to history, such as literature, economics, geography, anthropology, political science, sociology, classics, philosophy, or foreign language.

Students wishing to undertake graduate work should pursue the BA degree. During their senior year, they should take the graduate record exam (GRE).

History Teaching Emphasis

Thirty-nine credits, earned in history courses, are required. A grade of *C* or better must be earned for all history courses used for the emphasis. Each student in the History Teaching Emphasis must complete *one* of the following three courses in the area of premodern civilization:

HIST 1020 (BHU) Cultural and Economic Exchange in the Pre-Nineteenth Century World (F, Sp) 3
HIST 1040 (BHU) Foundations of Western Civilization: Ancient and Medieval (F, Sp, Su) 3
HIST 1060 (BHU) Introduction to Islamic Civilization 3

Each student must complete *one* of the following two courses in the area of modern civilization:

HIST 1030 (BHU) The Modern World (F, Sp, Su) 3
HIST 1050 (BHU) Foundations of Western Civilization: Modern (F, Sp, Su) 3

Each student must complete *one* of the following two courses in the area of American history:

HIST 2700 (BAI) United States to 1877 (F, Sp, Su) 3
HSIT 2710 (BAI) United States 1877-Present (F, Sp, Su) 3

If a student has taken HIST 1700 (American Civilization) on another campus or at USU before entering the History Major, this course may be counted toward meeting the American history survey requirement. No student, including transfer students, may count more than 12 credits of lower-division coursework toward the history teaching emphasis.

Every student in the History Teaching Emphasis must take *one* of the following three courses as a senior capstone course:

HIST 4850 Interpreting the Past for Teachers (F, Sp) 3
HIST 4860 Teaching History (F) 3
HIST 4870 Teaching World History: Themes, Approaches, and Materials (Sp) 3

Students should complete their remaining 24-27 credits by taking 3000- and 4000-level history courses. A minimum of two courses must be taken from each of the following areas: U.S. history, European history, and world history. Since new courses may be approved from time to time, any upper-division course listed in the current *Schedule of Classes* under History is acceptable. To become licensed to teach history, students must be admitted to the Secondary Teacher Education Program (STEP). A 2.75 GPA is required for admission, as well as a writing test, a speech and hearing test, and a background check. Application should be made as soon as practical after the history teaching emphasis has begun. Applications for admission are available in the History Department Office. The STEP requires 35 credits of coursework, in addition to the 39 credits of history courses. For additional information about the STEP, contact Harold Heap, secondary education undergraduate advisor, (435) 797-2222.

All teaching majors must also have a teaching minor in an area for which teaching licensure can be granted.

No more than 3 credits of HIST 4930 (Directed Readings) may be applied toward the major.

Minor in History

Twenty-one credits are required. A grade of *C* must be earned in all history courses used for the minor. Every student must complete *one* of the following three courses in the area of premodern civilizations:

HIST 1020 (BHU) Cultural and Economic Exchange in the Pre-Nineteenth Century World (F, Sp) 3
HIST 1040 (BHU) Foundations of Western Civilization: Ancient and Medieval (F, Sp, Su) 3
HIST 1060 (BHU) Introduction to Islamic Civilization 3

Every student must complete *one* of the following two courses in modern civilization:

HIST 1030 (BHU) The Modern World (F, Sp, Su) 3
HIST 1050 (BHU) Foundations of Western Civilization: Modern (F, Sp, Su) 3

Every student must complete *one* of the following courses in the area of American history:

HIST 2700 (BAI) United States to 1877 (F, Sp, Su) 3
HIST 2710 (BAI) United States 1877-Present (F, Sp, Su) 3

If a student has taken HIST 1700 (American Civilization) on another campus or at USU before entering the history minor, this course may be counted toward meeting the American history survey requirement. No student, including transfer students, may count more than 12 credits of lower-division coursework toward the history minor. Students should complete their remaining 9-12 credits by taking 3000- and 4000-level history courses.

No more than 3 credits of HIST 4930 (Directed Readings) may be applied toward the minor.

History Teaching Minor

Twenty-four credits are required. A grade of *C* or better must be earned in all history courses used for the minor. Every student must complete *one* of the following three courses in premodern civilization:

HIST 1020 (BHU) Cultural and Economic Exchange in the Pre-Nineteenth Century World (F, Sp) 3
HIST 1040 (BHU) Foundations of Western Civilization: Ancient and Medieval (F, Sp, Su) 3
HIST 1060 (BHU) Introduction to Islamic Civilization 3

Every student must complete *one* of the following two courses in modern civilization:

HIST 1030 (BHU) The Modern World (F, Sp, Su) 3
HIST 1050 (BHU) Foundations of Western Civilization: Modern (F, Sp, Su) 3

Every student must complete *one* of the following courses in the area of American history:

HIST 2700 (BAI) United States to 1877 (F, Sp, Su) 3
HIST 2710 (BAI) United States 1877-Present (F, Sp, Su) 3

If a student has taken HIST 1700 (American Civilization) on another campus or at USU before entering the history teaching minor, this course may be counted toward meeting the American history survey requirement. No student, including transfer students, may count more than 12 credits of lower-division coursework toward the history minor. All teaching minors in history must take one of the following:

HIST 4850 Interpreting the Past for Teachers (F, Sp) 3
HIST 4860 Teaching History (F) 3
HIST 4870 Teaching World History: Themes, Approaches, and Materials (Sp) 3

Students should complete their remaining 9-12 credits by taking 3000- and 4000-level history courses.

No more than 3 credits of HIST 4930 (Directed Readings) can be applied toward the minor.

Classics Minor
For information about the Classics Minor, which is administered through the Department of History, see page 200 of this catalog.

Academic Opportunities

Departmental Honors in History
Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Students in the department with a minimum GPA of 3.5 may apply to pursue an honors degree in history. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. Those interested should consult the department honors coordinator. Additional information can be found online at: **http://www.usu.edu/honors/**

Phi Alpha Theta
History students with a minimum GPA of 3.1 in history classes and an overall minimum GPA of 3.0 are eligible for membership in the national history honor society, Phi Alpha Theta. Those interested should consult the faculty advisor for Phi Alpha Theta.

Undergraduate Teaching Fellows
The UTF program is designed to provide students, particularly potential teachers, with the opportunity to assist professors and, thereby, learn first-hand about the nature of the profession. UTFs must maintain a minimum GPA of 3.0 and be sponsored by a professor. Application forms are available in the History Department office.

Additional Information

For updated information concerning programs and courses offered by the Department of History, visit the departmental web page at: **http://www.usu.edu/history**

Major requirement sheets, which provide detailed information about requirements for the History major, can be obtained from the department, or can be accessed online at: **http://www.usu.edu/ats/majorsheets/**

Financial Support

Scholarships, grants-in-aid, and work-study programs are available through the University. The History Department offers tuition waivers and scholarships to outstanding students. In addition, undergraduates may be employed as research assistants and clerical assistants within the department. For current information on scholarships and employment opportunities, consult the department head.

Graduate Programs

Admission Requirements

Graduate applicants may be admitted to the program for either the master of arts or master of science in history if they meet the following qualifications: (1) hold a baccalaureate degree; (2) have at least a 3.0 cumulative GPA over the last 60 credits of undergraduate work, with a 3.5 GPA in history courses recommended; (3) submit Graduate Record Examination (GRE) general test scores, with a **required** minimum score at the 40th percentile on the verbal section, and a **recommended** minimum score at the 40th percentile on *both* the quantitative and written portions of the exam; (4) submit three letters of recommendation from persons acquainted with the applicant's academic performance and potential; and (5) submit a brief statement of proposed fields of interest and career goals.

The Department of History also strongly recommends that applicants have either an undergraduate major or minor in history or a closely related field (i.e., American studies, classics). Familiarity with one or more foreign languages is highly desirable and is required for the master of arts degree and for master's level research in many fields of history. Applications will be strengthened by the submission of an example of the student's historical writing, such as a paper (about 15 pages in length) written for a seminar or upper-division course.

The final recommendation for admission will be made upon consideration of all the above factors by the department to the School of Graduate Studies.

Degree Programs and Additional Requirements

Master's Degree, Plan A (Thesis)
The thesis option should be taken by anyone intending to do research or enter another program for the doctoral degree. A master of arts or master of science degree can be completed with this option.

The program consists of 30 semester credits beyond the bachelor's degree, 6 credits of which must be in thesis research. Students must take HIST 6000, as well as either HIST 6010 or 6020, or another theory-intensive course approved by the director of graduate studies. Students may apply a maximum of 4 internship credits earned while working in an archives, for a museum, on the staff of a scholarly journal, or as a teaching intern in an upper-division undergraduate course.

The remainder of the 30 credits may be taken as electives in history or related courses relevant to the student's program.

Upon arrival at USU, students are urged to meet with the departmental graduate advisor, who will direct them to one or more faculty members with similar interests. Through consultations with the graduate and faculty advisor, the first-year student will form a thesis committee and formulate a course of study. By the end of the first year, most students will have submitted to their committees a proposal for the thesis, which they will write under the close supervision of the committee members. The oral defense usually takes place in the spring semester of the second year.

Master's Degree, Plan B (Nonthesis)
A nonthesis master's program can help a student attain employment in many areas, but is not recommended for students planning to secure a doctorate. A master of arts, master of science, or master of social sciences degree can be completed with this option.

The Plan B program consists of 30 credits beyond the bachelor's degree. The course requirements are identical to those of the Plan A program, except that only 3 thesis credits are permitted.

Students completing the Plan B program do not write a full-length thesis. Instead, Plan B students write a research paper of approximately 30 pages in length and submit a portfolio of their graduate writing, which includes two additional and distinct pieces of writing. Students defend their Plan B research papers and writing portfolios before their major professor and the members of the supervisory committee. Final approval of the Plan B rests with the department, rather than with the School of Graduate Studies.

Master of Arts
To receive a master of arts (MA) degree, students must successfully complete two years of foreign language at the undergraduate level. If two years of undergraduate language study already appear on the student's transcript, he or she must demonstrate current competence through successful completion of a language exam or by taking a 3000- or 4000-level language course for which a grade of *B* or higher proves competency. In all cases, an individual assessment must be made of a student's language status. For further information, see page 98.

Students planning to continue on for a doctorate should be aware that many doctoral programs in history require that students pass written proficiency exams in two languages.

Master of Science
To receive a master of science (MS) degree in history, students may be required to demonstrate, to the satisfaction of their supervisory committee, the ability to incorporate scientific methodologies in their research as appropriate.

Master of Social Sciences (MSS)
Like the MA and MS in history, the MSS degree requires a minimum of 30 credits, including 15 credits in the major discipline of history, plus a minimum of 15 credits from one of the following two tracks. *Track A*: a minimum of 15 credits from two approved minor areas, with at least two courses in each minor area. *Track B*: a minimum of 15 credits from an approved minor and a liberal arts and sciences cluster, with at least two courses in the minor and two courses in the cluster. Accepted minor disciplines include instructional technology, environment and society, political science, psychology, and sociology/anthropology. This degree is designed for secondary school teachers who need more training to obtain licensure in additional teaching fields or who simply wish to deepen their understanding of a related field.

Students in the MSS program are required to take HIST 6000 and 3 credits of HIST 6970 for their Plan B. A supervisory committee consists of a major professor in history and two committee members, each representing one of the student's minor fields. MSS students, like other Plan B students in history, must write a research paper of approximately 30 pages and submit a portfolio of their graduate writing that consists of two separate and distinct pieces of work, one from each of their two minor fields. An oral defense of the student's Plan B paper and portfolio is held before the student's supervisory committee.

Additionally, the master of social sciences (MSS) in history requires students to demonstrate an understanding of statistical applications in the social sciences.

Financial Assistance

The primary financial assistance offered by the Department of History is through graduate assistantships. Each year, the History Department offers to qualified students, on a competitive basis, a total of seven graduate assistantships. These assistantships entail approximately 20 hours of work per week, assisting faculty members with departmental introductory survey courses. The award carries a stipend and an out-of-state tuition waiver. To keep their assistantships, graduate assistants must maintain a GPA of 3.0 (or a *B* average) and be a full-time student (see page 92). While enrolled in the MA or MS program, graduate assistants may hold graduate assistantships for a maximum of two years. Applications for graduate assistantships should be postmarked *no later than February 1*, for the upcoming academic year.

Graduate students may be eligible for Carr Scholarships to supplement their graduate assistantships. Competitive grants to support travel and research are also available to history graduate students.

In addition, financial assistance is available through the *Western Historical Quarterly*, a journal published at USU. The editors of the journal offer, during alternate years, the S. George Ellsworth Editorial Fellowship and the Robert M. Utley Editorial Fellowship. These fellowships are awarded to highly qualified students working as editorial assistants in that office. These fellowships are nationally competitive and allow graduate students to learn all aspects of journal production. They carry a stipend (with additional funding possible during the summer) and a waiver of the out-of-state portion of the tuition. Materials should be postmarked no later than February 1, for the upcoming academic year. Applicants will be notified in early April.

Funding for the S. George Ellsworth Fellowship is provided by the *Western Historical Quarterly*, the School of Graduate Studies, the College of Humanities, Arts and Social Sciences, and the S. George Ellsworth Endowment of the Mountain West Center for Regional Studies. The S. George Ellsworth Fellowship is being offered for the 2007-2008 academic year.

Funding for the Robert M. Utley Fellowship is provided by the *Western Historical Quarterly* and the School of Graduate Studies. The Robert M. Utley Fellowship is being offered for the 2006-2007 and 2008-2009 academic years. For further information about *Western Historical Quarterly* fellowships, write to: *Western Historical Quarterly*, Utah State University, 0740 Old Main Hill, Logan UT 84322-0740; or send e-mail to: **cdoyle@hass.usu.edu**.

The application deadline for both fellowships is February 1, for the upcoming academic year.

Additional Funding
In addition to graduate assistantships and the *Western Historical Quarterly* editorial assistantships, the School of Graduate Studies awards a limited number of scholarships. To be eligible for these awards, all students should complete the application for admission and send it, along with GRE scores and letters of recommendation, to the School of Graduate Studies by February 1. A financial aid application form (which may be obtained from the History Department) should be returned to the History Department by February 1.

Students interested in establishing eligibility for federal loans and work-study will need to complete the Free Application for Federal

Student Aid (FAFSA) and submit it to: Financial Aid Office, Utah State University, 1800 Old Main Hill, Logan UT 84322-1800. Questions about eligibility should be directed to the Financial Aid Office, tel. (435) 797-0173.

Career Opportunities

Some graduates of USU's master's program continue their formal education in PhD programs or law schools. Others find employment in the two-year college or secondary school systems, as teachers or administrators. Still others work for historical societies, museums, publishing firms, and a variety of enterprises in the private sector.

Additional Information

Current announcements and other information are posted to the History Department website: **http://www.usu.edu/history**

History Faculty

Professors
Jay Anderson, folklore, folklife, film studies
C. Robert Cole, England, modern European history
Norman L. Jones, medieval, early modern Europe, Britain, Christianity
David R. Lewis, American Indian, environmental, Utah, editor of Western Historical Quarterly
Daniel J. McInerney, American intellectual history, Nineteenth Century
Michael L. Nicholls, early American history
Leonard N. Rosenband, France, European economic and labor history
Frances B. Titchener, ancient Greece and Rome, Latin, Greek

Adjunct Professors
Doran J. Baker, Electrical and Computer Engineering Department, history of science
Barry M. Franklin, Secondary Education Department, history of education
Christopher B. R. Pelling, Regius Professor of Greek, Oxford University: Classics

Trustee Professor Emerita
Anne M. Butler, U.S. West, U.S. Women

Professors Emeritus
William F. Lye, Africa, India, Canada
F. Ross Peterson, U.S. modern political history, Black history

Associate Professors
Christopher A. Conte, Africa, world, and environmental history
Mark L. Damen, ancient world, theatre history, Latin, Greek
R. Edward Glatfelter, Russia and East Asia, associate dean of College of Humanities, Arts and Social Sciences
Peter Mentzel, Eastern Europe, Ottoman empire, Islamic civilization
Colleen O'Neill, West, Native American, labor, associate editor of *Western Historical Quarterly*
Stephen C. Siporin, folklore, oral narrative folklore, folk art

Assistant Professors
M. Lawrence Culver, U.S. Southwest Borderlands; U.S. West, cultural, environmental, and urban history
Victoria M. Grieve, modern American cultural and intellectual history, art and culture of the West
Jennifer Ritterhouse, U.S. history, African-American history, U.S. South, women's history
James Sanders, Latin America
Susan O. Shapiro, Greek intellectual history, ancient Greek and Latin language
Timothy S. Wolters, science and technology, American history

Adjunct Assistant Professors
Daniel M. Davis, photograph curator, U.S. West
Stephen C. Sturgeon, manuscript curator, Twentieth Century U.S. West, political, environmental history

Senior Lecturer
Denise O. Conover, American diplomatic history, U.S. military, American civilization

Adjunct Instructors
Michael W. Johnson, Director of Utah History Fair, Mountain West Center for Regional Studies
Robert E. Parson, University Archivist, Special Collections and Archives
Elaine Thatcher, Associate Director of Mountain West Center for Regional Studies

Course Descriptions

History (HIST), pages 531-536
Latin (LATN), page 548
Greek (GRK), page 530
Classics (CLAS), page 486

Director: David F. Lancy
Location: Merrill Library 374
Phone: (435) 797-2715
FAX: (435) 797-3941
E-mail: honors@cc.usu.edu
WWW: http://www.usu.edu/honors/

Program Coordinator:
Christie L. Fox, Merrill Library 374, (435) 797-3940, clfox@cc.usu.edu

Administrative Assistant:
Danene Dustin, Merrill Library 374, (435) 797-2715, danene@cc.usu.edu

Undergraduate Program

Overview

Utah State University's Honors Program, established in 1966, provides an enhanced academic environment for highly motivated undergraduates. The Honors Program includes a community of scholars whose curiosity, creativity, and enthusiasm for learning foster educational achievement and personal growth.

Honors offers students intensive seminars, experimental classes, interdisciplinary courses, writing projects, leadership opportunities, and special activities. Participants may define independent study programs and design special research projects. Honors students work in close contact with professors in smaller classes; they pursue studies in greater depth than regular classes would allow. Participants also enjoy the company of other committed students who encourage and support one another's intellectual growth and productivity. Honors students participate actively in their own education.

Honors serves students who work hard, raise questions, and seek answers. It is designed for students who want to go beyond minimum requirements and narrow specialties. The program benefits those who want to make the most of their university experience.

The Honors program maintains strict standards for both entering and completing its program. However, there are no extra fees to pay, and there are Honors options suitable for both entering freshmen and transfer students. The most important criterion for success is a student's motivation and dedication to learning.

Entrance to the Honors Program

Students enter Honors at one of two points during their academic career. The majority will enter through the "Scholars Forum." Students with strong academic qualifications, who plan to enroll at Utah State as freshmen, are automatically given membership in the Scholars Forum, which includes enrollment in a 1-credit online orientation class (HONR 2000H) and an appropriate Honors University Studies class.

The Scholars Forum gives high-ability students the opportunity to explore various options to maximize the value of their undergraduate education. Many will elect to continue along the "Honors Pathway" until graduation.

Other students may elect to join Honors after they have completed all or nearly all of their General Education requirements. These students will initially enroll in HONR 2100H (Honors Inquiry Seminar), which will prepare them to pursue an Honors degree in their major (i.e., "Departmental Honors").

Participation in Honors

To be eligible for entrance into Honors, a student must have a GPA of 3.50. To maintain eligibility and to graduate in Honors, a student must not allow her or his GPA to drop below 3.30. The Honors Office places students with a GPA of less than 3.30 on probation. A student with a GPA of less than 2.50 will be dropped from the program. Reinstatement can be requested if the GPA is raised to 3.30. Honors students must also register for one Honors class per semester in order to remain in the program.

Honors Degrees

Utah State University offers Honors Degrees designed to fill a variety of student needs. Members may work toward one of three degree options:

1. **Department Honors.** Requires 15 semester credits as specified in a Department Honors plan, including a senior thesis/project.

2. **Department Honors with Honors in University Studies.** Requires 27 semester credits including as many as 12 credits from the *Honors Course List* and at least 15 credits, including Honors senior thesis/project credits, in an approved Department Honors Plan.

3. **University Honors.** Requires 27 semester credits including at least 12 credits from the *Honors Course List* and as many as 15 credits, including Honors senior thesis/project credits, in an upper-division plan of study that has been approved by the Honors Director.

Listing of Honors Courses

Class offerings change frequently. For the most complete list, see the *Honors Course List* available in the Honors Program office, Merrill Library 374.

Course Descriptions

Honors (HONR), page 536

Department of Instructional Technology

Department Head: Byron R. Burnham
Location: Emma Eccles Jones Education 215A
Phone: (435) 797-2692
FAX: (435) 797-2693
E-mail: gbaird@cc.usu.edu
WWW: http://it.usu.edu/

Degrees offered: Master of Education (MEd), Master of Science (MS), Educational Specialist (EdS), Doctor of Philosophy (PhD) in Instructional Technology

Graduate specializations: *MEd*—Educational Technology, Information Technology and School Library Media Administration; *MS* and *EdS*—Instructional Development for Training and Education

Undergraduate Programs

Objectives and Requirements

There is no major in instructional technology at the undergraduate level because of the need for those preparing in the field to have especially strong general education knowledge as well as depth in a specialized field of study. The minors include **School Library Media** and **Multimedia Development**. The objectives and requirements of these minors are as follows:

School Library Media Minor Objectives

1. Provides students with library media skills.
2. Prepares students to receive a Utah Library Media Endorsement.
3. Prepares students for employment as a School Library Media Specialist.

School Library Media Minor Requirements

This minor is available only through distance education. Those persons wanting endorsement for positions in the public schools must complete a teaching license and the prescribed School Library Media minor. A 2.7 grade point average is required for admission and endorsement as a school library media specialist at the bachelor's level. For detailed requirements, contact the department.

Multimedia Development Minor Objectives

1. Provides students with design skills.
2. Develops students' multimedia production skills.
3. Prepares students for employment in the multimedia field.

Multimedia Development Minor Requirements

Persons not seeking a public school position may elect the minor in Multimedia Development, in conjunction with a major in other fields. The Multimedia Development minor is especially appropriate for fields which require computer-based instruction, such as business, computer science, engineering, communications, and others. For detailed requirements, contact the department.

Graduate Programs

Instructional technology is a systematic way of designing, developing, implementing, and evaluating the processes of learning and teaching with specific objectives based on research in human learning and communication. It employs a combination of human and nonhuman resources to bring about more effective instruction. Instructional technology includes aspects of instructional design, product development, interactive learning technologies, multimedia, distance education, and library and information literacy. Each aspect of the field has unique contributions to make to the teaching-learning process.

The department offers specializations in Educational Technology, Information Technology and School Library Media Administration, and Instructional Development for Training and Education. A program emphasis in online learning communities in education and training is also offered.

Graduates are in demand in business and industrial settings, as well as in education, because of their preparation in training and instructional design. Admission to the graduate program is open to all students regardless of their undergraduate preparation.

Admission Requirements

See general admission requirements, pages 93-94. The MS and MEd admission requirements include a 3.0 GPA for the last 60 semester credits (90 quarter credits) and an MAT score or GRE verbal and quantitative scores at or above the 40th percentile. In addition, the department requires that those applying for the EdS program have a master's degree, and a score at or above the 40th percentile on the verbal/quantitative tests of the GRE or 46 percent or above on the MAT. Those applying for the PhD program must have GRE verbal and quantitative test scores at or above the 40th percentile. Demonstrated writing and computer proficiency is required of all applicants. A minimum score of 213 computerized or 550 paper/pencil on the TOEFL is required for all prospective international students.

Applications for all degree programs must be submitted to the School of Graduate Studies by January 31. Space permitting, additional qualified candidates will be considered until the beginning of summer semester. Students who wish to be considered for financial aid must submit applications by January 31 for the coming academic year. All graduate students are expected to begin their programs in the fall semester.

Applicants for the EdS and PhD programs who do not hold a master's degree in Instructional Technology must complete additional course requirements.

No applications will be considered until all required information is received by the School of Graduate Studies.

Degree Programs

Master of Science (MS)

This degree emphasizes instructional design and development, and prepares the graduate with skills to apply principles of instructional systems design to education and training. The program prepares instructional developers to take positions in corporate training programs in business and industry. It also leads to careers in public and higher education, development of interactive learning technologies, telecommunications, distance education, and adult education.

The MS degree is available to qualified students with bachelor's degrees from any field. Undergraduate students planning in advance for an MS in Instructional Technology should consider the department's Multimedia Development minor as part of their bachelor's program.

Master of Education (MEd)

This master's program is only available through extension and distance education via distance delivery methods. The MEd degree is a two-year cohort rotation (i.e., students proceed as a group through the two-year program). To be successful in this master's degree program, students should own or have access to a personal computer. They will also need an e-mail address and internet access in order to communicate with faculty members and other students in the program. Persons choosing the MEd have two specializations available: **Educational Technology**, and **Information Technology and School Library Media Administration**. A **Distance Learning Endorsement** is also available within the MEd. Students accepted to the MEd may also choose certain electives from the Administrative Supervisory Certificate (ASC) program. They may then apply for acceptance to the ASC.

The **Educational Technology** specialization is directed at public school educators and administrators who are interested in applying the principles of educational technology to the teaching/learning process. This specialization may lead to a position as a district-level or building-level educational technology specialist responsible for technology integration and in-service training related to computers and other technologies.

The **Information Technology and School Library Media Administration** specialization is directed at persons seeking employment in a school library media center. Students seeking this specialization must complete the School Library Media minor (available only through extension and distance education) and apply for a Utah State Library Media Endorsement. This specialization may lead to a position as a district-level or building-level school library media specialist (K-12). The library media specialist is prepared to apply principles of library and information technology to help students and teachers. The library media specialist also understands the effective use of learning resources in the teaching/learning process.

The goal of the **Distance Learning Endorsement Program** is to provide public school educators with the knowledge and skills they need in order to be effective teachers of students who are participating in distance education programs. To prepare them for meeting the challenges of teaching and learning at a distance in the K-12 setting, the program aids master teachers in becoming (1) effective communicators with distant learners across the barriers of time and distance, and (2) proficient users of telecommunications technologies in instruction.

Educational Specialist Degree (EdS)

The Educational Specialist degree is intended for students interested in acquiring advanced skills in instructional technology beyond those of the master's degree. This program involves coursework, independent study, practicum experiences, and a culminating experience. The degree requires a minimum of 30 credits beyond the master's degree, providing the master's degree was received in the instructional technology field. For students with a master's degree in a field other than instructional technology, a minimum of 40 credits is required.

Doctoral Degree (PhD)

The doctor of philosophy degree emphasizes research and theory building in instructional design and development. The degree offers advanced preparation for graduates seeking a career in higher education, research centers, or corporate training and development.

Course Requirements

Course requirements for all degrees are dependent upon the area of emphasis and are individually planned by the student and the supervisory committee. For planning materials and program details, contact the department.

Financial Assistance

Fellowships, assistantships, and other financial support are available and awarded on a competitive basis. Apply through the department.

Instructional Technology Faculty

Professors
Byron R. Burnham, adult learning
J. Nicholls Eastmond, Jr., theory and evaluation
Alan M. Hofmeister, research

Associate Professors
Mimi Recker, cognitive modeling, interactive learning
Linda L. Wolcott, distance education, library media, and foundations

Assistant Professors
Joanne P. Bentley, learning theory and evaluation
Yanghee Kim, pedagogical agents, instructional design, learning, intelligent tutoring systems
Brett E. Shelton, immersive technologies, cognitive studies
David A. Wiley, learning objects, instructional design theory

Adjunct Instructors
Val W. Dawson, instructional development
JaDene M. Denniston, school library media
Kevin L. Reeve, distance education
Thomas M. Risk, multimedia development

Lecturer
Sheri Haderlie, Instructional Technology Department Outreach Program Manager

Professors Emeriti
M. David Merrill, instructional design
Don C. Smellie, foundations
Ron J. Thorkildsen, research and interactive learning
R. Kent Wood, theory, foundations

Associate Professor Emeritus
J. Steven Soulier, message design, computer applications

Course Descriptions

Instructional Technology (INST), pages 537-540

Intensive English Language Institute

Director: Glenda R. Cole
Location: Main 071
Phone: (435) 797-2059
FAX: (435) 797-4050
E-mail: gcole@cc.usu.edu
WWW: http://www.usu.edu/ieli/

Assistant Director:
Thomas J. Schroeder, Main 069C, (435) 797-1237, faschroe@cc.usu.edu

IELI Undergraduate and Graduate Advisor:
Margaret Garr, Main 069A, (435) 797-2081, mgarr@cc.usu.edu

Objectives

The Intensive English Language Institute (IELI) is an academic program in the College of Humanities, Arts and Social Sciences. IELI teaches international students, residents, and refugees the English skills and cultural knowledge they need to be successful university students. IELI also trains international teaching assistants (ITAs) for USU. Information about the ITA training is available through the School of Graduate Studies.

The IELI program accepts students seeking a degree at Utah State University, as well as students who want to study English for personal or professional reasons. Students may enroll to study *only* English.

Undergraduate students who apply to USU without a TOEFL score of at least 173 computerized or 500 paper/pencil and graduate students applying without a minimum TOEFL score of 213 computerized or 550 paper/pencil must take the IELI Placement Examination, given the first day of each semester, including the first day of the IELI summer session. Based on the examination results, students will be required to study in the IELI or be exempted from further study and permitted to take classes in their major fields.

Curriculum

Four levels of study are offered each semester. The ability levels of classes range from elementary through advanced. Several of the level 1 and 2 classes are combined into multilevel classes. Classes focus on listening, speaking, reading, writing, and cultural skills. In addition, there are topics courses, covering topics ranging from current events and the environment to academic literacy and the cultures of the U.S. Students must complete one topics course for every level they study in the IELI program.

Students advance from one level of a class to the next higher level by obtaining a grade of *C*- or higher in the lower-level class. Students who do not obtain a *C*- or higher in a class must repeat the class. Students who complete all level 4 classes with a *C*- or higher may begin taking courses outside of IELI. Students at level 4, who have less than a full course load remaining in IELI, must take other University credits sufficient to stay in status with visa requirements. Exceptions to this policy must be approved by the director of IELI in consultation with students' major field advisors and the international student officer.

Credit for Intensive English Study

Classes in IELI carry academic credit. Full-time students at each level take 18 credits per semester. A student who begins IELI at level 1 and progresses to level 4 may earn a total of 72 undergraduate elective credits. While all the credits will appear on a student's transcript, a maximum of 18 can be counted toward graduation. Application of the 18 credits will be determined by the student's college and major department. Students must, therefore, meet with their departmental advisors to determine the role of IELI credits in their graduation requirements.

Services

New students in IELI take the Placement Examination and attend an orientation meeting prior to the beginning of each semester. All students are assigned an advisor in IELI who helps them with various difficulties they may encounter. In addition, all the services and privileges offered to students on campus are available to IELI students. These services include health care services, recreational opportunities, and numerous special programs for international students.

Intensive English Language Institute Faculty

Associate Professors
Franklin I. Bacheller
James E. Bame
Glenda R. Cole
James R. Rogers II
Thomas J. Schroeder

Associate Professors Emeritus
Susan J. Carkin
Lee Ann Rawley

Assistant Professors
Ann E. Roemer
Nolan Weil

Course Descriptions

Intensive English Language Institute (IELI), pages 540-541

Interdisciplinary Studies Major

Academic Advisement:

College of Agriculture
Lisa Allen, (435) 797-2267, lisa.allen@ usu.edu

College of Education and Human Services
Terri Gass, (435) 797-1443, terri.gass@usu.edu

College of Humanities, Arts, and Social Sciences
Mary Leavitt, (435) 797-3883, mleavitt@hass.usu.edu

College of Natural Resources
Maureen Wagner, (435) 797-2448, maureen@cc.usu.edu

College of Science
Richard Mueller, (435) 797-2479, rmueller@biology.usu.edu

Degrees offered: Bachelor of Science (BS) and Bachelor of Arts (BA)

Objectives

The organization of academic departments and their associated degree programs reflects the history and traditions of study in those fields. The Interdisciplinary Studies major is intended to serve the needs of students who want to design a unique individualized academic program, obtain a broadly-based education, and diversify their professional potential. The degree is not intended to replace existing majors or curricula. Rather, it is designed to provide the *small number* of students whose degree needs cannot be met with other majors with a program which is less restrictive and more responsive to their individual plans and interests. Students who complete their programs will receive the Bachelor of Science or (if they meet the language requirement) the Bachelor of Arts degree. **The degree *cannot* be used as part of a dual major.**

The Interdisciplinary Studies major is available through the following five colleges: Agriculture; Education and Human Services; Humanities, Arts, and Social Sciences; Natural Resources; and Science. However, the major is *not* available to students enrolled in the College of Business, the College of Engineering, nor the Department of Computer Science. The Interdisciplinary Studies degreee is also available through the University's Continuing Education centers.

Students who think the Interdisciplinary Studies major may be right for them, but are not sure, should ask themselves the following questions:

1. Students must have a minimum of 45 semester credits completed before the major may be declared. Do I have 45 or more semester credits on my transcript? If not, how close am I?

2. Interdisciplinary Studies ***cannot*** duplicate existing majors. Have I explored the educational opportunities at USU? Have I reviewed the *General Catalog* to see what is already available at USU? Have I visited Career Services (University Inn 102) to explore career development programs? Why don't any of the existing majors meet my needs?

3. Which areas of study am I proposing to combine? Do they logically go together? Does USU offer the areas of study I am proposing to combine? What would the program I am proposing lead me to? Are there job opportunites out there?

4. If my degree crosses two or more colleges, which college would I propose to serve as the lead college?

If, after reviewing the above, students feel that they have a unique interest in a subject matter and USU can help, this may be the right major for them. Interested students should make an appointment with the advising center in the college from which the degree will be awarded.

Admission Requirements

Students may apply for admission to the Interdisciplinary Studies major after completing 45 credits with a minimum GPA of 2.0, submitting an Application for Interdisciplinary Studies, and receiving approval for the Application.

Transfer students from other institutions or from other USU majors need to complete a minimum of 45 credits, achieve the required GPA, and have an approved Application for Interdisciplinary Studies for admission to this major in good standing.

Students who wish to pursue the degree must submit a letter of application containing the following information:

1. A clear statement of the student's educational objectives.

2. A proposed program of study including specific courses and listing the faculty member the student proposes to work with on the final thesis or project.

3. A brief statement explaining why the student feels the proposed program is worthy of a college degree.

A current unofficial transcript must be attached to the application. The application should be discussed with and reviewed by the student's major advisor.

Requirements

Students will work with a faculty member or members who will assist in course selection and will oversee the successful completion of the 45 credits in the program. Courses selected must provide coherent, carefully planned programs of study in the area of interest, which must involve two or more disciplines. Courses used for University Studies Breadth Requirements and courses used for Depth Humanities and Creative Arts (DHA), Depth Life and Physical Sciences (DSC), and Depth Social Sciences (DSS) may be counted toward the degree *only with the permission of the college advisor*. However, courses meeting the Communications Intensive (CI) and Quantitative Intensive (QI) requirements may be applied toward requirements for the Interdisciplinary Studies degree.

Courses used to meet the 45-credit minimum requirement may come from any department, with the following restrictions:

1. At least 21 of the 45 credits ***must*** be numbered 3000 or above.

2. Courses used for the major must include ***at least*** 15 *credits each* from two different disciplines. A maximum of 3 internship credits may be counted toward the major. **Note:** Some colleges may require that *more than 15 credits* counted toward the major be taught by departments within their college; check with the college advisor for further information.

3. The coursework must focus on an overarching theme and must be consistent with the student's educational and career goals.

Interdisciplinary Studies Major

4. As part of the 45 credits, students must complete a 3-credit senior project, thesis, or capstone course supervised by their faculty advisor.

5. Students must pass every course approved for the program of study and must earn a composite GPA of at least 2.0 in the 45 credits of coursework used for the major. **Note:** Some colleges may have a higher GPA requirement; check with the college advisor for further information.

6. Courses used for the major may be used for a minor or to fill University Studies Breadth requirements *only with the permission of the college advisor*.

Additional Information

Students interested in the Interdisciplinary Studies degree should contact the advising center in the college from which the degree will be awarded. Students who would like to explore the degree, but are unsure which college they should enroll in, may discuss their interests with Jana Kay Lunstad, University Advising and Transfer Services, (435) 797-3373, janakay.lunstad@usu.edu.

Students exploring whether or not the Interdisciplinary Studies major is right for them should review the major requirement sheet, which can be found online at: **http://www.usu.edu/ats/majorsheets/**

For students pursuing the Interdisciplinary Studies major, the requirement sheet provides details of major requirements, as well as a worksheet for students to record their progress toward fulfilling major requirements.

Course Description

Interdisciplinary Studies (ITDS), page 541

Interior Design Program

Director: Tom C. Peterson
Location: Family Life 320A
Phone: (435) 797-1556
FAX: (435) 797-8245
E-mail: interiors@cc.usu.edu

Degrees Offered: Bachelor of Science (BS) and Bachelor of Arts (BA) in Interior Design

A Master of Science (MS) degree is also available. Degree options are designed for graduates with degrees in interior design, as well as those without interior design degrees. For additional graduate degree information, contact the Interior Design Program.

Undergraduate Emphases: Studio Emphasis, Design Sales and Marketing Emphasis

Overview

The program in interior design is structured with two specific emphases, both of which offer a BS and BA degree. Each has been developed to prepare students for entry into the varied professions of interior design. Students must identify, research, and creatively solve problems pertaining to the function and quality of the interior environment, as well as its relationship to natural and man-made resources. Students must also gain an understanding of the legal and ethical issues that guide and direct the profession.

An interior designer renders professional services with respect to interior and related spaces, both commercial and residential, with special attention to the individuals who will eventually reside in those spaces. These services include programming, design analysis, space planning, and aesthetics, using specialized knowledge of interior construction, building codes, equipment, materials, and furnishings. Another component of each student's training in interior design is the preparation of drawings and documents relative to the design of interior spaces, in order to enhance and protect the health, safety, and welfare of the public.

In an effort to meet the needs of the design profession, the Interior Design Program provides foundation training and technical skill building during the freshman and sophomore years. This is followed by a review process which determines the choice of emphases students may select to complete their degree. The two available emphases are (1) **Studio** and (2) **Design Sales and Marketing**.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Course Requirements

The suggested sequence for completing required coursework for the two Interior Design emphases are as follows.

All Majors

Freshman Year:

Fall Semester (15.5 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 3740 History of Interior Furnishings and Architecture I 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
ART 1120 Two-dimensional Design 3
USU 1330 (BCA) Civilization: Creative Arts (section 001) 3
University Studies Breadth Course 3

Spring Semester (15.5 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 1790 (BCA) Interior Design Theory 3
ID 3750 (CI) History of Interior Furnishings and Architecture II 3
ART 1110 Drawing I 3
University Studies Breadth Course 3
University Studies Quantitative Literacy (QL) Course 3

Sophomore Year:

Fall Semester (13.5-14.0 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 2710 Architectural Graphics I 4
ID 2750 Computer Aided Drafting and Design I 3
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
Art Elective Course(s) 3.0-3.5

Spring Semester (14.5 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 2720 Architectural Graphics II 4
ID 2730 Interior Space Planning and Human Dimensions 4
ID 2760 Computer Aided Drafting and Design II 3
ART 2720 (BHU) Survey of Western Art: Renaissance to Post-Modern 3

Studio Emphasis

Junior Year:

Fall Semester (13.5-14.0 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 3730 Interior Materials and Construction 3
ID 3760 Commercial Design Studio 4
ID 3790 Architectural Systems 3
Art Elective Course(s) 3.0-3.5

Spring Semester (14.5 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 3770 Residential Design Studio 4
ID 3780 Design Detailing 3
PHIL 3810 Aesthetics 3
FCSE 3030 (DSC) Textile Science 4

Summer Semester (4 credits)
ID 4710 Interior Design Advanced Internship I 4

Senior Year:
Fall Semester (12.5 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 4750 Senior Design Studio I 3
MHR 2990 Legal and Ethical Environment of Business 3
University Studies Breadth Courses 6

Spring Semester (12.5 credts)
ID 1700 Interior Design Professional Seminar 0.5
ID 4740 (CI) Business and Professional Practices in Interior Design ... 2
ID 4760 Senior Design Studio II 3
ID 4770 Senior Exhibit 1
Depth Social Sciences (DSS) course 3
Quantitative Intensive (QI) course 3

Design Sales and Marketing Emphasis

Junior Year:
Fall Semester (13.5-14.0 credits)
ID 1700 Interior Design Professional Seminar 0.5
ID 3730 Interior Materials and Construction 3
ID 3790 Architectural Systems 3
MHR 2990 Legal and Ethical Environment of Business 3
Art Elective Course(s) 3.0-3.5
University Studies Breadth Course 3

Spring Semester (10.5 credits)
ID 1700 Interior Design Professional Seminar 0.5
FCSE 3030 (DSC) Textile Science 4
BIS 2450 Spreadsheets and Databases for Business 3
University Studies Breadth Course 3

Summer Semester (4 credits)
ID 4710 Interior Design Advanced Internship I 4

Senior Year:
Fall Semester (11.5 credits)
ID 1700 Interior Design Professional Seminar 0.5
BIS 2550 (CI) Business Communication 3
BIS 3550 Principles of Selling 2
MHR 3110 (DSS) Managing Organizations and People 3
BA 3500 Fundamentals of Marketing 3

Spring Semester (11.5 credts)
ID 1700 Interior Design Professional Seminar 0.5
ID 4740 (CI) Business and Professional Practices in Interior Design ... 2
PHIL 3810 Aesthetics 3
MHR 3710 Developing Team and Interpersonal Skills 3
Quantitative Intensive (QI) course 3

Laptop Computer Requirement

Students entering sophomore-level interior design courses must bring their own laptop computer. Specifications for the laptop will be provided by the Interior Design Program. The computer should be purchased just prior to beginning the sophomore year. Required software will be made available through a special leasing program.

Sophomore Review

In addition to basic undergraduate and graduate requirements set forth in this catalog, students in Interior Design must participate in a Sophomore Review in order to matriculate to junior class standing. The review takes place during the spring semester of a student's sophomore year in the program. Students wishing to enroll in junior-level courses must first submit projects from as many of the following courses as possible: ID 1790, 2710, 2720, 2730, 2750, 2760; ART 1110, 1120; and one elective art skills class. Students will be expected to organize and properly label their projects, as well as deliver them to a location designated by the program.

An additional component of the Sophomore Review will be an analysis of the student's academic performance. Courses considered for junior status are: ID 1750, 1790, 2710, 2720, 2730, 2750, 2760, 3740, 3750; ART 1110, 1120; three credits from ART 2710 or 2720; and one art skills course. The student's overall GPA will also be used as part of the review process.

Students with a cumulative GPA of 3.0 or above will be given preference in this process, following the successful completion of the first portion of the review. As studio space is limited, admission to the Studio Emphasis will be offered first to those ranking highest in the review process, until capacity is reached. Others who successfully complete the review process will be offered a place in the Design Sales and Marketing Emphasis.

If a student who has been approved to take upper-division classes stops out of the program, he or she will be readmitted if space is available. Due to space limitations, first preference will be given to students with continuous registration in the program.

Tours

Each year the Interior Design Program may sponsor a tour to a major design center. Students should plan to take advantage of this opportunity while enrolled in the program.

Interior Design Programmatic Learning Objectives

1. The Interior Design Program will allow students to develop the attitudes, traits, and values of professional responsibility, accountability, and effectiveness.
2. Students will learn the fundamentals of art and design, theories of design and human behavior, and discipline-related history.
3. Students will understand and apply the knowledge, skills, processes, and theories of interior design.
4. Students will learn to communicate effectively.
5. Students will design within the context of building systems. Students will use appropriate materials and products.
6. Students will learn to apply the laws, codes, regulations, standards, and practices that protect the health, safety, and welfare of the public.
7. Students will be given a foundation in business and professional practice.

Assessment

The Interior Design Program participates in an ongoing self-assessment of the program and completes regular evaluations of the curriculum to ensure continuing growth and development. Much of this activity is stimulated by a continuing need to meet the requirements set

forth by the program's accreditation. The program also conducts two major portfolio reviews each year. The first review occurs at the end of a student's sophomore year, and the second review is conducted at the conclusion of a student's senior year of classes. These reviews allow the program to determine areas of strength, as well as areas of weakness, in order to provide direction for needed revision, to meet the needs of the various industries in which graduates of the program will be employed. Additionally, information is requested from alumni, in an effort to assess how the curriculum has prepared them to meet necessary employment expectations.

Additional Information

Major requirement sheets, which provide detailed information about requirements for the Interior Design major, can be obtained from the Interior Design Program, or online at:
http://www.usu.edu/ats/majorsheets/

Interior Design Faculty

Professor
Tom C. Peterson, design process and experiential learning

Assistant Professor
Steven R. Mansfield, architecture and computer aided design

Lecturers
Darrin S. Brooks, residential design and interior history
Kevin H. Woolley, commercial design and space planning

Course Descriptions

Interior Design (ID), pages 541-542

International Studies Major and Minor

Contact: Veronica Ward
Location: Main 324E
Phone: (435) 797-1319
FAX: (435) 797-3751
E-mail: vward@hass.usu.edu
WWW: http://websites.usu.edu/politicalscience/

Advising: Political Science Department, Main 320, (435) 797-1306

Degree offered: Bachelor of Arts (BA)

Area Options: World Economy and Development, Peace and Security, Global Environment and Natural Resources, and Peoples and Nations

Admission Requirements for this Major

1. New freshmen admitted to USU in good standing qualify for admission to this major.

2. Transfer students from other institutions or from other USU majors need a 2.5 total GPA for admission to this major in good standing.

Overview

Problems of security, development, ethnic conflict, and human rights, as well as problems relating to the environment and natural resources, are increasingly confronted at a global rather than a national level. With its theoretical models and real-world application, the study of international studies is an exciting and highly relevant interdisciplinary major. This program cultivates the development of language and intercultural skills, develops understanding of global problems and circumstances, and expands the student's capacity to make informed judgments regarding complex international and global issues.

Requirements

In addition to completing the necessary core courses listed below, students must also choose **one area option** from one of the four available options. Through these options, students gain a level of expertise in their chosen area.

Each student must also complete a senior research project (3 credits). This project must fit within the area option chosen by the student. Under the direction of a faculty member, this project may be completed within the context of an existing course, or may be completed independently under the guidance of the chosen faculty member.

In addition to the senior research project and the choice of one area option, the student must also complete an international experience component. The student may choose the traditional study abroad experience in an accredited program, which must be approved by the international studies advisor. The student may also choose an internship. The internship must have a clear international focus and must be supervised by a faculty member. The relevant faculty member, as well as the international studies advisor, must approve proposals for internships. Students may count a total of 3 credits earned during an internship toward completion of the major.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Graduation Requirements

International Studies Major (39 credits minimum) (3.0 GPA)

A. Core Courses (15 credits)

ANTH 1010 (BSS) Cultural Anthropology (3 cr) **or**
ANTH 2100 (BSS) Peoples of the Contemporary World (3 cr) 3
ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles (3 cr) **or**
ECON 3400 (DSS) International Economics for Business (prereq: ECON 2010) (3 cr) 3
GEOG 1030 (BSS) World Regional Geography 3
HIST 1020 (BHU) Cultural and Economic Exchange in the Pre-Nineteeth Century World (3 cr) **or**
HIST 1030 (BHU) The Modern World (3 cr) 3
POLS 2100 Introduction to International Politics 3

B. Electives (6 credits)

Students may earn these credits by taking any of the courses listed in the four area options: (1) World Economy and Development, (2) Peace and Security, (3) Global Environment and Natural Resources, and (4) Peoples and Nations.

C. Language Requirement

Students must acquire at least a basic knowledge of one foreign language. Students must successfully complete *either* one course at the 3000 level *or* pass a competency examination at the same level.

D. Area Option Requirement (15 credits)

Students must choose *one* option from the four listed below. Students must complete courses from *at least two* different departments within their chosen option, for a total of 15 credits.

E. Senior Research Project (3 credits)

Each student must complete a senior research project which must fit within the area option chosen by the student.

Area Options

World Economy and Development

ANTH 5160 (DSS) Cities and Development 3
ANTH/GEOG/SOC 5650 (DSS) Developing Societies 3
BA 4300 International Finance 3
BA 4590 Global Marketing Strategy (prereq: BA 4540, 4550) 3

BIS 4550 (CI) Principles of International Business Communications....3
ECON 5100 History of Economic Thought (prereq: ECON 2010).....3
ECON/POLS 5120 Economics of Russia and Eastern Europe, 9th Century to 21st Century 3
ECON 5150 (DSS) Comparative Economic Systems (prereq: ECON 2010) 3
ECON 5400 International and Development Economics (prereq: ECON 4020 or 5000; ECON 4010 or 5010) 4
HIST 4610 Themes and Methods in Economic History.....3
MHR 3820 (DSS) International Management.....3
MHR 4890 (CI) Business Strategy in a Global Context (prereq: senior standing; MHR 3110; BA 3400, 3500, 3700).....3
PHIL 3520 (DHA) Business Ethics.....3
PLSC 4300 World Food Crops and Cropping Systems: The Plants That Feed Us.....3
POLS 3100 Global Issues.....3
POLS 4480 International Trade Policy 3
POLS 5210 Comparative Political Change/Development 3
SOC 3600 Sociology of Urban Places 3
SOC 3610 (DSS) Rural Sociology.....3
SOC 4730 Women in International Development.....3

Peace and Security

GEOG/POLS 3430 Political Geography.....3
HIST 3230 Early Modern Europe 3
HIST 3240 Modern Europe from 1789 to the Present.....3
HIST 3310 Balkans Since 1389 3
HIST 3410 The Modern Middle East 3
HIST 3460 Comparative Asian History.....3
HIST 4290 Europe and the French Revolution, 1700-1815 3
HIST 4310 History of Nationalism 3
HIST 4390 British Imperialism from 1688 to the Present 3
HIST 4810 American Military History.....3
PHIL 4610 (DHA) Social and Political Philosophy 3
POLS 3100 Global Issues.....3
POLS 3190 (DSS) Gender, Power, and Politics.....3
POLS 3400 (DSS) United States Foreign Policy 3
POLS 4210 European Union Politics 3
POLS 4220 (CI) Ethnic Conflict and Cooperation 3
POLS 4280 Politics and War.....3
POLS 4410 Global Negotiations 3
POLS 4450 (CI) United States and Latin America 3
POLS 4460 National Security Policy.....3
POLS 4470 Foreign Policy in the Pacific 3
POLS 4890 Special Topics (1-5 cr) **or**
POLS 4990 (CI) Senior Research Seminar (3 cr) 1-5
(**Note:** POLS 4890 and 4990 may *only* be counted toward the major when the topic is appropriate.)

Global Environment and Natural Resources

AWER 4750 Fundamentals of Remote Sensing Science 3
AWER 4930 Geographic Information Systems 4
BIOL 3100 (CI) Bioethics 3
ECON 1550 (BSS) Introduction to Environmental and Natural Resource Economics 3
ECON 5560 Natural Resource and Environmental Economics (prereq: ECON 1550 or 2010).....3
ENVS 2340 (BSS) Natural Resources and Society 3
ENVS 3330 Environment and Society.....3
ENVS 5550 Environment, Resources, and Development Policy 3
ENVS 5640 Conflict Management in Natural Resources 3
FRWS 2200 (BLS) Ecology of Our Changing World.....3
GEOG 1130 (BPS) Physical Geography.....3
GEOG 2130 Population Geography.....3
HIST 3530 African Environmental History 3
HIST 3950 (DHA/CI) Environmental History 3
PHIL 3510 (DHA) Environmental Ethics 3
POLS 3100 Global Issues.....3
POLS 5200 Global Environment 3
SOC 4620 (DSS) Sociology of the Environment and Natural Resources 3

Peoples and Nations

ANTH 3130 (CI) Peoples of Latin America.....3
ANTH 3160 (DSS) Anthropology of Religion.....3
ANTH 3200 (DSS/CI) Perspectives on Race 3
ANTH 4100 The Study of Language 3
ANTH 4130 (DSS) Medical Anthropology: Matter, Culture, Spirit, and Health 3
ANTH 5100 (DSS) Anthropology of Sex and Gender 3
ENGL/HIST 2040 (BHU) British and Commonwealth Cultures.....3
ENGL 4230 Language and Society.....3
ENGL 5320 (CI) Literature and Cultural Difference.....3
GEOG 2030 (BSS) Human Geography 3
GEOG 2130 Population Geography.....3
GEOG 4200 (CI) Regional Geography.....3
HIST 3240 Modern Europe from 1789 to the Present.....3
HIST 3280 East Central Europe Since 1520.....3
HIST 3310 Balkans Since 1389 3
HIST 3410 The Modern Middle East 3
HIST 3460 Comparative Asian History.....3
HIST 3480 History of China.....3
HIST 3510 Africa and the World.....3
HIST 3630 History of Modern Latin America 3
HIST 4310 History of Nationalism 3
JCOM 4020 (DSS) Mass Media and Society 3
PHIL 3700 Philosophy of Religion.....3
PHIL 3710 Philosophies of East Asia 3
POLS 2200 (BSS) Comparative Politics 3
POLS 3190 (DSS) Gender, Power, and Politics.....3
POLS 3210 (DSS) Western European Government and Politics.....3
POLS 3220 (DSS) Russian and East European Government and Politics 3
POLS 3230 Middle Eastern Government and Politics 3
POLS 3250 (DSS) Chinese Government and Politics 3
POLS 3270 (DSS) Latin American Government and Politics.....3
POLS 4220 (CI) Ethnic Conflict and Cooperation 3
POLS 4230 Issues in Middle East Politics 3
POLS 4260 Southeast Asian Government and Politics 3
PSY 4240 (DSS) Multicultural Psychology (prereq: PSY 1010).....3
SOC 2500 Sociology of Gender 3
SOC 3200 (DSS) Population and Society.....3
SOC 4330 Sociology of Religion 3
SOC 4710 Asian Societies 3

International Studies Minor

(18 credits) (3.0 minimum overall GPA)

A. Core Courses (15 credits)

ANTH 1010 (BSS) Cultural Anthropology (3 cr) **or**
ANTH 2100 (BSS) Peoples of the Contemporary World (3 cr) 3
ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles (3 cr) **or**
ECON 3400 (DSS) International Economics for Business (prereq: ECON 2010) (3 cr).....3
GEOG 1030 (BSS) World Regional Geography.....3

HIST 1020 (BHU) Cultural and Economic Exchange in the Pre-Nineteenth Century World (3 cr) **or**
HIST 1030 (BHU) The Modern World (3 cr) 3
POLS 2100 Introduction to International Politics 3

B. Electives (3 credits)
Any course listed in any of the four area options is acceptable.

Additional Information

For detailed information about requirements for the International Studies major and minor, see the major requirement sheet, which can be obtained from the Political Science Department, or online at: **http://www.usu.edu/ats/majorsheets/**

Department of Journalism and Communication

Department Head: Michael S. Sweeney
Location: Animal Science 310
Phone: (435) 797-3292
FAX: (435) 797-3973
E-mail: jcom@cc.usu.edu
WWW: http://www.usu.edu/journalism

Assistant Department Head:
Penny M. Byrne, Animal Science 108A, (435) 797-3289, pennyb@hass.usu.edu

Graduate Program Coordinator:
Michael S. Sweeney, Animal Science 311, (435) 797-3213, msweeney@cc.usu.edu

Degrees offered: Bachelor of Science (BS) and Bachelor of Arts (BA) in Journalism; Master of Science (MS) and Master of Arts (MA) in Communication

Undergraduate emphases: Broadcast/Electronic Media, Print Journalism, Public Relations/Corporate Communications

Graduate specializations: Print, Photo, and Broadcast Journalism

Undergraduate Programs

Objectives

The undergraduate major in the Journalism and Communication Department, leading to the Bachelor of Arts or the Bachelor of Science degree in Journalism, is designed to prepare students for careers in a wide range of communication fields, through instruction in the philosophical groundings, theoretical perspectives, and hands-on applications of communications skills and practice. The curriculum integrates practical mass communications skills training with critical thinking skills, while helping students to understand the processes and effects of communication, as well as the relationships, roles, and interactions of mass communication with other social institutions.

With individual student objectives in mind, the Department of Journalism and Communication offers a flexible program of study having the following goals:

1. Provide students with theoretical and practical understanding of the workings of mass communication principles and practice.

2. Provide students with abilities and practical skills required to work in communications professions.

3. Provide students with a grounding in the philosophical, ethical, and legal frameworks of mass communication, as well as an understanding of the roles and responsibilities of mass communication in a democratic society.

4. Develop in students critical thinking and analytical abilities, facility in social science research methods, and strong written and oral communication skills, within a broad liberal arts context.

The Department of Journalism and Communication maintains professional studios and labs, designed to train students in various communications and journalism skills. These include the multimedia computer newsroom, a digital nonlinear video editing lab, a full TV studio, and a photographic darkroom. Students receive instruction in traditional journalistic basics, such as writing, information-gathering, reporting, and video production; in new technologies of online information gathering; and in critical skills of media literacy.

Requirements

Course Requirements

Journalism majors must complete a minimum of 30 credits and a maximum of 36 credits in Journalism and Communication courses, while pursuing one of the three emphasis course sequences outlined below. Of the 120 semester credits required for graduation from Utah State University, Journalism majors must complete at least 65 credits in other departments within the College of Humanities, Arts and Social Sciences. In addition, majors must complete a minor/cognate area outside of the Journalism and Communication Department, selected with the approval of an advisor.

Therefore, the basic Journalism course of study is as follows: Journalism and Communication courses, 30-36 credits; University Studies courses, 30 credits; courses in the minor/cognate area, 18 credits; electives from outside the Journalism and Communication Department, 36-40 credits; **Total Credits, 120.**

Major Status

Students may apply for major status upon completion of a minimum of 60 semester credits, including the Journalism Premajor Core requirements, while maintaining a 2.5 cumulative GPA. Students may declare themselves as Journalism Premajors at any time after their admission to the University. Majors must maintain a minimum 2.5 GPA, both overall and in the major. Students whose GPA drops below 2.5 will be placed on probation and may be dropped from the major if grades do not improve within one semester. No Journalism and Communication class may be repeated more than once. All courses in the major must be taken for a grade (not *Pass-Fail*). Courses must be taken in sequence.

Students transferring from other institutions may be accepted into the major if they fulfill these requirements. Up to 9 transferred semester credits may count toward the major, if approved by an advisor.

Premajor Core Requirement (9 credits)

The following courses are required for all majors, and must be completed prior to application for major status:
JCOM 1000 (BSS) Introduction to Mass Communication (F, Sp) 3
JCOM 1110 Beginning Newswriting for Mass Media (F, Sp, Su) 3
JCOM 2000 (BSS) Media Smarts: Making Sense of the Information Age (F, Sp) 3

Prior to taking JCOM 1110, students must complete ENGL 1010 Introduction to Writing (or equivalent), an English proficiency test, and a typing test. Majors must complete each of the premajor requirements with a *C+* or better.

Major Requirements (6 credits)

The following courses are required for all majors after acceptance into the department:
JCOM 2110 (CI) Introduction to Online Journalism (F, Sp).....2
(prereq: min of *C+* in JCOM 1000, 1100, and 2000)
JCOM 4000 Senior Seminar in Mass Communication (F, Sp).....1
(prereq: senior standing)
JCOM 4030 Mass Media Law (F, Sp) 3
(should have junior standing or instructor's permission)

Emphasis Areas

Each student must select one of the following emphasis areas:

Broadcast/Electronic Media Emphasis (30-35 credits)

A. Premajor Core Requirements (9 credits)
Journalism majors must complete the Premajor Core Requirements *before* taking courses in section *B* below.

B. Broadcast/Electronic Media Requirements (12 credits)
JCOM 2200 Introduction to Video Media (F, Sp).....3
JCOM 2210 Writing for Electronic Media (F, Sp).....3
Additional major requirements (JCOM 2110, 4000, 4030) 6

C. Newscast *or* Corporate Video/Multimedia (6-8 credits)
Students should complete *one* of the two pairs of courses listed below.
JCOM 4210 (CI) Newscast I (F, Sp) (4 cr) **and**
JCOM 4220 (CI) Newscast II (F, Sp) (4 cr).....8
Or
JCOM 4230 Corporate Video (F, Sp) (3 cr) **and**
JCOM 5210 Website Design and Production (Sp) (3 cr).....6

D. Communication Electives (3-6 credits)
Students should consult with their advisor to choose appropriate electives.

Print Journalisim Emphasis (30-36 credits)

A. Premajor Core Requirements (9 credits)
Journalism majors must complete the Premajor Core Requirements *before* taking courses in section B below.

B. Print Journalism Requirements (15 credits)
JCOM 2120 (CI) Reporting Public Affairs (F, Sp) 3
JCOM 3110 (CI) Beyond the Inverted Pyramid (Sp) 3
JCOM 3120 (CI) Copy Editing and Publication Design (F, Sp) 3
Additional major requirements (JCOM 2110, 4000, 4030) 6

C. **Communication Electives (6-12 credits**)
Students should consult with their advisor to choose appropriate electives.

Public Relations/Corporate Communications Emphasis (30-36 credits)

A. Premajor Core Requirements (9 credits)
Journalism majors must complete the Premajor Core Requirements *before* taking courses in section *B* below.

B. Required Courses (12 credits, may be taken concurrently)
JCOM 2300 Introduction to Public Relastions (F, Sp) 3
JCOM 2310 (CI) Writing for Public Relations (F, Sp, Su) 3
Additional major requirements (JCOM 2110, 4000, 4030) 6

C. Upper-division Required Courses (6 credits; must be *taken in sequence after completion of JCOM 2300, 2310)*
JCOM 3300 Corporate Communications (F, Sp) 3
JCOM 5300 (CI) Public Relations Agency I (F, Sp) 3

D. Electives (3-9 credits; at least 3 credits in skills course; 3 credits upper division)

Other Communications Electives

In addition to the Pre-major, major, and emphasis area courses listed above, students must select additional electives from courses in the Department of Journalism and Communication, to ensure a total of 30-36 credits completed in the Journalism and Communication Department.

Journalism Minor

Students may earn a minor in Journalism by completing a minimum of 18 JCOM credits. The minimum GPA requirements for Journalism minors are the same as those required for Journalism majors.

These credits must include:
JCOM 1000 (BSS) Introduction to Mass Communication (F, Sp) 3
JCOM 1110 Beginning Newswriting for the Mass Media (F, Sp, Su) (3 cr) **or**
JCOM 2000 (BSS) Media Smarts: Making Sense of the Information Age (F, Sp) (3 cr) 3

For the remaining 12 JCOM credits, students must select one of the following options:

(a)
JCOM 2120 (CI) Reporting Public Affairs (F, Sp) 3
JCOM faculty advisor-approved upper-division JCOM credits.....9

(b)
JCOM 2200 Introduction to Video Media (F, Sp).....3
JCOM 2210 Writing for Electronic Media (F, Sp).....3
JCOM faculty advisor-approved upper-division JCOM credits.....6

(c)
JCOM 2300 Introduction to Public Relations (F, Sp).....3
JCOM 2310 (CI) Writing for Public Relations (F, Sp, Su)).....3
JCOM faculty advisor-approved upper-division JCOM credits.....6

Financial Support

In addition to general scholarships and other financial support opportunities available through the University and the College of Humanities, Arts and Social Sciences, the Department of Journalism and Communication awards various scholarships to juniors, seniors, and graduate students. For a listing of scholarships, deadlines, and application requirements, contact the Department of Journalism and Communication. In addition, many professional paid and unpaid internships are available through the department.

Careers in Journalism and Communication

Journalism majors often begin their careers in various media professions, such as newspapers, radio and TV broadcasting, and public relations, many serving as interns while still attending school. Upon graduation, they land jobs in a variety of capacities for both journalism businesses and other industries requiring workers with excellent communication and problem-solving skills. In recent years, USU journalism students have routinely swept state, regional, and national competitions in print and video journalism, multimedia and new technologies, and, increasingly, public relations.

This success translates into an excellent reputation for USU students among businesses hiring USU students as interns and hiring USU graduates for professional positions. Jobs held by recent graduates include newspaper and magazine reporter, photographer, graphic artist, and editor; radio and television reporter, anchor, and producer;

public relations director and account executive; multimedia software designer for HTML, web pages, CD-ROMs, etc.; and public information officer for politicians, legislative and lobbying groups, sports teams, and colleges, as well as for environmental organizations and other groups in the business and public sectors. Training and expertise in communication, including writing and reporting, visual literacy, publication layout and design, computer graphics, and online applications, prove to be valuable add-on skills for graduates entering a variety of occupations or going on to graduate school and law school.

In addition to these kinds of opportunities enjoyed by undergraduates, master's degree graduates often return to communication careers in new capacities, or teach at the community college level in journalism and communication departments.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information

For further information about publications, curriculum, scholarships, faculty, and other program offerings, including USU's TV studio facilities; weekly newscasts and TV programs; the award-winning student news website, the Hard News Café; and the Media and Society Lecture Series; check out the Journalism and Communication Department's website: **http://www.usu.edu/journalism**

For detailed information about requirements for the Journalism major and minor, see the major requirement sheet, which can be obtained from the department, or accessed online at:
http://www.usu.edu/ats/majorsheets/

Graduate Programs

The Master of Science (MS) and the Master of Arts (MA) degrees in Communication combine professional practice and theoretical training, and are designed to fit individual student needs. Students may specialize in print, photo, or broadcast journalism. Application to the graduate program is made through the USU School of Graduate Studies.

Objectives

The master's program in Communication at Utah State University offers a two-track approach to graduate study, designed for the maximum individual flexibility in pursuit of the student's goals.

The Plan A, also known as the "Thesis Option" or "Media Research," is a course of study designed for students considering or planning to go on to a doctoral program. The Plan A option requires more coursework in theory and methodology, as well as in research tools, in order to provide grounding for advanced study at the PhD level, whether in communication or another discipline. This option also requires completion of a master's thesis, consisting of original research.

The Plan B, also known as the "Professional Option" or "Media Practice," is designed for students seeking the master's degree as a terminal degree, and planning to go from USU into the mass media professions, or into a teaching position at the junior college level. Typically, Plan B students are mid-career media professionals seeking retooling, refreshers, or credentials for community college teaching. The Plan B option requires a professional project, approved by a major professor, in place of the research thesis.

In either case, graduate students in Communication work closely with advisors throughout their programs to design coursework and a research or professional activity agenda, along with appropriate study in a cognate area outside of Communication, that will permit them to achieve their individual goals, within the core framework of Communication coursework, whether they include professional training or additional doctoral work.

Admission Requirements

For admission to the graduate program in Communication, all students must complete the department's English Language Proficiency Examination, and must complete or demonstrate competency in the following Communication foundation courses:
JCOM 1110 Beginning Newswriting for the Mass Media (F, Sp, Su) 3
JCOM 3110 (CI) Beyond the Inverted Pyramid (Sp) 3
JCOM 4020 (DSS) Mass Media and Society (Sp) 3
JCOM 4030 (DSS) Mass Media Law (F, Sp).....3

Competency may be demonstrated through previous coursework or experience, and one or more of these requirements may be waived with permission of the graduate program coordinator. These credits do not count toward the graduate degree. In addition, other undergraduate courses may be required.

Degree Requirements

Students may elect either the Plan A (thesis) or the Plan B (professional) option to fulfill the degree requirements of 30 semester credits as outlined below. Plan A is intended for students planning to continue graduate study, to teach, or to enter professions requiring research skills. Plan B is intended for students seeking a terminal professional degree. Selection of either the Plan A or Plan B option must be made in consultation with the student's advisor and filed with the graduate coordinator by the end of the first semester of study.

All students must complete core requirements in either plan. Students must, in consultation with their advisor, select an appropriate research tools class in research methods; the course need not be taught by the Journalism and Communication Department. To remain in good standing, all students must fulfill Graduate School requirements.

Plan A: Media Research

Core Requirements (21 credits). All students must complete the following courses: JCOM 6000 (3 cr.), 6020 (3 cr.), 6040 (3 cr.), 6400 (3 cr.), and 6970 (6 cr.). In addition, students must select an appropriate 3-credit Research Tools course (from any department), providing methodological training most appropriate for the student, in consultation with the advisor.

Journalism and Communication Electives (6 credits)

Cognate Area (6 credits). With advisor permission, students may include additional Journalism and Communication electives.

Plan B: Media Practice

Core Requirements (18 credits). All students must complete the following courses: JCOM 6000 (3 cr.), 6020 (3 cr.), 6040 (3 cr.), 6400 (3 cr.), and 6500 (3 cr.). In addition, students must select an appropriate 3-credit Research and Practice course, in consultation with their advisor. A Research Tools course (from any department), providing methodological training most appropriate for the student, must also be selected in consultation with the advisor.

Journalism and Communication Electives (6 credits)

Cognate Area (9 credits). With advisor permission, students may include additional Journalism and Communication electives.

Additional Information

For more information about graduate studies in the Department of Journalism and Communication, contact the School of Graduate Studies or the Department of Journalism and Communication. Also, check out the departmental website at:
http://www.usu.edu/journalism

Journalism and Communication Faculty

Professor
Edward C. Pease, journalism, media criticism

Professor Emeritus
Nelson B. Wadsworth, print journalism

Associate Professors
Penny M. Byrne, broadcasting, media law
Brenda Cooper, media criticism, gender and mass communication
Michael S. Sweeney, print journalism, media history

Associate Professors Emeritus
Scott A. Chisholm, media management, literary journalism
James O. Derry, international mass communication development

Assistant Professors
Cathy Ferrand Bullock, mass communication theory and research methods
Emmanuel E. "Emeka" Nneji, public relations
Les A. Roka, public relations
Nancy M. Williams, print journalism, Internet

Video Lab Supervisor
S. Dean Byrne, broadcast and electronic media

Temporary Lecturer
R. Troy Oldham, public relations, corporate communications

Adjunct Instructors
Tim Vitale, public relations
Jay C. Wamsley, print journalism

Course Descriptions

Journalism and Communication (JCOM), pages 543-545

Department of Landscape Architecture and Environmental Planning

Department Head: Elizabeth A. Brabec
Location: Fine Arts Visual 230
Phone: (435) 797-0500
FAX: (435) 797-0503
E-mail: ainscoughm@hass.usu.edu
(faculty e-mail addresses available on departmental website)
WWW: http://www.usu.edu/laep/

Undergraduate Program Director:
Michael L. Timmons, Fine Arts Visual 260, (435) 797-1510, michael.timmons@usu.edu

Graduate Program Director:
John C. Ellsworth, Fine Arts Visual 238, (435) 797-0504, john.ellsworth@usu.edu

Degrees offered: Bachelor of Landscape Architecture (BLA) and Master of Landscape Architecture (MLA); Master of Science (MS) in Bioregional Planning. BLA and first professional MLA programs are fully accredited by the American Society of Landscape Architects.

Graduate specializations: *MLA*—Land Rehabilitation/Revegetation, Small Town Rehabilitation, Urban Wildlife, Visual Resource Management, Water Resources

Department Objectives

The objectives of the department are to (1) provide an educational and technical program responsive to current societal needs related to environmental planning, landscape architecture, and urban design; (2) give students the opportunity to participate in collaborative learning experiences with other disciplines on campus; (3) prepare students for professional careers in the private or public sector; and (4) conduct original research to advance the body of knowledge in landscape architecture, environmental planning, and design.

Undergraduate Programs

Admission and Graduation Requirements

The Bachelor of Landscape Architecture (BLA) degree program is an intensive four-year studio-based course of study, fully accredited by the American Society of Landscape Architects. Accreditation standards require the department to maintain a reasonable faculty/student ratio. Space in the program is restricted by facility availability and faculty size. Admission to the upper division is competitive, and is limited to students who are determined by the faculty to have the best potential for academic success. Matriculation into the upper division will normally be limited to 25 students, although additional students may be matriculated in special circumstances at the discretion of the LAEP faculty.

Any student admitted to USU is eligible for enrollment in lower-division LAEP courses. Declared LAEP majors will be advised of their relative class standing at the mid-point of their sophomore year, to assist in their personal academic career planning. At the end of the sophomore year, a selection process will determine which students will matriculate into the upper division of the program.

Students applying for matriculation must have a minimum USU GPA of 2.5. Eligibility for matriculation requires the completion of the following prerequisite courses:

LAEP 1030 (BCA) Introduction to Landscape Architecture (F, Sp, Su) 3
LAEP 1200 Basic Graphics in Landscape Architecture (F) 4
LAEP 1350 Theory of Design (Sp) 4
LAEP 2300 History of Landscape Architecture (F) 3
LAEP 2600 (QI) Landscape Construction I (F) 4
LAEP 2650 Architecture and the Built Environment (Sp) 4
LAEP 2700 (CI) Site Analysis and Design (F) 5
LAEP 2720 Site Planning and Design (Sp) 5
ETE 1200 Computer-Aided Drafting and Design (F, Sp, Su) (3 cr) **or**
ETE 2270 Computer Engineering Drafting (F, Sp, Su) (2 cr) ..... 2 or 3
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3

Selection of students to be matriculated to the upper division is based on a letter of intent; a portfolio demonstrating creative potential, problem solving skills, and graphic fluency; and cumulative GPA earned in the eight LAEP prefix courses listed above. Portfolios and letters of intent are to be submitted by the last Monday in March. Detailed information regarding the letter of intent and portfolio requirements may be obtained from the LAEP Department website: **http://www.usu.edu/laep/**. The final selection of students to matriculate to the upper division is a decision of the LAEP faculty. The review of students for matriculation will take place during the week following spring semester final exams, and students will be notified as soon as possible thereafter.

Students who have had LAEP courses waived or covered by articulation from another institution will have their GPA calculated only on the basis of LAEP grades actually earned at USU.

Transfer students from other programs of landscape architecture who have completed the equivalent of the lower-division USU LAEP coursework may apply for admission to the upper division of the program through submission of a portfolio, letter of intent, transcript of grades, and description of landscape architecture courses taken. Students who have previously been enrolled and matriculated into the upper division at USU, and must interrupt their education for up to three academic years, may resume their studies at the same level of the program which they departed upon returning to USU. Students who have stopped-out longer than three years must reapply, following the guidelines specified for transfer students. The decision on applications from transfer students and for readmission rests with the LAEP faculty and will be considered on a case-by-case basis.

Computer Requirement

Computer competency is essential in the contemporary professional environment. Appropriate computer skills are required for most entry-level opportunities in landscape architecture and environmental planning.

Course content increasingly relies on computer skills and personal access to computers with the appropriate software.

All students entering the upper division of the BLA program must purchase, lease, or otherwise obtain continuing and uninterrupted access to a personal computer which meets the configuration requirements specified by the LAEP Department. Contact the department for current specifications.

Recommended High School Courses

High school students planning to major in landscape architecture may enhance their preparation with courses in art, natural sciences, social sciences, and math through college algebra.

BLA Degree

The Bachelor of Landscape Architecture (BLA) degree is a four-year program consisting of courses relating to theory, design, history, and the various technical areas of the profession. The degree provides a substantial basis for a professional career, as well as an excellent foundation for advanced graduate studies. In addition to the courses required for upper-division status, the following LAEP courses are required for graduation:

LAEP 3100 Recreation/Open Space (F) 5
LAEP 3120 Residential Planning and Design (Sp) 5
LAEP 3300 Advanced Computer Applications in Landscape Architecture (F) 4
LAEP 3500 Planting Design (F) 2-4
LAEP 3610 Landscape Construction II (Sp) 4
LAEP 3700 City and Regional Planning (Sp) 3
LAEP 4100 Urban Theory, Systems, and Design (F) 5
LAEP 4110 Construction Document Preparation (F) 4
LAEP 4120 Emerging Areas in Landscape Architecture (Sp) 5
LAEP 4920 (CI) Professional Practice (Sp) 2

Non-LAEP Courses Required for BLA majors:

The following courses taught outside the LAEP Department are required for all BLA majors. Note that several of these courses will also assist in fulfillment of University Studies Requirements.

ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F, Sp) 3
GEOL 3100 (DSC) Natural Disasters (Sp) 3
AWER 1200 (BLS) Biodiversity: Its Conservation and Future (F) (3 cr) **or**
FRWS 2200 (BLS) Ecology of Our Changing World (F, Sp) (3 cr) 3
MATH 1050 (QL) College Algebra (F, Sp, Su) 4
SOC 3610 (DSS) Rural Sociology (F) (3 cr) **or**
SOC 4620 (DSS) Sociology of the Environment and Natural Resources (Sp) (3 cr) 3
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
ETE 1200 Computer-Aided Drafting and Design (F, Sp, Su) (3 cr) **or**
ETE 2270 Computer Engineering Drafting (F, Sp, Su) (2 cr) ..... 2 or 3

All required courses with an LAEP prefix must be passed with a grade of *C-* or better. Students must also complete the University Studies requirements. For more detailed information, see major requirement sheet available from the department, or online at: **http://www.usu.edu/ats/majorsheets/**

Required Courses—Four-year Sequence

Freshman Year (31-32 credits)

Fall Semester (16 credits)

LAEP 1030 (BCA) Introduction to Landscape Architecture 3
LAEP 1200 Basic Graphics in Landscape Architecture 4
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape 3
Breadth Physical Science (BPS) course 3
Elective course 3

Spring Semester (15-16 credits)

LAEP 1350 Theory of Design 4
GEOL 3100 (DSC) Natural Disasters 3
ETE 1200 Computer-Aided Drafting and Design (3 cr) **or**
ETE 2270 Computer Engineering Drafting (2 cr) ..... 2 or 3
University Studies[1] and Elective Courses 6

Sophomore Year (30 credits)

Fall Semester (15 credits)

LAEP 2300 History of Landscape Architecture 3
LAEP 2600 (QI) Landscape Construction I 4
LAEP 2700 (CI) Site Analysis and Design 5
University Studies[2] and Elective Courses 3

Spring Semester (15 credits)

LAEP 2650 Architecture and the Built Environment 4
LAEP 2720 Site Planning and Design 5
University Studies[3] and Elective Courses 6

Junior Year (31 credits)

Fall Semester (16 credits)

LAEP 3100 Recreation/Open Space 5
LAEP 3300 Advanced Computer Applications in Landscape Architecture 4
LAEP 3500 Planting Design 4
University Studies and Elective Courses 3

Spring Semester (15 credits)

LAEP 3120 Residential Planning and Design 5
LAEP 3610 Landscape Construction II 4
LAEP 3700 City and Regional Planning 3
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture 3

Senior Year (31 credits)

Fall Semester (15 credits)

LAEP 4100 Urban Theory, Systems, and Design 5
LAEP 4110 Construction Document Preparation 4
SOC 3610 (DSS) Rural Sociology (3 cr) **or**
SOC 4620 (DSS) Sociology of the Environment and Natural Resources (3 cr) 3
Breadth American Institutions (BAI) course 3

Spring Semester (16 credits)

LAEP 4120 Emerging Areas in Landscape Architecture 5
LAEP 4920 (CI) Professional Practice 2
University Studies and Elective Courses 9

[1]Recommended: MATH 1050 (QL), College Algebra; ENGL 1010 (CL), Introduction to Writing: Academic Prose.
[2]Recommended: ENGL 2010 (CL), Intermediate Writing: Research Writing in a Persuasive Mode.
[3]Recommended: AWER 1200 (BLS), Biodiversity: Its Conservation and Future; or FRWS 2200 (BLS), Ecology of Our Changing World.

Specialized Service Courses

The following courses are available for majors in other fields who may wish to gain an exposure to the different aspects of landscape architecture and environmental planning. A minor is not given in LAEP; however, these service courses are available, without prerequisites, for those requesting them.

LAEP 1030 (BCA) Introduction to Landscape Architecture (F, Sp, Su) 3
LAEP 1200 Basic Graphics in Landscape Architecture (F) 3
LAEP 2300 History of Landscape Architecture (F) 3
LAEP 3700 City and Regional Planning (Sp) 3

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also

complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school.

The LAEP Department offers a departmental honors program for BLA students. To qualify, students must be matriculated in the upper division of the LAEP program and must have a cumulative GPA of at least 3.50. The 15-credit honors course requirement for LAEP honors recognition is met by completion of the following: (1) a 3-credit honors thesis during the senior year, (2) two readings seminars (LAEP 6910 and 6930), and (3) an additional 10 credits of upper-division honors coursework.

Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Additional Information

For detailed information about requirements for the Bachelor of Landscape Architecture, see the major requirement sheet, which can be obtained from the department, or accessed online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Admission Requirements

The application deadline for consideration in the first round of reviews is March 15. Applications received later than March 15 will be considered as space availability allows. February 1 is the application deadline for consideration for some scholarships, fellowships, and other financial aid. For general admissions requirements, see the appropriate sections of this catalog.

Computer Requirement

Computer competency is essential in the contemporary professional environment. Appropriate computer skills are required for most entry-level opportunities in landscape architecture and environmental planning.

Course content increasingly relies on computer skills and personal access to computers with the appropriate software.

All students entering the second year of the First Professional Degree MLA program and all students entering the first year of the Advanced Professional Degree MLA program must purchase, lease, or otherwise obtain continuing and uninterrupted access to a personal computer which meets the configuration requirements specified by the LAEP Department. Contact the department for current specifications.

Master of Landscape Architecture

The program for the Master of Landscape Architecture (MLA) emphasizes both traditional site scale planning and design, as well as broader areas of the profession, such as large-scale regional landscape analysis and planning, and computer-aided design and planning techniques. The MLA first professional degree is fully accredited by the Landscape Architectural Accreditation Board of the American Society of Landscape Architects.

The Master of Landscape Architecture program is designed to prepare the student for the landscape architect's challenging role of providing a holistic approach to environmental planning and design. In order for landscape architects to contribute effectively to an interdisciplinary effort, they must be competent in the fundamentals of landscape architecture and also have an understanding of the subject matter of other professions. Landscape architects must master the communication skills necessary to achieve meaningful collaboration. In support of this philosophy, the following are the major objectives of the MLA program.

1. To provide a well-structured curriculum in fundamental professional knowledge and skills.

2. To research, analyze, and resolve land use and design issues related specifically to the Intermountain West. The scope of the program examines national, regional, and local issues; and their impact on the visual, physical, and cultural setting of the Intermountain West.

3. To integrate field experience and research into major graduate studio courses structured around real-world projects.

4. To provide opportunities for each student for exploration and development of an area of specialization as noted elsewhere.

5. To draw upon the regional, national, and international relationships of Utah State University to facilitate a program of academic and professional excellence which will allow the student to achieve eminence in practice, research, or education.

Areas of Faculty Expertise

The Master of Landscape Architecture Program provides opportunities for each student to study and conduct research in areas which take advantage of the strengths of Utah State University and the landscape context of the Intermountain West centered around the expertise of the LAEP Department faculty, including: *Land Rehabilitation/Revegetation*—Ellsworth and Johnson; *Regional Landscape Planning*—Shapiro, Kumble, Brabec, and Nicholson; *Visual Resources Management*—Ellsworth; *Urban Wildlife/Refuge Planning*—Johnson; *Riparian Systems*—Johnson and Bell; *Community Planning*—Nicholson, Lavoie, and Bell; *Public Lands/Recreation*—Timmons; *Urban Design/Theory*—Lavoie; *Historic Landscapes and Preservation*—Timmons and Brabec; *Land Use Law*—Brabec; *Open Space Conservation and Greenways Development*—Brabec, Kumble, and Shapiro.

These areas of faculty expertise include an assessment of the relevant environmental, design, social, economic, and public policy issues utilizing a wide range of computer-compatible techniques and models.

Specializations

Graduate specializations (MLA) may be designated on a student's transcript with the approval of the supervisory committee after completion of a Plan A original research thesis. There are currently five specializations: Land Rehabilitation/Revegetation, Small Town Rehabilitation, Urban Wildlife, Visual Resource Management, and Water Resources.

Course of Study

The graduate program director advises all incoming students until they have selected a thesis topic. A major professor whose interests are closely aligned to those of the student (see *areas of faculty expertise* above) supervises thesis work. A minimum of 30 graduate-level credits, including thesis work, is required. Students supplement requirements

with courses negotiated with the major professor and supervisory committee. An outside area of emphasis or graduate specialization (see above) may be pursued by concentrating elective coursework in another department.

The department offers two MLA programs. One is for students who have previously earned baccalaureate degrees in landscape architecture from accredited programs and the other is for students with degrees from other fields.

MLA—Advanced Professional Degree

The MLA—Advanced Professional Degree is a two-year program of study. Applicants must hold baccalaureate degrees in landscape architecture from accredited programs. The advanced degree allows outstanding students to expand their knowledge in areas of special interest under the supervision of a major professor and supervisory committee.

For information about currently required and recommended coursework, as well as other requirements for this degree, visit the departmental website: **http://www.usu.edu/laep/**

MLA—First Professional Degree

A three-year program leading to the MLA degree is available for candidates with previous baccalaureate degrees in fields other than landscape architecture. The curriculum includes a substantial lecture and studio sequence designed to establish fundamental professional skills.

For information about currently required and recommended coursework, as well as other requirements for this degree, visit the departmental website: **http://www.usu.edu/laep/**

Master of Science in Bioregional Planning (joint degree program with Environment and Society)

Good planning and management of natural resources and systems supersedes individual disciplines, requiring an interdisciplinary approach for the successful resolution of environmental issues. The intent of this program's curriculum is to integrate the biophysical disciplines more closely while also addressing the social and political sciences. This degree program is offered jointly by the Department of Landscape Architecture and Environmental Planning in the College of Humanities, Arts and Social Sciences, and by the Department of Environment and Society in the College of Natural Resources.

This program consists of a two-year period of study with a required thesis or paper/project. To maintain a program focus, the student selects from three clusters of coursework (research methods/case studies, biophysical, and social/economic policy). A minimum of 36 graduate-level credits, including 3-6 credits of thesis or paper/project is required. A capstone course is required for all LAEP students. The program contains a total of nine elective credits from which the candidate and his or her committee can formulate an area of emphasis.

Course of Study

This two-year MS program is comprised of an interdisciplinary core of courses and faculty for addressing complex issues in the areas of bioregional planning and management. Emphasis is placed on four problematic content areas: biophysical, social/demographic, economic, and public policy. The spatial focus is on the planning for large landscape areas with dispersed populations with a primary economic base in agriculture, energy development, tourism/recreation, retirement communities, and natural resources.

The program requires a minimum of 36 graduate-level credits, including 3-6 credits of work on a thesis or paper/project. Nine of the required credits may be in an area of emphasis. These nine credits are to be negotiated with the candidate's major professor and supervisory committee. Requirements for the MS in Bioregional Planning are as follows:

Required

Environment Systems Research Institute (ESRI) certification course or ENVS 6900 (Geographic Information Systems), LAEP 6740, and ENVS 6900 (Shipley Seminar/ NEPA/EIS).

Research Methods/Case Studies (3-4 credits)

One of the following courses is required: FRWS 6500, SOC 6100, 6150.

Biophysical (3-4 credits)

One of the following courses is required: FRWS 5400, 6710, AWER 6330. For those students without a background in ecology, FRWS 4600 is also required. Credits earned for FRWS 4600 or equivalent *do not apply* to the graduate program.

Social/Economic Policy (3-4 credits)

One of the following courses is required: ENVS 6000, POLS 5180, or SOC 6630.

Capstone Course (5 credits)

LAEP 6100 is required *for all LAEP students*.

Area of Emphasis (9 credits)

Nine credits should be available to the candidate for an area of emphasis.

Thesis or Project (3 or 6 credits)

A thesis or Plan B paper/project option is required and is to be negotiated with the candidate, major professor, and supervisory committee.

Total Credits: 36-39

Environmental Field Service

Practical Education and Community Service

The department sponsors a program of planning and design services in which MS, MLA, and BLA students may participate. The Environmental Field Service program offers students the opportunity to interact with community leaders and citizens and to test concepts and skills acquired in the classroom while working on real projects.

Internships and Cooperative Education

Many students take advantage of the practical learning opportunities available through internships and cooperative education programs. The department, student, and government agency or private firm, make the necessary arrangements. Internships and cooperative education experiences are not required for degree completion. In some cases, these experiences may be used as the basis for waiver of selected courses, subject to approval in advance by the major professor,

graduate program director, and department head. Students completing these experiences are required to make a summary presentation to department faculty and students.

Financial Assistance

The application deadlines for scholarships and financial assistance vary. For current application deadline information, contact the LAEP Department, the USU Financial Aid Office, and the School of Graduate Studies. Acceptance to pursue graduate study does not guarantee the student financial assistance.

Career Opportunities

The Department of Landscape Architecture and Environmental Planning provides education for careers in landscape architectural site planning, design, environmental planning, and management, with special consideration for conditions in the Intermountain West. Graduates are employed by local, state, and federal agencies, as well as by private sector professional firms. LAEP graduates also find employment in academia at both the undergraduate and graduate levels.

Landscape Architecture and Environmental Planning Faculty

Sumner Margetts Swaner Professor
Tamara F. Shapiro, regional landscape planning

Professors
Elizabeth A. Brabec, cultural landscapes, landscape and open space management
John C. Ellsworth, visual resources management, computer applications, and disturbed lands rehabilitation
Craig W. Johnson, planting design, land rehabilitation, wildlife habitat planning and design

Associate Professors
David L. Bell, residential design, landscape construction, and community planning and design
Caroline Lavoie, urban design/theory
John K. Nicholson, urban and regional planning, and computer applications
Michael L. Timmons, site planning and design, recreation planning, and landscape history

Associate Professor Emeritus
Vern J. Budge, landscape construction and recreation planning

Assistant Professor
Peter Kumble, regional landscape planning, professional practice, open space preservation

Course Descriptions

Landscape Architecture and Environmental Planning (LAEP), pages 546-547

Department of Languages, Philosophy, and Speech Communication

Department Head: Charlie Huenemann
Location: Main 204
Phone: (435) 797-1209
FAX: (435) 797-1329
E-mail: langphil@cc.usu.edu
WWW: http://www.usu.edu/langphil

Undergraduate Advisors:

French:
Charlie Huenemann, Main 204A, (435) 797-0254, hueneman@cc.usu.edu

German:
Renate Posthofen, Main 212, (435) 797-1336, posthofr@cc.usu.edu

Philosophy:
Richard Sherlock, Main 202E, (435) 797-1244, ruffie@cc.usu.edu

Spanish:
M. Isela Chiu-Olivares, Main 202G, (435) 797-1213, isela@cc.usu.edu

Spanish Teaching:
John E. Lackstrom, Main 211, (435) 797-1210, fat88@cc.usu.edu

Speech:
Harold J. Kinzer, Barn 202, (435) 797-3610, kinzer@cc.usu.edu

Degrees offered: Bachelor of Arts (BA) in French, German, and Spanish; BA and Bachelor of Science (BS) in Philosophy; BA and BS in Speech; Master of Second Language Teaching (MSLT)

Undergraduate Programs

Mission Statement

The Department of Languages, Philosophy, and Speech Communication offers programs in modern languages and literature, philosophy, and speech communication. While these programs differ widely in their curricula, they are bound together by two considerations: (1) an emphasis on humanistic content and method of inquiry; and (2) a recognition on the part of the departmental faculty that a critical part of becoming an educated person lies in achieving a greater understanding of one's self and of others, an understanding opened up through insight into the spoken and written word.

Courses offered by the department provide majors and minors with opportunities to achieve this understanding by increasing their communicative, logical, interpretive, linguistic and research skills; their ability to function within an increasingly globalized society; and their awareness of ethical, aesthetic, and other values. Courses offered by the department also give teaching majors and minors the opportunity to serve the needs of the education professions.

Through its participation in the University Studies program, the department provides all students with an opportunity to gain knowledge of how people come to understand themselves through their cultural, literary, and philosophical achievements. The department also furthers the education of both traditional and nontraditional students through faculty participation in interdisciplinary programs such as Honors, Liberal Arts and Sciences, Asian Studies, and Women and Gender Studies; and in cooperative education, distance learning, extension, and study-abroad programs.

Admission Requirements

Admission requirements for freshmen desiring entrance to major programs offered by the Department of Languages, Philosophy, and Speech Communication are the same as those for Utah State University (see pages 16-19). Transfer students from other institutions and from other majors within Utah State University must have an overall minimum GPA of 2.5 (2.75 for Spanish) to be admitted to the department's major programs.

All students majoring in programs offered by this department must maintain a minimum GPA of 2.5 in their major (3.0 in Spanish) to be in good standing in the department and to obtain official approval for graduation.

Career Information

For career and graduate school information, students should contact undergraduate advisors in the department.

Scholarship Information

Four scholarships are offered through the Department of Languages, Philosophy, and Speech Communication. The **Brett Blanch Memorial Scholarship** is awarded to an outstanding philosophy major. The **Carl T. Degener Memorial Scholarship** is awarded to an outstanding language major at the junior level. Outstanding upper-division students in French (and under some circumstances Spanish) are eligible for the **Jean Inness Scholarship**. The **Thain Scholarship** is awarded to an outstanding high school senior enrolling in a language or philosophy course at USU. For more details, contact the department office.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information

For detailed information about requirements for majors and minors within the Languages, Philosophy, and Speech Communication Department, see the major requirement sheets, which are available from the department, or which can be accessed online at:
http://www.usu.edu/ats/majorsheets/

Graduate Program

Master of Second Language Teaching (MSLT)

The Master of Second Language Teaching (MSLT) degree program is designed for students desiring additional training at the graduate level in an integrative, interdisciplinary program combining coursework in the field of Foreign Language Education, Bilingual Education, and ESL/EFL Education. Attainment of the degree requires the completion of a minimum of 30 credits of coursework in the MSLT program. The program leading to the MSLT consists of a core curriculum of 18 credits and a professional curriculum of 12 credits. Courses in the core curriculum are designed to respond to the program's emphasis areas in language, literacy, and culture. Courses in the professional curriculum address teaching methodology, curriculum preparation, materials development, and testing. A Master's Project in the form of a substantial, cumulative Master's Portfolio is also required. The Master's Portfolio will include a comprehensive statement of the candidate's philosophy of second language teaching and learning and how this philosophy will be applied in a professional environment. This project will be defended at the end of the degree program. All candidates must take a series of research courses in the professional curriculum designed to aid in preparing the Portfolio Project.

This master's degree program does not lead to licensure by the Utah State Board of Education. Individuals who do not have Utah State Board of Education licensure and wish to obtain that credential must take the three-semester Secondary Teacher Education Program (STEP) in the College of Education and Human Services.

For program information, including admission requirements, degree requirements, courses, and financial assistance, contact the departmental office or see the program's website at:
http://www.usu.edu/langphil/mslt

Languages

Language faculty members in the Department of Languages, Philosophy, and Speech Communication teach courses leading to undergraduate degrees in French, German, and Spanish, as well as to undergraduate minors in Chinese, French, German, Japanese, Portuguese, Russian, and Spanish. Teaching emphases and minors are also offered in French, German, and Spanish. The department also offers a minor program in Linguistics.

French, German, and Spanish Major Programs

The goal of the French, German, and Spanish BA degree programs is to prepare students to be able to take advanced studies in these languages, literatures, and cultures; to be quality teachers of these languages, literatures, and cultures in the public schools; and to provide those who may enter other professions a solid grounding in these languages, literatures, and cultures, in order that they may function as members of the international community. The curricula supporting these goals includes courses in language, literature, civilization, culture, and linguistics. See the course requirements which follow.

Course Requirements

Language Major Requirements

French Major and Minor Requirements

Minimum Departmental Requirements
Total Credits:

French Major	33
French Major, Teaching Emphasis	31 FREN & 31 SCED
French Minor	12
French Minor, Teaching Emphasis	15 FREN & 31 SCED
French Major, Teaching Emphasis without licensure	35
French Minor, Teaching Emphasis without licensure	19

Grade Point Average to Declare a Major or Minor.....2.5 Career GPA
Grade Point Average to Graduate with Major or Minor...2.0 Career GPA and 2.5 GPA within Major/Minor Classes

Notes:
Courses for French Majors and Minors require a minimum of *C-* or better.
Courses for French Majors and Minors *may not* be taken on a *Pass/Fail* Basis (except for FREN 3030[7]).

French Major (33 credits) (2.5 GPA)

A. Required Course (3 credits)
LING 4100[5] The Study of Language (F,Sp).....3

B. Elective Courses (30 credits minimum)
Students must complete at least 30 credits of upper-division coursework selected from the following list.

FREN 3030[7] Advanced French for Everyday Communication (Su).....3
FREN 3060 (CI)[2] French Conversation (F).....3
FREN 3070[7] Advanced French Language Study Abroad I (Su).....4
FREN 3080[7] Advanced French Language Study Abroad II (Su).....4
FREN 3090 (CI)[3] French Intermediate Written Communication (F).....3
FREN 3510 (CI) Business French (F).....3
FREN 3550 French Civilization (F).....3
FREN 3570 France Today (Sp).....3
FREN 3600[6] Textual Analysis (F).....3
FREN 3820[7] Advanced Independent Study: Experiencing Paris (Su)...2
FREN 3880 Individual Readings (F,Sp,Su).....1-4
FREN 3900[1] Topics in French and Francophone Studies (F).....3
FREN 4060 (CI)[2] Advanced French Conversation (Sp).....3
FREN 4090 (CI)[3] Advanced Written Communication (F).....3
FREN 4200[5] Applied French Linguistics and Phonetics (Sp).....3
FREN 4520 Information Technologies in French (F).....3
FREN 4610 (DHA)[1] Period Studies in French Literature (Sp).....3
FREN 4620 (DHA)[1] Genre Studies in French Literature (F).....3
FREN 4880 Individual Readings (F,Sp).....1-4
FREN 4900[1] Seminar in French and Francophone Studies (Sp).....3
FREN 4920[1,4] French Language Tutoring (F,Sp,Su).....1-2
LING 4900 Analysis of Cross-Cultural Difference (Sp).....3

French Major—Teaching Emphasis *with* Secondary School Licensure (62 credits) (2.5 GPA)

Note: The following requirements *only* specify courses offered by the Department of Languages, Philosophy, and Speech Communication. To be licensed to teach in the Utah public secondary school system, students with a teaching emphasis must also complete additional

courses (approximately 31 credits) required by the Department of Secondary Education. For more information, please contact the Department of Secondary Education, Education Building 330, or review the supplementary section, entitled *STEP Level Outline,* following the *Spanish Course Requirements* section (page 326). Information is also provided on the Web at: **http://www.coe.usu.edu/seced/**

I. French and Linguistics Courses (31 credits)

A. Required Courses (25 credits)
LING 4100[5] The Study of Language (F,Sp).....3
FREN 4200[5,9] Applied French Linguistics and Phonetics (Sp).....3
FREN 3060 (CI) French Conversation (F) (3 cr) **or**
FREN 4060 (CI)[2] Advanced French Conversation (Sp) (3 cr).....3
FREN 3090 (CI) French Intermediate Written Communication (F) (3 cr) **or**
FREN 4090 (CI)[3] Advanced Written Communication (F) (3 cr).....3
FREN 3550 French Civilization (F) (3 cr) **or**
FREN 3570 France Today (Sp) (3 cr).....3
FREN 3600[6] Textual Analysis (F).....3
FREN 4610 (DHA)[1] Period Studies in French Literature (Sp).....3
FREN 4620 (DHA)[1] Genre Studies in French Literature (F).....3
FREN 4920[1,4] French Language Tutoring (F,Sp,Su).....1-2

B. Elective Courses (6 credits)
Students must complete 6 additional upper-division credits in coursework either not taken above or from the following list:

FREN 3510 (CI) Business French (F).....3
FREN 3900[1] Topics in French and Francophone Studies (F).....3
FREN 4520 Information Technologies in French (F).....3
FREN 4900[1] Seminar in French and Francophone Studies (Sp).....3
LING 4900 Analysis of Cross-Cultural Difference (Sp).....3
FREN 3030[7] Advanced French for Everyday Communication (Su).....3
FREN 3070[7] Advanced French Language Study Abroad I (Su).....4
FREN 3080[7] Advanced French Language Study Abroad II (Su).....4
FREN 3820[7] Advanced Independent Study: Experiencing Paris (Su)...2
FREN 3880 Individual Readings (F,Sp,Su).....1-4

II. Secondary Teacher Education Program (STEP) Courses (31 credits; 35 credits including courses for teaching minor)
For further information, review the *STEP Level Outline* on page 326, following the *Spanish Course Requirements* section.

French Minor (12 credits) (2.5 GPA)

To receive a French minor, students must complete 12 upper-division credits in French. Students should note that *only one credit of FREN 4920* may count toward the French minor. In addition, courses taken for the French minor programs may not be taken on a *pass/fail* basis, with the exception of FREN 3030.

French Minor—Teaching Emphasis with Secondary School Licensure (46 credits) (2.5 GPA)

Note: The following requirements *only* specify courses offered by the Department of Languages, Philosophy, and Speech Communication. To be licensed to teach in Utah public secondary school system, students with a teaching emphasis must also complete additional courses (approximately 31 credits) required by the Department of Secondary Education. For more information, please contact the Department of Secondary Education, Education Building 330, or review the supplementary section, entitled *STEP Level Outline,* following the *Spanish Course Requirements* section (page 326). Information is also provided on the Web at: **http://www.coe.usu.edu/seced/**

Students should note that *only one credit of FREN 4920* may count toward the French Minor—Teaching Emphasis. In addition, courses taken for the French minor programs may not be taken on a *pass/fail* basis, with the exception of FREN 3030.

I. French and Linguistics Courses (15 credits)

A. Required Courses (12 credits)
FREN 3090 (CI) French Intermediate Written Communication (F) (3 cr) **or**
FREN 4090 (CI)[3] Advanced Written Communication (F) (3 cr).....3
FREN 3550 French Civilization (F) (3 cr) **or**
FREN 3570 France Today (Sp) (3 cr).....3
FREN 3600[6] Textual Analysis (F).....3
FREN 4200[9] Applied French Linguistics and Phonetics (Sp).....3

B. Elective Courses (3 credits)
Students must complete an additional three credits in coursework selected from the following list:

FREN 4610 (DHA)[1] Period Studies in French Literature (Sp).....3
FREN 4620 (DHA)[1] Genre Studies in French Literature (F).....3
LING 4900 Analysis of Cross-Cultural Difference (Sp).....3
FREN 3030[7] Advanced French for Everyday Communication (Su).....3
FREN 3070[7] Advanced French Language Study Abroad I (Su).....4
FREN 3080[7] Advanced French Language Study Abroad II (Su).....4
FREN 3820[7] Advanced Independent Study: Experiencing Paris (Su)...2
FREN 3880 Individual Readings (F,Sp,Su).....1-4
FREN 4900[1] Seminar in French and Francophone Studies (Sp).....3
FREN 4920[1,8] French Language Tutoring (F,Sp,Su).....1

II. Secondary Teacher Education Program (STEP) Courses (31 credits; 35 credits including courses for teaching major)
For further information, review the *STEP Level Outline* on page 326, following the *Spanish Course Requirements* section.

French Major and/or Minor—Teaching Emphasis *without* Secondary School Licensure (major 35 credits, minor 19 credits) (2.5 GPA)

It is possible to have a teaching emphasis within a major or minor in French without receiving Secondary School teaching licensure. However, unless the student is an elementary education major, he or she *would not* be able to teach in Utah public schools (nor at many private ones). Graduating without licensure may allow employment at some community colleges and universities.

In order to complete the French Major—Teaching Emphasis *without* Secondary School Licensure, students must fulfill all of the requirements listed under Section I (French and Linguistics Courses) of the French Major—Teaching Emphasis *with* Secondary School Licensure (31 credits), plus either LING 3300[10] or 4300[10] (1 credit) and LING 4400[10] (3 credits), for a total of 35 credits.

Similarly, to complete a French Minor—Teaching Emphasis *without* Secondary School Licensure, students must fulfill all of the requirements listed under Section I (French and Linguistics Courses) of the French Minor—Teaching Emphasis *with* Secondary School Licensure (15 credits), plus either LING 3300[10] or 4300[10] (1 credit) and LING 4400[10] (3 credits), for a total of 19 credits.

[1]This course requires FREN 3600 or instructor's permission. This course may be repeated for credit with different content.
[2]Students with foreign experience may be advised to enroll in FREN 3060 or 4060, depending upon results of a placement test and/or instructor's determination.

[3]Students with foreign experience may be advised to enroll in FREN 3090 or 4090, depending upon results of a placement test and/or instructor's determination.
[4]Only two credits of FREN 4920 may count toward the French Major or French Major—Teaching Emphasis.
[5]It is recommended that LING 4100 be taken before FREN 4200.
[6]This course may be repeated one time for credit with different content.
[7]Offered only through USU's Summer Study Abroad program in France.
[8]Only one credit of FREN 4920 may count toward the French Minor or French Minor—Teaching Emphasis.
[9]Students should take FREN 4200 near the end of their coursework. Please note that FREN 4200 is offered every other year.
[10]LING 3300 or 4300 and LING 4400 must be taken *during the same semester*, and should be the *last* courses taken for the major or minor.

German Major and Minor Requirements

Minimum Departmental Requirements
Total Credits:

German Major 33
German Major, Teaching Emphasis ..... 31 GERM & 31 SCED
German Minor 12
German Minor, Teaching Emphasis ..... 15 GERM & 31 SCED
German Major, Teaching Emphasis without licensure 35
German Minor, Teaching Emphasis without licensure 19

Grade Point Average to Declare a Major or Minor ..... 2.5 Career GPA
Grade Point Average to Graduate with Major or Minor ... 2.0 Career GPA and 2.5 GPA within Major/Minor Classes

Notes:
Courses for German Majors and Minors require a minimum of *C-* or better.
Courses for German Majors and Minors *may not* be taken on a *Pass/Fail* Basis.

German Major (33 credits) (2.5 GPA)

A. Required Courses (9 credits)
GERM 3000 (DHA) Introduction to German Studies (F) 3
GERM 3040 (CI) Advanced German Grammar and Composition (F) ... 3
LING 4100 The Study of Language (F,Sp) 3

B. Elective Courses (24 credits)
Students must complete at least 24 credits of upper-division coursework from the following list.

GERM 3050 (CI) Advanced German Grammar and Composition (Sp) 3
GERM 3300 (DHA) Contemporary German Speaking Cultures (Sp) ... 3
GERM 3510 (CI) Business German (Sp) 3
GERM 3540 (CI) Techniques in Translating German Texts (F) 3
GERM 3550 (DHA) Cultural History of German Speaking Peoples (F) 3
GERM 3600 (DHA) Survey of German Literature I (F) 3
GERM 3610 (DHA) Survey of German Literature II (Sp) 3
GERM 3800[11] German III Study Abroad (Su) 3
GERM 3880[11] Individual Readings (F,Sp) 1-4
GERM 4200 Applied German Linguistics and Phonetics (Sp) 3
GERM 4610 German Narratives (Sp) 3
GERM 4650 Trends in Modern German Literature (F) 3
GERM 4800[11] German IV Study Abroad (Su) 1-4
GERM 4880[11] Individual Readings (F,Sp) 1-4
GERM 4900[11] Special Topics (Sp) 3
GERM 4910 German for Special Purposes (Sp) 3
GERM 4920[11,12] German Language Tutoring (F,Sp,Su) 1
LING 4900 Analysis of Cross-Cultural Difference (Sp) 3

Note: Credits obtained in lower-division German courses *cannot* be applied toward the German major programs.

German Major—Teaching Emphasis *with* Secondary School Licensure (62 credits) (2.5 GPA)

Note: The following requirements *only* specify courses offered by the Department of Languages, Philosophy, and Speech Communication. To be licensed to teach in the Utah public secondary school system, students with a teaching emphasis must also complete additional courses (approximately 31 credits) required by the Department of Secondary Education. For more information, please contact the Department of Secondary Education, Education Building 330, or review the supplementary section, entitled *STEP Level Outline,* following the *Spanish Course Requirements* section (page 326). Information is also provided on the Web at: **http://www.coe.usu.edu/seced/**

I. German and Linguistics Courses (31 credits)

A. Required Courses (18 credits)
LING 4100[13] The Study of Language (F,Sp) 3
LING 4900 Analysis of Cross-Cultural Difference (Sp) 3
GERM 3000 (DHA) Introduction to German Studies (F) 3
GERM 3040 (CI) Advanced German Grammar and Composition (F) ... 3
GERM 3050 (CI) Advanced German Grammar and Composition (Sp) 3
GERM 4200[14] Applied German Linguistics and Phonetics (Sp) 3

B. Elective Courses (13 credits)
GERM 3300 (DHA) Contemporary German Speaking Cultures (Sp) ... 3
GERM 3510 (CI) Business German (Sp) 3
GERM 3540 (CI) Techniques in Translating German Texts (F) 3
GERM 3550 (DHA) Cultural History of German Speaking Peoples (F) 3
GERM 3600 (DHA) Survey of German Literature I (F) 3
GERM 3610 (DHA) Survey of German Literature II (Sp) 3
GERM 3800[11] German III Study Abroad (Su) 1-4
GERM 3880[11] Individual Readings (F,Sp) 1-4
GERM 4610 German Narratives (Sp) 3
GERM 4650 Trends in Modern German Literature (F) 3
GERM 4800[11] German IV Study Abroad (Su) 1-4
GERM 4880[11] Individual Readings (F,Sp) 1-4
GERM 4900[11] Special Topics (Sp) 3
GERM 4910 German for Special Purposes (Sp) 3
GERM 4920[11,12] German Language Tutoring (F,Sp,Su) 1

II. Secondary Teacher Education Program (STEP) Courses (31 credits; 35 credits including courses for teaching minor)
For further information, review the *STEP Level Outline* on page 326, following the *Spanish Course Requirements* section.

German Minor (12 credits) (2.5 GPA)

To receive a German minor, students must complete 12 upper-division credits in German. Students should note that ***only one credit*** of GERM 4920 may count toward the German minor. In addition, courses taken for the German minor programs ***may not*** be taken on a ***pass/fail*** basis.

German Minor—Teaching Emphasis *with* Licensure (46 credits) (2.5 GPA)

Note: The following requirements *only* specify courses offered by the Department of Languages, Philosophy, and Speech Communication. To be licensed to teach in the Utah public secondary school system, students with a teaching emphasis must also complete additional

courses (approximately 31 credits) required by the Department of Secondary Education. For more information, please contact the Department of Secondary Education, Education Building 330, or review the supplementary section, entitled *STEP Level Outline,* following the *Spanish Course Requirements* section (page 326). Information is also provided on the Web at: **http://www.coe.usu.edu/seced/**

Students should note that *only 1 credit* from GERM 4920 may count toward the German Minor—Teaching Emphasis. In addition, courses taken for the German minor programs *may not* be taken on a *pass/fail* basis.

I. German and Linguistics Courses (15 credits)

A. Required Courses (12 credits)
LING 4900 Analysis of Cross-Cultural Difference (Sp).....3
GERM 3040 (CI) Advanced German Grammar and Composition (F).....3
GERM 3050 (CI) Advanced German Grammar and Composition (Sp).....3
GERM 4200[14] Applied German Linguistics and Phonetics (Sp).....3

B. Elective Courses (3 credits)
GERM 3300 (DHA) Contemporary German Speaking Cultures (Sp) ...3
GERM 3510 (CI) Business German (Sp).....3
GERM 3540 (CI) Techniques in Translating German Texts (F).....3
GERM 3550 (DHA) Cultural History of German Speaking Peoples (F).....3
GERM 3600 (DHA) Survey of German Literature I (F).....3
GERM 3610 (DHA) Survey of German Literature II (Sp).....3
GERM 3800[11] German III Study Abroad (Su).....1-4
GERM 3880[11] Individual Readings (F,Sp).....1-4
GERM 4610 German Narratives (Sp).....3
GERM 4650 Trends in Modern German Literature (F).....3
GERM 4800[11] German IV Study Abroad (Su).....1-4
GERM 4880[11] Individual Readings (F,Sp).....1-4
GERM 4900[11] Special Topics (Sp).....3
GERM 4910 German for Special Purposes (Sp).....3
GERM 4920[11,12] German Language Tutoring (F,Sp,Su).....1

II. Secondary Teacher Education Program (STEP) Courses (31 credits; 35 credits including courses for teaching major)
For further information, review the *STEP Level Outline* on page 326, following the *Spanish Course Requirements* section.

German Teaching Major and/or Minor—Teaching Emphasis *without* Secondary School Licensure (major 35 credits) (minor 19 credits) (2.5 GPA)

It is possible to have a teaching emphasis within a major or minor in German without receiving Secondary School teaching licensure. However, unless the student is an elementary education major, he or she *would not* be able to teach in Utah public schools (nor at many private ones). Graduating without licensure may allow employment at some community colleges and universities.

In order to complete the German Major—Teaching Emphasis *without* Secondary School Licensure, students must fulfill all of the requirements listed under Section I (German and Linguistics Courses) of the German Major—Teaching Emphasis *with* Secondary School Licensure (31 credits), plus either LING 3300[15] or LING 4300[15] (1 credit) and LING 4400[15] (3 credits), for a total of 35 credits.

Similarly, to complete a German Minor—Teaching Emphasis *without* Secondary School Licensure, students must fulfill all of the requirements listed under Section I (German and Linguistics Courses) of the German Minor—Teaching Emphasis *with* Secondary School Licensure (15 credits), plus either LING 3300[15] or 4300[15] (1 credit) and LING 4400[15] (3 credits) for a total of 19 credits.

[11]This course may be repeated for credit.
[12]Only 2 credits of GERM 4920 may count toward the German major.
[13]LING 4100 should be taken at the beginning of the student's coursework.
[14]GERM 4200 should be taken near the end of the student's coursework. However, GERM 4200 is not offered every year. Therefore, students should check to see when the course will be offered.
[15]LING 3300 or 4300 and LING 4400 must be taken *during the same semester*, and should be the last courses taken for the major or minor.

Spanish Major and Minor Requirements

Minimum Departmental Requirements
Total Credits:
Spanish Major 34
Spanish Major, Teaching Emphasis .....34 SPAN & 31 SCED
Spanish Minor 16
Spanish Minor, Teaching Emphasis .....16 SPAN & 31 SCED
Spanish Major, Teaching Emphasis without licensure.....38
Spanish Minor, Teaching Emphasis without licensure.....20
Grade Point Average to Declare a Major or Minor.....2.75 Career GPA
Grade Point Average to Graduate with Major or Minor.....2.75 Career GPA and 3.00 GPA within Major/Minor Classes

Notes:
Courses for Spanish Majors and Minors require a minimum of *C-* or better.
Courses for Spanish Majors and Minors *may not* be taken on a *Pass/Fail* Basis (except for LING 3300[23]or 4300[23]). At least half (50 percent) of credits for degrees must be completed through USU or sponsored[16] programs.

Spanish Major (34 credits) (3.00 GPA)

A. Required Courses (22 credits)
LING 4100 The Study of Language (F,Sp).....3

Select at least *one* of the following two courses:
SPAN 3040 Advanced Spanish Grammar (F,Sp).....3
SPAN 3800[17] Spanish III Study Abroad (Su).....1-4

Select at least *one* of the following three courses:
SPAN 3550 (DHA) Spanish Culture and Civilization (F).....3
SPAN 3570 (DHA) Latin American Culture and Civilization (Sp).....3
SPAN 4800[17] Hispanic Culture and Civilization—Study Abroad (F,Sp,Su).....1-4

Select at least *three* of the following six courses:
Select at least *one or two* courses from this group:
SPAN 3600 (DHA) Survey of Spanish Literature I (F,Sp).....3
SPAN 3610 (DHA) Survey of Spanish Literature II (F,Sp).....3
SPAN 3650[17] Spanish Literature—Study Abroad (F,Sp,Su).....1-4

Select at least *one or two* courses from this group:
SPAN 3620 (DHA) Survey of Latin American Literature I (F,Sp).....3
SPAN 3630 (DHA) Survey of Latin American Literature II (F,Sp).....3
SPAN 3660[17] Latin American Literature—Study Abroad (F,Sp,Su) 1-4

Select at least *one* of the following two courses:
SPAN 4900[17] Topics of Spanish Literature (F,Sp).....3
SPAN 4910[17] Topics of Latin American Literature (F,Sp).....3

SPAN 4990[18,24] Spanish Degree Assessment (*P/F* only) 1

B. Elective Courses (12 credits)
Students must complete 12 additional credits in courses either *not taken above* or *selected from the following list*:

SPAN 3010[17,18,19,24] Hispanic Outreach Practicum (*P/F* only).....1-4
SPAN 3060 (CI) Advanced Spanish Conversation and Composition (F).....3
SPAN 3510 Business Spanish (F).....3
SPAN 3520[17,18,19,24] Business Spanish Practicum (*P/F* only).....1-4
SPAN 4200[20] Applied Spanish Linguistics and Phonetics (Sp).....3
SPAN 4880[17,18,21] Individual Readings (F,Sp).....1-4
SPAN 4920[17,18,19,22] Spanish Language Tutoring (*P/F* only) (F,Sp,Su) ..1
LING 4900 Analysis of Cross-Cultural Difference (Sp).....3

Spanish Major—Teaching Emphasis (65 credits) (3.00 GPA)

Note: The following requirements *only* specify courses offered by the Department of Languages, Philosophy, and Speech Communication. To be licensed to teach in the Utah public secondary school system, students with a teaching emphasis must also complete additional courses (approximately 31 credits) required by the Department of Secondary Education. For more information, please contact the Department of Secondary Education, Education Building 330, or review the supplementary section, entitled *STEP Level Outline,* following the *Spanish Course Requirements* section (page 326). Information is also provided on the Web at: **http://www.coe.usu.edu/seced/**

I. Spanish and Linguistics Courses (34 credits)

A. Required Courses (26 credits)
LING 4100 The Study of Language (F,Sp).....3
SPAN 4200[20] Applied Spanish Linguistics and Phonetics (Sp).....3
SPAN 4920[17,18,19,22] Spanish Language Tutoring (*P/F* only) (F,Sp,Su) ..1

Select at least *one* of the following two courses:
SPAN 3040 Advanced Spanish Grammar (F,Sp).....3
SPAN 3800[17] Spanish III Study Abroad (Su).....1-4

Select at least *one* of the following three courses:
SPAN 3550 (DHA) Spanish Culture and Civilization (F).....3
SPAN 3570 (DHA) Latin American Culture and Civilization (Sp).....3
SPAN 4800[17] Hispanic Culture and Civilization—Study Abroad (F,Sp,Su).....1-4

Select at least *three* of the following six courses:
Select at least *one or two* courses from this group:
SPAN 3600 (DHA) Survey of Spanish Literature I (F,Sp).....3
SPAN 3610 (DHA) Survey of Spanish Literature II (F,Sp).....3
SPAN 3650[17] Spanish Literature—Study Abroad (F,Sp,Su).....1-4

Select at least *one or two* courses from this group:
SPAN 3620 (DHA) Survey of Latin American Literature I (F,Sp).....3
SPAN 3630 (DHA) Survey of Latin American Literature II (F,Sp).....3
SPAN 3660[17] Latin American Literature—Study Abroad (F,Sp,Su) 1-4

Select at least *one* of the following two courses:
SPAN 4900[17] Topics of Spanish Literature (F,Sp).....3
SPAN 4910[17] Topics of Latin American Literature (F,Sp).....3
SPAN 4990[18,24] Spanish Degree Assessment (*P/F* only).....1

B. Elective Courses (8 credits)
Students must complete 8 additional credits in courses either *not taken above* or *selected from the following list*:

SPAN 3010[17,18,19,24] Hispanic Outreach Practicum (*P/F* only).....1-4
SPAN 3060 (CI) Advanced Spanish Conversation and Composition (F).....3
SPAN 3510 Business Spanish (F).....3
SPAN 3520[17,18,19,24] Business Spanish Practicum (*P/F* only).....1-4
SPAN 4880[17,18,21] Individual Readings (F,Sp).....1-4
LING 4900 Analysis of Cross-Cultural Difference (Sp).....3

Spanish Minor (16 credits) (3.00 GPA)

A. Required Courses (13 credits)
Select at least *one* of the following two courses:
SPAN 3040 Advanced Spanish Grammar (F,Sp).....3
SPAN 3800[17] Spanish III Study Abroad (Su).....1-4

Select at least *three* of the following nine courses:
Select at least *one or two* courses from this group:
SPAN 3550 (DHA) Spanish Culture and Civilization (F).....3
SPAN 3570 (DHA) Latin American Culture and Civilization (Sp).....3
SPAN 4800[17] Hispanic Culture and Civilization—Study Abroad (F,Sp,Su).....1-4

Select at least *one or two* courses from this group:
SPAN 3600 (DHA) Survey of Spanish Literature I (F,Sp).....3
SPAN 3610 (DHA) Survey of Spanish Literature II (F,Sp).....3
SPAN 3620 (DHA) Survey of Latin American Literature I (F,Sp).....3
SPAN 3630 (DHA) Survey of Latin American Literature II (F,Sp).....3
SPAN 3650[17] Spanish Literature—Study Abroad (F,Sp,Su).....1-4
SPAN 3660[17] Latin American Literature—Study Abroad (F,Sp,Su) 1-4

SPAN 4990[18,24] Spanish Degree Assessment (*P/F* only) 1

B. Elective Courses (3 credits)
Students must complete 3 additional credits in courses either *not taken above* or *selected from the following list*:
SPAN 3010[17,18,19,24] Hispanic Outreach Practicum (*P/F* only).....1-4
SPAN 3060 (CI) Advanced Spanish Conversation and Composition (F).....3
SPAN 3510 Business Spanish (F).....3
SPAN 3520[17,18,19,24] Business Spanish Practicum (*P/F* only).....1-4
SPAN 4200[20] Applied Spanish Linguistics and Phonetics (Sp).....3
SPAN 4920[17,18,19,22] Spanish Tutoring Practicum (*P/F* only) (F,Sp,Su) ..1
LING 4100 The Study of Language (F,Sp).....3
LING 4900 Analysis of Cross-Cultural Difference (Sp).....3

Spanish Minor—Teaching Emphasis (47 credits) (3.00 GPA)

Note: The following requirements *only* specify courses offered by the Department of Languages, Philosophy, and Speech Communication. To be licensed to teach in the Utah public secondary school system, students with a teaching emphasis must also complete additional courses (approximately 31 credits) required by the Department of Secondary Education. For more information, please contact the Department of Secondary Education, Education Building 330, or review the supplementary section, entitled *STEP Level Outline,* following the *Spanish Course Requirements* section (page 326). Information is also provided on the Web at: **http://www.coe.usu.edu/seced/**

A. Required Courses (16 credits)
SPAN 4200[20] Applied Spanish Linguistics and Phonetics (Sp).....3

Select at least *one* of the following two courses:
SPAN 3040 Advanced Spanish Grammar (F,Sp).....3
SPAN 3800[17] Spanish III Study Abroad (Su).....1-4

Select at least *three* of the following nine courses:
Select at least *one or two* courses from this group:
SPAN 3550 (DHA) Spanish Culture and Civilization (F) 3
SPAN 3570 (DHA) Latin American Culture and Civilization (Sp) 3
SPAN 4800[17] Hispanic Culture and Civilization—Study Abroad (F,Sp,Su) 1-4

Select at least *one or two* courses from this group:
SPAN 3600 (DHA) Survey of Spanish Literature I (F,Sp)..... 3
SPAN 3610 (DHA) Survey of Spanish Literature II (F,Sp)..... 3
SPAN 3620 (DHA) Survey of Latin American Literature I (F,Sp)..... 3
SPAN 3630 (DHA) Survey of Latin American Literature II (F,Sp)..... 3
SPAN 3650[17] Spanish Literature—Study Abroad (F,Sp,Su)..... 1-4
SPAN 3660[17] Latin American Literature—Study Abroad (F,Sp,Su) 1-4

SPAN 4990[18,24] Spanish Degree Assessment (*P/F* only) 1

B. Secondary Teacher Education Program (STEP) Courses (31 credits; 35 credits including courses for teaching minor)

For further information, review the *STEP Level Outline* shown on this page.

Spanish Major and/or Minor—Teaching Emphasis *without* Secondary School Licensure

It is possible to have a teaching emphasis within a major or minor in Spanish without receiving Secondary School teaching licensure. However, unless the student is an elementary education major, he or she *would not* be able to teach in Utah public schools (nor at many private ones). Graduating without licensure may allow employment at some community college and universities.

In order to complete the Spanish Major—Teaching Emphasis *without* Secondary School Licensure, students must fulfill all of the requirements listed under Section I (Spanish and Linguistics Courses) of the Spanish Major—Teaching Emphasis *with* Secondary School Licensure (34 credits), plus either LING 3300[23] or LING 4300[23] (1 credit) and LING 4400[23] (3 credits), for a total of 38 credits.

Similarly, to complete a Spanish Minor—Teaching Emphasis *without* Secondary School Licensure, students must fulfill all of the requirements listed under Section I (Spanish and Linguistics Courses) of the Spanish Minor—Teaching Emphasis *with* Secondary School Licensure (16 credits), plus either LING 3300[23] or 4300[23] (1 credit) and LING 4400[23] (3 credits) for a total of 20 credits.

[16] A program is considered "sponsored" if students pay the fees to participate directly to USU.
[17] This course may be repeated for additional credit.
[18] Enrollment in this course is by permission of instructor only.
[19] Only 3 credits maximum in practicum courses may count toward a Spanish major or minor.
[20] This course is required for a teaching emphasis in the Spanish major or minor.
[21] This course is only open to those who have first completed 45 credits in the program.
[22] This practicum is required for a teaching emphasis in the Spanish major.
[23] LING 3300 or 4300, and LING 4400 must be taken *during the same semester*, and should be the *last* courses taken for the major or minor.
[24] This course is under development. Contact department for further details.

Secondary Teacher Education Program (STEP) Level Outline (31 credits; 35 credits including courses for teaching major/minor)

Most of the courses listed below count for *both* the teaching major *and* the teaching minor.

A. Level 1 (first semester in program)

SCED 3100 Motivation and Classroom Management (F,Sp) 3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp)..... 3
LING 3300 Clinical Experience I (F,Sp)..... 1
LING 4400 Teaching Modern Languages (F,Sp)..... 3
(LING 3300 and 4400 may be taken in *either* Level 1 *or* Level 2.)
INST 3500 Technology Tools for Secondary Teachers (F, Sp, Su)..... 1

B. Level 2

SPED 4000 Education of Exceptional Individuals (may be taken earlier) (F,Sp,Su) 2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp) 3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp) 3
Clinical Experience II course in teaching minor[25] 1
Special Methods II course in teaching minor[26] 3

(The two courses above may be taken in *either* Level 1 *or* Level 2.)

C. Level 3

Because student teaching requires a major commitment of time and energy, students should take *only* the courses listed below during this semester. Students are also urged to forgo outside employment, if possible, during the student teaching experience.

LING 5500 Student Teaching Seminar (F,Sp) 2
LING 5630 Student Teaching in Secondary Schools (F,Sp)..... 10

[25] The Clinical Experience II course is taught under course number 4300 in various departments. Course title varies among departments.
[26] The Special Methods II course is taught by various departments under various course numbers. Course title varies among departments.

Additional Language Minor Requirements

Minimum Departmental Requirements

Total Credits:
Chinese Minor 12
Japanese Minor 12
Portuguese Minor 12
Russian Minor 12
Linguistics Minor..... 12

Grade Point Average to Declare Minor.....2.5 Career GPA
Grade Point Average to Graduate with Minor.....2.0 Career GPA and 2.5 GPA within Minor Classes

Notes:
Courses for Minors *may not* be taken on a *Pass/Fail* basis.
Courses for Minors require a minimum grade of *C-* or better.
At least half (50 percent) of credits for Minors must be completed through USU, and approved by the department head (*except* for the Portuguese Minor).
Any 4920 course is repeatable; however, *only 1 credit* may be applied toward the minor.

Chinese Minor

Select 12 upper-division credits in Chinese from the following courses:
CHIN 3010 Chinese Third Year I (F)..... 4
CHIN 3020 Chinese Third Year II (Sp) 4
CHIN 3100 Readings in Contemporary Chinese Culture (Sp) 3
CHIN 3510 Chinese Business Language (F) 3
CHIN 3880 Individual Readings in Chinese (F,Sp)..... 1-2
CHIN 4920 Chinese Language Tutoring (F,Sp,Su) 1

Japanese Minor

Select 12 credits from the following courses:
JAPN 3010 Japanese Third Year I (F) 4
JAPN 3020 Japanese Third Year II (Sp) 4
JAPN 3050[27] Japanese Calligraphy (Sp) 3

JAPN 3100 Readings in Contemporary Japanese Culture (F) 3
JAPN 3510 Japanese for the Business Environment (Sp) 3
JAPN 4920 Japanese Language Tutoring (F,Sp,Su) 1

Portuguese Minor

PORT 1020 Portuguese First Year II (F,Sp) 4
PORT 2010 Portuguese Second Year I (F) 4
PORT 2020 Portuguese Second Year II (Sp) 4
PORT 3040 (CI) Advanced Portuguese Grammar and Composition (must be completed at USU) (F,Sp) 3

Russian Minor

Select 12 credits from the following courses:
RUSS 3040 Advanced Russian Grammar and Composition (F) 3
RUSS 3050 Advanced Russian Grammar and Composition (Sp) 3
RUSS 3300 Contemporary Russian Language and Culture (F) 3
RUSS 3510 (CI) Business Russian (F) 3
RUSS 3540 Russian Translation for Science, Business, and Culture (Sp) 3

Linguistics Minor

Select 12 credits from the following courses:
LING 4100 The Study of Language (F,Sp) 3
LING 4400 Teaching Modern Languages (F,Sp) 3
LING 4520 Technology for Language Teaching (Su) 3
LING 4900 Analysis of Cross-Cultural Difference (Sp) 3
ENGL 3020 (DHA) Perspectives in Linguistics (Sp) 3
ENGL 4200 Linguistic Structures (F,Sp,Su) 3
ENGL 4210 History of the English Language (Sp) 3
ENGL 4230 Language and Society (F) 3
ENGL 5210 Topics in Linguistics (F) 3

For additional information on language major and minor programs offered by the Department of Languages, Philosophy, and Speech Communication, contact the department office.

[27] If JAPN 3050 is selected, it must be taken for 1 credit during each of three semesters, in order to earn 3 credits.

Proficiency Tests, Placement in Language Courses, and Obtaining Credit by Special Examination

Students who have completed one or more years of language study may take proficiency tests to determine their proper placement in language courses.

When basic skills in a department-taught language (other than French, German, and Spanish) have been acquired by means other than college courses, students can receive 4-20 lower-division credits with a letter grade by completing a course in that language at a higher level than the credits to be acquired. This course needs to be completed with a grade of *B* or better.

These credits will count as transfer credits. They will not count toward a certain semester or the USU GPA, but will be counted into the cumulative GPA. Please contact the department for further details.

Technology Assisted Language Center

The department operates a technology assisted language center, located in Main 004, for instructional use associated with language classes, and for students desiring additional language practice outside of the classroom. The center includes computer workstations capable of running multimedia applications, as well as audio equipment.

Exchange Programs, Semester Abroad Programs, and Summer Study Abroad Programs

The Department of Languages, Philosophy, and Speech Communication assists students with academic advising for study abroad exchange programs, semester abroad programs, and summer study abroad programs. Students must be in good standing at the University, and it is recommended that the students have some language preparation in order to participate in these programs. For program information, contact the USU Study Abroad Office, Student Center 313, or visit their website at: **http://www.usu.edu/stdyabrd**

National Honor Societies

Lambda Pi Eta (LPH) is the National Communication Honor Society of the National Communication Association for undergraduate junior and senior communication students. Among the goals of LPH are to recognize, foster, and reward outstanding scholastic achievement; and to provide an opportunity for faculty and students to discuss and exchange ideas about their field of interest.

Sigma Delta Pi (SDP) is the National Collegiate Hispanic Honor Society of the American Association of Teachers of Spanish and Portuguese for students studying Spanish. Among the goals of SDP are to honor those who attain excellence in the study of the Spanish language and of the literature and culture of the Spanish-speaking peoples, and to encourage college and university students to acquire a greater interest in and a deeper understanding of Hispanic culture.

Phi Sigma Iota (PSI) is an international language honor society for juniors, seniors, and graduate students who excel in foreign language. PSI promotes international communication and understanding, as well as a sentiment of unity among nations. Phi Sigma Iota helps members further their training through scholarship and graduation honors. The society also promotes trips abroad.

Languages Course Descriptions

Chinese (CHIN), page 479

French (FREN), pages 523-525

German (GERM), pages 529-530

Italian (ITAL), page 542

Japanese (JAPN), pages 542-543

Korean (KOR), page 546

Language (LANG), pages 547-548

Linguistics (LING), pages 548-549

Navajo (NAV), page 566

Portuguese (PORT), pages 585-586

Russian (RUSS), page 592

Spanish (SPAN), page 601

Philosophy

Philosophy at USU reflects the ideals of the liberal arts in encouraging the respect for truth without promoting dogmatism, and in offering the opportunity for students to increase their self-understanding at the same time as they increase their knowledge of the world around them.

Philosophy faculty in the Department of Languages, Philosophy, and Speech Communication teach courses leading to an undergraduate major and a minor in philosophy. The mission of the Philosophy program at Utah State University is to provide a high-quality education leading to an understanding of the major areas of inquiry represented within the discipline of philosophy. Coursework emphasizes the areas of the history of philosophy, logic, ethical theory and applied ethics, and metaphysics and epistemology. The curriculum is designed to meet a wide variety of student interests in pursuing a major in philosophy. It provides a rigorous foundation for students intending to further their education in law school or graduate school in philosophy, and it also provides an exciting and challenging education for those students who enjoy thinking about ideas for their own sake. Coursework is also designed to enrich the education of students majoring in other subjects, by providing them with opportunities to gain an understanding of philosophical perspectives on and philosophical foundations of their chosen fields.

Minimum Departmental Requirements
Total Credits:
Philosophy Major....30
Philosophy Minor....15

Grade Point Average to Declare a Major or Minor.....2.5 Career GPA
Grade Point Average to Graduate with Major or Minor...2.5 Career GPA and 2.5 GPA within Major/Minor Classes

Notes:
Courses for Philosophy Majors and Minors require a minimum grade of *C-* or better.
Courses for Philosophy Majors and Minors *may not* be taken on a *Pass/Fail* basis.
Bachelor of Arts (BA) degree additional requirements include two years of language, or same as University Requirement (see *Bachelor of Arts* section, page 55).
Bachelor of Science (BS) degree additional requirements include PHIL 2200 and 4310 and 12 credits of Math and/or Science.

Course Requirements

Bachelor of Arts in Philosophy (30 credits) (2.5 GPA)

All philosophy majors must complete 30 credits of philosophy. Up to 6 *pass/fail* credits in philosophy courses may be applied toward the philosophy major. PHIL 3100, 3120, 4300, and 4400 may *not* be taken on a *pass/fail* basis for the philosophy major. The requirements are distributed as follows:

A. Required Courses (21 credits)
PHIL 1200 (BHU)[28] Practical Logic (Sp) (3 cr) **or**
PHIL 2200 (QI) Deductive Logic (F,Sp) (3 cr)....3
PHIL 2400 (BHU) Ethics (Sp) (3 cr) **or**
PHIL 2500 (BHU) Social Ethics (F) (3 cr)....3
PHIL 3100 (CI)[29] Ancient Philosophy (F)....3
PHIL 3120 (CI)[29] Early Modern Philosophy (F)....3

Choose one course from the following:
PHIL 3500 Medical Ethics (F)....3
PHIL 3510[28] Environmental Ethics (F,Sp)....3
PHIL 3520[28] Business Ethics (Sp)....3
PHIL 4500[28] Contemporary Ethical Theory (Sp)....3
PHIL 4530 (DSC)[28] Ethics and Biotechnology (Sp)....3
PHIL 4540[28] Human Values and Information Technology (Sp)....3
PHIL 4610[28] Social and Political Philosophy (Sp)....3

Choose two of the following courses, at least one of which must be PHIL 4300 or 4400:
PHIL 4300[29] Epistemology (F)....3
PHIL 4310 Philosophy of Science (Sp)....3
PHIL 4400[29] Metaphysics (F)....3
PHIL 4410 Philosophy of Mind (F)....3
PHIL 4420[28] Philosophy of Language (Sp)....3

B. Elective Courses (9 credits)
Choose three other upper-division philosophy courses from the following list of courses:
PHIL 3110[28] Medieval Philosophy (Sp)....3
PHIL 3150 (CI)[28] Kant and His Successors (Sp)....3
PHIL 3160 (CI)[29] Contemporary Philosophy (F)....3
PHIL 3180 (CI)[29] Contemporary European Philosophy (F)....3
PHIL 3500 Medical Ethics (F)....3
PHIL 3510 Environmental Ethics (F,Sp)....3
PHIL 3520 Business Ethics (Sp)....3
PHIL 3700 Philosophy of Religion (F)....3
PHIL 3710[29] Philosophies of East Asia (F)....3
PHIL 3720[29] Philosophical Theology After Kant (F)....3
PHIL 3730 (CI)[28] Philosophy of the New Testament (Sp)....3
PHIL 3750 Religion and Science in the Modern World (Sp)....3
PHIL 3800 Philosophy in Literature (F)....3
PHIL 3810 Aesthetics (Sp)....3
PHIL 4300[29] Epistemology (F)....3
PHIL 4310 Philosophy of Science (Sp)....3
PHIL 4320[28] History of Scientific Thought (Sp)....3
PHIL 4400[29] Metaphysics (F)....3
PHIL 4410 Philosophy of Mind (F)....3
PHIL 4420[28] Philosophy of Language (Sp)....3
PHIL 4500[28] Contemporary Ethical Theory (Sp)....3
PHIL 4530 (DSC) Ethics and Biotechnology (Sp)....3
PHIL 4540[28] Human Values and Information Technology (Sp)....3
PHIL 4600[29] Philosophy of Law (F)....3
PHIL 4610[28] Social and Political Philosophy (Sp)....3
PHIL 4900[30] Special Topics (F,Sp)....3
PHIL 4910[30] Readings and Research (F,Sp)....1-4
PHIL 4920H Senior Honors Seminar (Sp)....1
PHIL 4930H[30] Senior Honors Thesis (F,Sp,Su)....1-4
PHIL 4990 Philosophy Seminar (Sp)....3
PHIL 5200[28] Symbolic Logic (Sp)....3
PHIL 5510[29] Ethics and the Environment (F)....3
PHIL 5600 Legal Ethics (F)....3

In addition, other University Studies courses, as required by the University, must be completed. To receive a Bachelor of Arts (BA) degree, students must also complete the foreign language requirement.

Bachelor of Science in Philosophy (30 credits) (2.5 GPA)

The requirements for the Bachelor of Science (BS) in Philosophy are the same as those for the Bachelor of Arts (BA), with these additional limitations: (1) no foreign language instruction is necessary, (2) PHIL

2200 and 4310 must be taken, and (3) 12 credits in Mathematics and/or Science courses must be completed.

Philosophy Minor (18 credits) (2.5 GPA)

Six courses in Philosophy, at least four of which must be at the upper-division level, must be completed for a philosophy minor.

[28]This course is taught spring semester, alternate years.
[29]This course is taught fall semester, alternate years.
[30]This course is repeatable for credit.

Philosophy Course Descriptions

Philosophy (PHIL), pages 571-573

Speech Communication

Speech Communication has been taught continuously at USU almost from the University's founding in 1888. Speech Communication faculty in the Department of Languages, Philosophy, and Speech Communication teach courses leading to a Bachelor of Arts or Bachelor of Science degree in Speech, as well as to minors in Organizational Communication and Speech Communication Teaching.

The **speech major** emphasizes organizational communication. Organizational communication is the study of how communication creates organizations and of how organizations shape communication. Coursework in the program addresses the theories and analytical skills enabling students to identify common communication problems arising in organizational contexts and to develop appropriate communication policies and practices. The program also teaches important aspects of intercultural and interpersonal communication theory.

Students majoring in speech are encouraged to earn a BA degree by completing two years of study in a foreign language. This broadens cultural and social awareness and can increase one's understanding of the nature of language in general.

Admission to the speech major will be limited to 25 students each year. Admission decisions will be based on (1) academic record, (2) realistic career or professional study objective, (3) ability of this program to prepare the student for intended career, (4) satisfactory speaking and writing competencies, and (5) motivation and creativity demonstrated by class performance, work experience, volunteer activities, and other means offered by the student during the application process.

Students not admitted may apply the following year. If not admitted on the second application, the student will be permitted to complete a minor, but will not be considered again for the major.

To obtain guidelines for applying to the speech major, contact the Department of Languages, Philosophy, and Speech Communication.

The minor program in **Organizational Communication** is designed for students who seek communication and human relations competencies, an understanding of human communication behavior, and the critical thinking skills required for success in a variety of careers.

The course of study leading to a minor in **Speech Communication Teaching** is designed to develop the communication competencies and the understanding of communication processes and theory necessary for effective high school speech communication instruction. Prior to student teaching, the program features practicum experience in which students learn how to critique and coach speech communication students.

Minimum Departmental Requirements
Total Credits:
Speech Major 30
Organizational Communication Minor 15
Speech Communication Teaching Minor 19

Grade Point Average to Declare a Major or Minor ..... 2.5 Career GPA
Grade Point Average to Graduate with Major or Minor ... 2.5 Career GPA and 2.5 GPA within Major/Minor Classes

Note:
As many as 15 credits for the Major and 6 credits for the Minor completed at other colleges or universities may be used to partially satisfy these requirements, with advisor permission only.

Course Requirements

Speech Major (30 credits) (2.5 GPA in major classes)

As many as 15 credits completed at other colleges or universities may be used to partially satisfy these requirements. For more information, students should contact their advisor. Students must earn an overall GPA of at least 2.5 in all classes applied toward the major.

A. Communication Core (6 credits)
SPCH 1050 (CI) Public Speaking (F,Sp) 3
SPCH 2600 (CI) Interpersonal Communication (F,Sp) 3

B. Senior Year Capstone Course (3 credits)
This course, which is offered spring semester *only*, must be taken during the student's senior year.

SPCH 5100 (CI) Theories of Speech Communication (Sp) 3

C. Organizational Communication Theory (9-12 credits)
SPCH 3250 (CI) Organizational Communication (F) 3
SPCH 3330 (DSS) Intercultural Communication (F) 3
SPCH 3400 (CI) Persuasion (F) 3
SPCH 5000 Studies in Speech Communication (repeatable) (F,Sp) 3
SPCH 5090 Small Group Theory (Sp) 3
SPCH 5250 Environmental Rhetoric (Sp) 3
SPCH 5280 Communication Education Theory (Sp) 3
JCOM 3400 (DSS) Gender and Communication (F,Sp) 3

D. Organizational Communication Application (9-12 credits)
SPCH 2280 Listening (Sp) 2
SPCH 3000 Speech Communication Teaching Practicum (repeatable) (Sp) 1
SPCH 3050 (DSS) Technical and Professional Communication (Sp) 3
SPCH 3600 Communication and Conflict (F) 3
SPCH 4280 Argumentation and Debate (F) 3
SPCH 4800 (CI) Nonverbal Communication (F) 3
LING 4900 Analysis of Cross-Cultural Difference (Sp) 3
BIS 4350 Introduction to Training and Development (Sp) 3
BIS 5660 The Adult Business Learner 3
MHR 3710 Developing Team and Interpersonal Skills (F,Sp) 3
MHR 3820 (DSS) International Management (F,Sp) 3
HASS 2250[31] Introductory Internship/Co-op (F,Sp,Su) 1-5
HASS 4250[31] Advanced Internship/Co-op (F,Sp,Su) 1-15

[31]Internship project and number of credits must be approved by advisor.

Speech Communication Minor Programs

Organizational Communication Minor (15 credits) (2.5 GPA)

A. Required Courses (6 credits)
SPCH 1050 (CI) Public Speaking (F,Sp) (3 cr) **or**
SPCH 2600 (CI) Interpersonal Communication (F,Sp) (3 cr) 3
SPCH 3250 (CI) Organizational Communication (F).....3

B. Elective Courses (9 credits)
In consultation with a program advisor, select 9 credits from courses having the SPCH prefix. Of these 9 credits, at least 3 credits must be completed in a course offered at the 4000 or 5000 level.

Speech Communication Minor—Teaching Emphasis (50 credits) (2.5 GPA)

Note: The following requirements *only* specify courses offered by the Department of Languages, Philosophy, and Speech Communication. To be licensed to teach in the Utah public secondary school system, students with a teaching emphasis must also complete additional courses (approximately 31 credits) required by the Department of Secondary Education. For more information, please contact the Department of Secondary Education, Education Building 330, or review the supplementary section, entitled *STEP Level Outline,* following the *Spanish Course Requirements* section (page 326). Information is also provided on the Web at: **http://www.coe.usu.edu/seced/**

Also Note: SPCH 1050, 2600, and 3000 should be completed prior to enrollment in the 4000- and 5000-level courses. A minimum grade of *C-* is required in each of these classes.

I. Speech Communication Courses (19 credits)
SPCH 1050 (CI) Public Speaking (F,Sp) 3
SPCH 2600 (CI) Interpersonal Communication (F,Sp).....3
SPCH 3000 Speech Communication Teaching Practicum (Sp) 1
SPCH 4280 Argumentation and Debate (F) 3
SPCH 5100 (CI) Theories of Speech Communication (Sp).....3
SPCH 5280 Communication Education Theory (Sp).....3
SPCH 3330 (DSS) Intercultural Communication (F) (3 cr) **or**
SPCH 5090 Small Group Theory (Sp) (3 cr) 3

II. Secondary Teacher Education Program (STEP) Courses (31 credits; 35 credits including courses for teaching minor)
For further information, review the *STEP Level Outline* on page 326, following the *Spanish Course Requirements* section.

Speech Communication Course Descriptions

Speech Communication (SPCH), page 606

Languages, Philosophy, and Speech Communication Faculty

Professors
Charles W. Johnson, philosophy of mind, Wittgenstein, logic, philosophical methods
John E. Lackstrom, linguistics, Spanish applied linguistics, TESL
Mark D. Larsen, Latin American literature, computer applications in languages
Kent E. Robson, ethics, philosophy of language, history of philosophy, philosophy of science, philosophy of religion
Richard Sherlock, medical and environmental ethics, ethical theory, ethical issues in genetics, political philosophy, philosophy of religion

Professors Emeritus
Lynn R. Eliason, 19th century Russian and German novels, Russian culture
Hans K. Mussler, German literature, Lessing, enlightenment, translation, teaching methodology
Alfred N. Smith, Jr., French, foreign language education, cross-cultural studies

Associate Professors
M. Isela Chiu, Spanish, Portuguese, Latin American literature
María-de Jesús Cordero, colonial Spanish-American literature
Charlie Huenemann, history of modern philosophy, Kant, metaphysics
Harold J. Kinzer, organizational communication
Taira Koybaeva, Russian, linguistics, international marketing and business relationships
Renate Posthofen, German language and literature, contemporary culture and film
John S. Seiter, interpersonal communication, intercultural relations, social influence
Gordon Steinhoff, philosophy of science, logic, metaphysics
William H. Wilcox, Jr., ethical theory, applied ethics, philosophy of law, social and political philosophy
Fuencisla Zomeño, Spanish and Luzo-Brazilian literature

Associate Professors Emeritus
Jerry L. Benbow, Peninsular Spanish literature and grammar
Lynne H. Goodhart, 20th century French poetry, women in literature
Ilona Jappinen, German language, literature and culture, Nietzsche expressionism
Gordon E. Porter, Spanish, Spanish literature, Portuguese
Norman R. Savoie, contemporary French culture, contemporary French detective fiction
Janet C. Stock, French, business French, 20th century French literature, Proust

Assistant Professors
Janette K. Bayles, French cinema and literature
Anne F. Carlson, Francophone literature and culture
Javier Dominguez-Garcia, Spanish medieval and golden age
Susan J. Dudash, late medieval French literature
Andrea Golato, German, applied linguistics
Peter Golato, French, applied linguistics
Sarah Gordon, medieval French
Xenia Harwell, German and Russian literature
Jennifer A. Peeples, environmental rhetoric
J. P. Spicer-Escalante, 19th century Latin American literature
Maria Luisa Spicer-Escalante, Hispanic applied linguistics
Felix W. Tweraser, 20th century Austrian literature

Assistant Professor Emeritus
Valentine Suprunowicz, Russian literature

Principal Lecturer Emeritus
Viva L. Lynn, Spanish literature

Lecturers
Catharina de Jonge-Kannan, second language acquisition
Atsuko Neely, Japanese, second language acquisition

Liberal Arts and Sciences Major

Contact and Advising: College of HASS Advising Center
Location: Student Center 302
Phone: (435) 797-3883
FAX: (435) 797-2096
E-mail: mary.leavitt@usu.edu ***or*** lynne.slade@usu.edu
WWW: http://www.usu.edu/shac/las.html

Degree Offered: Bachelor of Arts (BA) in Liberal Arts and Sciences

The Liberal Arts and Sciences (LAS) Major offers a broad and challenging course of study in the humanities, sciences, arts, and social sciences. Through a multi-disciplinary but coherent approach to learning, the program meets the needs of students majoring in professional fields, as well as those desiring a general background for adaptability and mobility in employment. LAS offers USU students the training required to be competitive and to contribute effectively in the organizations, professions, and communities of the twenty-first century.

This major allows the student to develop an individualized curriculum in consultation with the program advisor (Student Center 302). This major requires a 2.3 overall GPA for admission and a 2.3 USU Cumulative GPA for graduation.

Although the emphasis of this major is in the humanities, arts, and social sciences, the student is encouraged to seek out other educational interests as part of an academic program. The following credit distribution will be typical of most students:

University Studies (30 credits)

The University Studies Program (which is required for all students seeking a bachelor's degree) consists of two sets of requirements: General Education Requirements and Depth Education Requirements. Included in the General Education Requirements are Competency Requirements, including Communications Literacy, Quantitative Literacy, and Computer and Information Literacy. General Education also includes Breadth Requirements in the areas of American Institutions, Creative Arts, Humanities, Life Sciences, Physical Sciences, and Social Sciences. To complete the Depth Education Requirements, students must complete two Communications Intensive courses, one Quantitative Intensive course, and two Depth courses. For more information about the University Studies Program, as well as lists of courses approved for meeting University Studies Requirements, see pages 46-54 in this catalog. Students should consult with the program advisor to determine which University Studies courses will best meet their learning goals.

Foreign Language (2 years)

All students who receive the Bachelor of Arts degree must have completed two years' training or equivalent in a foreign language approved by the Languages, Philosophy, and Speech Communication Department. One year or equivalent in each of two foreign languages may also satisfy the foreign language requirement for the BA degree. Specifically, the BA language requirement may be completed in one of the following ways:

1. Completion of 16 credits in one foreign language.
2. Completion of 20 credits in two foreign languages.
3. In general, completion of course number 2020 in one of the foreign languages or an upper-division (3000-level or above) foreign language grammar or literature course. Conversation classes generally cannot be considered in satisfying this requirement.
4. Successful completion of the Intensive English Language Institute (IELI) program for international students.
5. TOEFL, Michigan, or IELI placement scores high enough to meet the University admission criteria.

The focus of study for the Liberal Arts and Sciences major is to help students gain a basic understanding of the development of civilization, including historical and cultural traditions, political institutions and processes, an appreciation of arts and literature, and expanded capacities for critical thought. Four learning goals are identified, each requiring a minimum of 9 credits, for a total of 36 credits.

Students plan a multi-disciplinary academic program providing a focus for study, with emphasis in primarily social sciences, humanities, and arts.

Pre-professional and Elective Credits

Depending on a student's career objectives, a student may take courses leading to further study in medicine, law, business, or other graduate programs, or continue to study in a number of different disciplines.

Additional Information

Details of requirements for the Liberal Arts and Sciences major, as well as a worksheet for students to record their progress, can be found on the major requirement sheet, available from the College of HASS Advising Center, or online at: **http://www.usu.edu/ats/majorsheets/**

Course Description

Liberal Arts and Sciences (LAS), page 548

Department of Management and Human Resources

Department Head: Gaylen N. Chandler
Location: Business 415
Phone: (435) 797-1789
FAX: (435) 797-1091
E-mail: mhr@usu.edu
WWW: http://www.usu.edu/cob/mhr/

Undergraduate Advisor:
Megen Ralphs, Business 309, (435) 797-2272,
megen.ralphs@usu.edu

Graduate Program Director:
Glenn M. McEvoy, Business 807, (435) 797-2375,
glenn.mcevoy@usu.edu

Degrees offered: Bachelor of Science (BS) and Bachelor of Arts (BA) in Management; BS and BA in Human Resource Management; Master of Science (MS) in Human Resources

The department also participates in the College of Business Master of Business Administration (MBA) Degree. A description of the MBA degree and program requirements can be found on pages 178-179. Graduate-level courses offered by the department are included in the plans of study of graduate students in a wide variety of disciplines. Students can specialize in Entrepreneurship or Human Resource Management in the on-campus MBA program.

Undergraduate Programs

Objectives

The programs in the Department of Management and Human Resources are designed to prepare students for administrative and leadership positions in business, government, and other institutions. Specialized training is provided in Management and Human Resource Management, as well as training directed at understanding the broader aspects of business as it functions within a national and international environment. The study of management is approached from an organizational leadership framework.

Management focuses on the development of entrepreneurial and leadership capabilities. These include recognizing viable business opportunities and developing business concepts that allow firms to take advantage of unique competencies and capabilities. In addition, there is substantial emphasis on the acquisition and allocation of resources, as well as on organizing, leading, and empowering people.

Human Resource Management deals with those processes which provide, develop, and maintain a productive workforce. Subject areas include recruiting employees, determining what tasks need to be performed, placing the right person in the right position, determining fair benefits and compensation, evaluating performance, determining current and future employment needs, training and development, labor-management relations, and following legal/ethical practices in employment.

Departmental Honors

See *Honors in Business* description in the College of Business section of this catalog (page 105).

Learning Objectives and Assessment

Assessment information for the Management and Human Resources Department can be found online at:
http://www.usu.edu/cob/mhr/dept_info/assess.htm

College of Business Requirements

All students majoring in management or human resource management must satisfy the College of Business requirements, provided on pages 105-106. Academic advising about these requirements is available in the College of Business Career and Education Opportunities Center, Business 309.

All students at the University are required to satisfy the University Studies requirements of the University as described on pages 46-54 of this catalog.

Matriculation Requirement and Transfer Limitation

No more than 15 USU College of Business credits (ACCT, BA, BIS, BUS, MHR), numbered 2000 and above, earned as a nonbusiness major (before acceptance into the College of Business) can be applied to a College of Business degree. More than 15 business credits can be transferred from other accredited institutions. However, additional USU College of Business credits added to previously earned transfer business credits may not exceed a combined total of 15. Furthermore, to earn a bachelor's degree in a College of Business major, at least 50 percent of the required College of Business credits must be earned from coursework taken from the Utah State University College of Business.

USU Credits and Business Credits

At least 30 of the last 60 semester credits must be taken from Utah State University, 10 of which must be included within the last 40 credits presented for the degree. At least 50 percent of the College of Business credits required for a College of Business degree must be taken from the Utah State University College of Business or its departments, which include: School of Accountancy, Business Administration, Business Information Systems, Economics, and Management and Human Resources.

College of Business Core

All majors in the Department of Management and Human Resources must complete the following prerequisite courses and business core courses, in addition to the specific courses listed for the major.

Business majors must take these courses as prerequisite to 3000-, 4000-, and 5000-level courses in the College of Business.

Pre-Business Course Requirements (13 credits)

ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles (F,Sp) 3
MATH 1100 (QL) Calculus Techniques (F, Sp, Su) 3
STAT 2300 (QL) Business Statistics (F, Sp, Su) 4
PSY 1010 (BSS) General Psychology (F, Sp, Su) (3 cr) **or**
SOC 1010 (BSS) Introductory Sociology (F, Sp) (3 cr) 3

All 3000-, 4000-, and 5000-level courses in the College of Business are restricted to students admitted to the College of Business or another USU major with an overall GPA of at least 2.67 and completion of at least 40 credits.

Department of Management and Human Resources

College of Business Core (37 credits)
ACCT 2010 Survey of Accounting I (F, Sp, Su)....3
ACCT 2020 Survey of Accounting II (F, Sp, Su)....3
BA 3400 (QI) Corporate Finance (F, Sp, Su) 3
BA 3500 Fundamentals of Marketing (F, Sp, Su)....3
BA 3700 Operations Management (F, Sp, Su)....3
BIS 2450 Spreadsheets and Databases for Business (F, Sp, Su) 3
BIS 2550 (CI) Business Communication (F, Sp, Su)....3
BUS 3250 Discussions With Business Leaders (F, Sp) 1
ECON 2010 (BSS) Introduction to Microeconomics (F, Sp)....3
ECON 3400 International Economics for Business (F, Sp, Su)....3
MHR 2990 Legal and Ethical Environment of Business (F, Sp, Su)....3
MHR 3110 Managing Organizations and People (F, Sp, Su) 3
MHR 4880 (CI) Business Strategy in an Entrepreneurial Context (F, Sp) (3 cr) **or**
MHR 4890 (CI) Business Strategy in a Global Context (F, Sp, Su) (3 cr)....3

Requirements for Majors

Management (15 credits)
MHR 3510 Fundamentals of Entrepreneurship (F) 3
MHR 3520 Relationship and Organizational Competencies for Entrepreneurs (Sp)....3
MHR 3710 Developing Team and Interpersonal Skills (F,Sp)....3
MHR 3820 International Management (F,Sp)....3
MHR 4510 Senior Seminar in Entrepreneurship (F) 3

Students completing the Management major requirements must take **MHR 4880** as their senior capstone course in the Business Core requirements. Students should also note that **MHR 3510 and 3520** should be taken prior to **MHR 4510**.

Human Resource Management (9 credits)
MHR 3710 Developing Team and Interpersonal Skills (F,Sp)....3
MHR 3820 International Management (F,Sp)....3
MHR 4630 Human Resource Management (F,Sp)....3

Human Resource Management Major Electives (6 credits)
Students must complete at least **two** of the following:
MHR 3720 Leading Organization Change 3
MHR 3810 Employment Law and Policy Development (F,Sp) 3
MHR 4730 Business and Society (3 cr) **or**
PHIL 3520 (DHA) Business Ethics (Sp) (3 cr)....3
MHR 5640 Selected Topics in Management and Human Resources....3
ECON 5680 Labor Economics (Sp) 3
BIS 4350 Introduction to Training and Development (Sp) (3 cr) **or**
ECON 5660 Training and Organizational Development (Sp) (2 cr) ....2 or 3

Elective Course Requirements
Because the University requires a minimum of 120 credits for a bachelor's degree, students will need to take some elective credits. These credits may be chosen from any course (1000-level or above) offered by the University. If a student wants to complete a minor or a dual major in another department, the use of elective credits should be planned carefully with an advisor in the other department.

If a College of Business student elects to take a minor, he or she is encouraged to select one from outside the College of Business.

Requirements for Minors

A minor in Management and a minor in Human Resource Management are available, as outlined below. Any deviation from the programs as outlined must be submitted in writing, with justification for the changes, to the department head for approval. A 2.50 GPA in the minor courses is required.

Minor in Management
This minor is for students who expect to work in an organization where they will assume supervisory or management responsibilities. The Management minor consists of a minimum of 12 credits.

Required:
MHR 3110 Managing Organizations and People (F,Sp,Su) 3

Select three courses from the following:
MHR 2990 Legal and Ethical Environment of Business (F,Sp,Su)....3
MHR 3710 Developing Team and Interpersonal Skills (F,Sp)....3
MHR 3720 Leading Organization Change 3
MHR 3810 Employment Law and Policy Development (Prerequisite: MHR 2990) (F,Sp)....3
MHR 3820 International Management (F,Sp)....3
MHR 4630 Human Resource Management (F,Sp)....3
MHR 4730 Business and Society (3 cr) **or**
PHIL 3520 (DHA) Business Ethics (Sp) (3 cr)....3
MHR 5640 Selected Topics in Management and Human Resources....3
BIS 4350 Introduction to Training and Development (Sp) (3 cr) **or**
ECON 5660 Training and Organizational Development (Sp) (2 cr) ....2 or 3
ECON 5680 Labor Economics (Sp) 3

Minor in Human Resource Management
This minor is for students who want to work in any of the human resource functions of an organization. The Human Resource Management minor consists of a minimum of 12 credits.

Required:
MHR 3110 Managing Organizations and People (F,Sp,Su) 3
MHR 4630 Human Resource Management (F,Sp)....3

Select two courses from the following:
MHR 2990 Legal and Ethical Environment of Business (F,Sp,Su)....3
MHR 3710 Developing Team and Interpersonal Skills (F,Sp)....3
MHR 3720 Leading Organization Change 3
MHR 3810 Employment Law and Policy Development (Prerequisite: MHR 2990) (F,Sp)....3
MHR 3820 International Management (F,Sp)....3
MHR 4730 Business and Society (3 cr) **or**
PHIL 3520 (DHA) Business Ethics (Sp) (3 cr)....3
MHR 5640 Selected Topics in Management and Human Resources....3
BIS 4350 Introduction to Training and Development (Sp) (3 cr) **or**
ECON 5660 Training and Organizational Development (Sp) (2 cr) ....2 or 3
ECON 5680 Labor Economics (Sp) 3

Note: An overall GPA of 2.67 and admission into a degree-seeking major are required for enrollment in 3000- or 4000-level courses in the Department of Management and Human Resources.

Graduation Requirements

To be recommended by the department for graduation, majors in the Department of Management and Human Resources must have a grade point average of at least 2.50 in their upper-division core and specialization courses, as well as an overall GPA of 2.50. This includes transfer credits. At least fifty percent of the business credits required for a business degree must be taken on the Utah State University campus or at a designated residence center.

Department of Management and Human Resources

Financial Assistance

The Department of Management and Human Resources and the College of Business award scholarships in addition to those available through the University Financial Aid Office. Information and application forms are available from the College of Business Career and Education Opportunities Center, Business 309.

Student Organization

The department sponsors a student organization. Membership in the organization is open to all students, both undergraduate and graduate, who meet the membership requirements.

Society for Human Resource Management (SHRM) is the professional Human Resource Management organization co-sponsored by the Bridgerland Chapter of SHRM.

Additional Information

A major requirement sheet, which includes further information about career opportunities and course requirements for the majors and minors within the Management and Human Resources Department, can be found online at: **http://www.usu.edu/ats/majorsheets/**

Further information about undergraduate programs in the College of Business can be obtained from the Career and Education Opportunities Center, Business 309, or found on the Web at: **http://www.usu.edu/cobceo**

Graduate Programs

Master of Science in Human Resources (MS HR)

Objectives

The MS in Human Resources degree prepares students for professional careers in the field of Human Resource Management. The instruction is designed to teach students to assume a strategic role in helping organizations gain competitive advantage by building employee commitment, competence, and effectiveness. Required subject areas include human resource planning, recruiting, selection, placement, compensation and benefits, career planning, training and organizational development, labor and employee relations, ethical/legal employment practices, statistical methods, and program evaluation.

Admission Requirements

See Admission Procedures on pages 93-94. Students are required to submit scores on either the Graduate Record Examination (GRE) or the Graduate Management Admissions Test (GMAT). Prospective students may request information on the expected test performance standards for acceptance. Applicants are expected to have strong written and oral communication skills.

Students without sufficient relevant work experience are required to complete an approved internship. The executive in residence in the MHR Department and/or the MS in Human Resources steering committee will serve as facilitators to help secure internship opportunities. All students are strongly encouraged to take the certification exam of the Human Resource Certification Institute (HRCI).

Students are expected to be admitted to the program as matriculated students before taking coursework leading to the degree.

Degree Requirements

Students are held responsible for meeting requirements as outlined below. It is the student's responsibility to be aware of all requirements and initiate the resolution of apparent inconsistencies.

The typical degree option is Plan C, which includes coursework to meet the degree requirements. The student should consult with the graduate program director if the Plan B option is being considered.

The MS in Human Resources degree usually requires 33 credits beyond the Business Core. The total number of credits is 47 for students without an undergraduate business degree or commensurate work experience. Coursework includes MHR 6330, 6550, 6620, 6630, 6650, 6670, 6680, 6690, 6760; BUS 6250; and MHR 6310 or one 3-credit elective approved by the steering committee. Students with applicable and relevant work experience may substitute MHR 6900 for BUS 6250 (Graduate Internship) on approval of the MS in Human Resources steering committee. Students with an undergraduate degree from an AACSB-International accredited business school or equivalent work experience will not be required to take the business core. Students are also strongly encouraged to take the HRCI (Human Resource Certification Institute) exam.

Additional information about the MS in Human Resources degree may be obtained by contacting the Department of Management and Human Resources.

Financial Assistance and Assistantships

A limited number of graduate assistantships, scholarships, and other departmental awards are provided to outstanding on-campus students on a competitive basis. Acceptance to the program does not guarantee financial assistance. Application forms are available from the MHR Department. The deadline for financial aid assistance is March 15.

Master of Business Administration (MBA)

The department also participates with other departments in the College of Business in offering the Master of Business Administration (MBA) Degree. A description of the MBA degree and program requirements can be found on pages 178-179 of this catalog.

Management and Human Resources Faculty

Professors

Caryn L. Beck-Dudley, Dean of College of Business, business law, employment law, and social responsibility
Gaylen N. Chandler, entrepreneurship, management
Glenn M. McEvoy, human resources, organizational behavior, management
David B. Stephens, business strategy and labor relations

Professors Emeritus

Vernon M. Buehler
Howard M. Carlisle
John R. Cragun

Department of Management and Human Resources

Gary B. Hansen
Leon R. McCarrey
Y. Krishna Shetty

Associate Professors
Ronda R. Callister, management, organizational behavior, international management
David R. Daines, business law, employment law, and social responsibility
Ross E. Robson, lean manufacturing, management

Adjunct Associate Professor
Steven H. Hanks, business strategy, management, and entrepreneurship

Assistant Professors
Alison Cook, organizational behavior, human resource management
Dawn DeTienne, entrepreneurship
James Hayton, management, human resources
Konrad S. Lee, employment law, business law
Troy V. Mumford, organizational behavior, human resource management, compensation

Adjunct Senior Lecturers
Mary Jo Blahna, organizational behavior, management, human resources
Shari Tarnutzer, international management

Principal Lecturer
Alan P. Warnick, human resource management

Lecturer
David G. Herrmann, management and entrepreneurship

Course Descriptions

Management and Human Resources (MHR), pages 549-551

Department of Mathematics and Statistics

Department Head: Russell C. Thompson
Location: Lund Hall 211
Phone: (435) 797-2809
FAX: (435) 797-1822
E-mail: mathstat@cc.usu.edu
WWW: http://www.math.usu.edu/

Assistant Department Head:
Daniel C. Coster, Lund Hall 211B, (435) 797-2811, coster@math.usu.edu

Undergraduate Program Coordinator:
Ian M. Anderson, Lund Hall 318, (435) 797-2822, anderson@math.usu.edu

Graduate Program Coordinator:
D. Richard Cutler, Lund Hall 302C, (435) 797-2699, richard@math.usu.edu

Mathematics Education Program Director:
James S. Cangelosi, Lund Hall 325C, (435) 797-1415, jcang@math.usu.edu

Undergraduate Advisors:
Mathematics:
Chris S. Coray, Lund Hall 310, (435) 797-2861, coray@math.usu.edu

Statistics:
Christopher D. Corcoran, Lund Hall 204, (435) 797-4012, corcoran@math.usu.edu

Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), and Master of Science (MS) in Mathematics; BS and BA in Mathematics Education; BS in Composite Mathematics-Statistics Education; BS in Composite Mathematics/Statistics; Master of Mathematics (MMath); BS, BA, and MS in Statistics; MS in Industrial Mathematics; Doctor of Philosophy (PhD) in Mathematical Sciences

Graduate specializations: *PhD in Mathematical Sciences*—College Teaching, Interdisciplinary Studies, Pure and Applied Mathematics, and Statistics

Undergraduate Programs

Objectives

The Department of Mathematics and Statistics offers a variety of programs and courses designed to prepare students for careers in teaching and for positions as mathematicians and statisticians in industry and government. The department also provides service courses for students in many other disciplines and contributes to the University Studies program by providing Quantitative Literacy and Quantitative Intensive classes.

Placement of New Students

The mathematics ACT score, on-campus placement tests, and Advanced Placement (AP) calculus and statistics scores are used for placement in 1000-level and 2000-level mathematics and statistics courses. New students and students who are registering for a math class at USU for the first time should have a math ACT score of at least 18 to register for MATH 1010 (Intermediate Algebra), a score of at least 19 to register for STAT 1040, and a score of at least 23 to register for MATH 1030 (Quantitative Reasoning), MATH 1050 (College Algebra), and MATH 1060 (Trigonometry). The alternative to this is to take a placement examination in the Testing Services Office, University Inn 115. **A student who has already taken a math class at USU may register for the next higher level course, providing he or she received a grade of *C-* or better in the prerequisite course. Equivalent transfer courses must also have a *C-* or better grade.** Entering students with math ACT scores of less than 18 should register for MATH 0900 (Elements of Algebra) or take the placement examination to qualify for a higher-level course. The placement exam requires a small fee.

A math ACT score of at least 25 is needed to begin in MATH 1100, and an ACT score of at least 27 is needed to begin in MATH 1210.

Entering students with passing scores on AP calculus or statistics exams will be given 8 semester credits in mathematics for passing either one of the calculus exams, and 4 semester credits for passing the statistics exam. Part of this credit may include specific USU courses. Students with an AP calculus AB score of 3 will generally be advised to start in MATH 1210 (Calculus I). Students with a score of 4 or 5 on the calculus AB exam or a score of 3 or 4 on the calculus BC exam will be given credit for MATH 1210, and will be advised to begin in MATH 1220 (Calculus II). Students with a score of 5 on the calculus BC exam will be given credit for MATH 1210 and 1220, and will be advised to begin in MATH 2210 (Multivariable Calculus). Students with a score of 3 or higher on the AP statistics exam will be given credit for STAT 2000. Students may also take a placement test in the USU Testing Center to determine if MATH 1100 (Calculus Techniques) or MATH 1210 (Calculus I) is an appropriate place to start.

The calculus courses MATH 1210, 1220, and 2210 are designed for students in mathematics, the sciences, and engineering. MATH 1100 (Calculus Techniques) is designed primarily for students in business and a few other majors. All students in calculus classes need strong backgrounds in the material covered in MATH 1010 and MATH 1050. In addition, the MATH 1210, 1220, 2210 sequence requires trigonometry (MATH 1060) and a graphics calculator.

Students with outstanding mathematics records in high school and transfer students with some experience in calculus may wish to consult with a departmental advisor prior to registration.

Departmental Admission Requirements

1. New freshmen admitted to USU in good standing qualify for admission to the major.

2. Transfer students from other institutions need a 2.2 transfer GPA, and students transferring from other USU majors need a 2.0 total GPA for admission to this major in good standing.

3. Students may be admitted to the Mathematics Education major by satisfying either of the above conditions. However, in order to be admitted to the Secondary Teacher Education Program (STEP), and to graduate from the Mathematics Education major (and minor), students must have a cumulative GPA of at least 3.0 in the equivalent of MATH 1210, 1220, and 2210, and an overall GPA of at least 2.75.

University Requirements

All students in the Department of Mathematics and Statistics must satisfy the requirements of USU's University Studies program, described on pages 46-54 of this catalog.

College of Science Requirements

Every bachelor's degree candidate in the College of Science must complete the following coursework or its equivalent:

1. One year of calculus:
MATH 1210 (QL) Calculus I (F,Sp,Su) (4 cr) **and**
MATH 1220 (QL) Calculus II (F,Sp,Su) (4 cr).....8
In some degrees or emphases within degrees, the second semester of calculus may be replaced by STAT 3000. The substitution will be for specific degree programs, not by student choice.

2. One of the following year-long sequences. The chosen sequence must be *outside the student's major department*.
BIOL 1210 Biology I (F) (4 cr) **and**
BIOL 1220 (BLS) Biology II (Sp) (4 cr).....8
Or
CHEM 1210 Principles of Chemistry I (F,Sp) (4 cr) **and**
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) (4 cr).....8
Or
GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F,Sp) (4 cr) **and**
GEOL 3200 (DSC) The Earth Through Time (Sp) (4 cr).....8
Or
PHYX 2110 The Physics of Living Systems I (4 cr) **and**
PHYX 2120 (BPS) The Physics of Living Systems II (4 cr).....8
Or
PHYX 2210 General Physics—Science and Engineering I (4 cr)
PHYX 2220 (BPS/QI) General Physics—Science and Engineering II (4 cr).....8

Bachelor of Arts (BA) Degree

For this degree, students must complete the major requirements for the corresponding BS degree, plus the equivalent of two years of training in a foreign language. The Languages, Philosophy, and Speech Communication Department is responsible for approving the foreign language coursework for this degree.

Major Requirements

Major and minor requirements in the Department of Mathematics and Statistics vary from time to time. Students may obtain from the department information about the exact requirements in effect at any given time. All grades for MATH and STAT courses applied toward a departmental major or minor must be *C-* or better. Major and minor requirements in effect at the beginning of Fall Semester 2005 are given below.

Mathematics Major (44 credits)

A. Required Courses (29 credits)
MATH 1210 (QL) Calculus I (F,Sp,Su).....4
MATH 1220 (QL) Calculus II (F,Sp,Su).....4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su).....3
MATH 2270 (QI) Linear Algebra (F).....3
MATH 2280 (QI) Ordinary Differential Equations (Sp).....3
MATH 4200 (CI) Foundations of Analysis (F,Sp).....3
MATH 4310 (CI) Introduction to Algebraic Structures (F,Sp).....3
MATH 5210 Introduction to Analysis I (F).....3
MATH 5710 Introduction to Probability (F,Sp).....3

B. Core Courses (6 credits)
Select at least two courses (6 credits) from the following:
MATH 5110 Differential Geometry (F).....3
MATH 5220 Introduction to Analysis II (Sp).....3
MATH 5270 Complex Variables (Sp).....3
MATH 5310 Introduction to Modern Algebra (Sp) (3 cr) **or**
MATH 5340 Theory of Linear Algebra (Sp) (3 cr).....3
MATH 5510 Introduction to Topology (F).....3

C. Elective Courses (9 credits)
Select at least three courses (9 credits) in mathematics courses numbered above 5000, excluding MATH 5570 (Actuarial Math I) and 5580 (Actuarial Math II).

Note: MATH 2250 (Linear Algebra and Differential Equations) may substitute for both MATH 2270 (Linear Algebra) and Math 2280 (Ordinary Differential Equations); however, MATH 2270 and 2280 are recommended. Several options in this major exist (e.g., Actuarial Science and Computational Mathematics). Contact the Mathematics and Statistics Department for details.

Mathematics Education Major (71 credits)

A. Mathematics and Statistics Courses (39 credits)
STAT 1040 (QL) Introduction to Statistics (F,Sp,Su).....3
MATH 1210 (QL) Calculus I (F,Sp,Su).....4
MATH 1220 (QL) Calculus II (F,Sp,Su).....4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su).....3
MATH 2250 (QI) Linear Algebra and Differential Equations (F,Sp,Su)..4
MATH 3110 Modern Geometry (Sp).....3
MATH 4200 (CI) Foundations of Analysis (F,Sp).....3
MATH 4310 (CI) Introduction to Algebraic Structures (F,Sp).....3
MATH 4400 History of Mathematics and Number Theory (Sp).....3
MATH 4620 Computer Aided Math for Secondary Math Teachers (F)..3
MATH 5500 Capstone Mathematics and Statistics for Teachers (F).....3
MATH 5710 Introduction to Probability (F,Sp).....3

B. Secondary Teacher Education Program (STEP) (32 credits)
Level 1
SCED 3100 Motivation and Classroom Management (F,Sp).....3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp).....3
MATH 3300 School Laboratory for Mathematics Teachers Level I (F,Sp).....1
MATH 4500 Methods of Secondary School Mathematics Teaching (F,Sp).....3
INST 3500 Technology Tools for Secondary Teachers (F,Sp,Su).....1

Level 2
SPED 4000 Education of Exceptional Individuals (may be taken anytime) (F,Sp,Su).....2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp).....3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp).....3
MATH 4300 School Laboratory for Mathematics Teachers Level II (F,Sp).....1

Level 3
SCED 5500 Student Teaching Seminar (F,Sp).....2
SCED 5630 Student Teaching in Secondary Schools (F,Sp).....10

Note: Admission to the STEP requires a GPA of at least 3.00 in the equivalent of MATH 1210 (Calculus I), Math 1220 (Calculus II), and

MATH 2210 (Multivariable Calculus) and an overall GPA of at least 2.75. Graduation from this major also requires an overall GPA of at least 2.75. No more than three repeats in *all* required courses may be used in GPA computations. The STEP is normally completed during the last three semesters of the degree program, and consequently nearly all the mathematics classes in the Mathematics Education Major must be completed before beginning the STEP.

Note: Beginning in 2006, all USU teacher education candidates will be required to take and pass the content exam approved by the Utah State Office of Education in their major content area prior to student teaching.

Note: MATH 2270 (Linear Algebra) and MATH 2280 (Ordinary Differential Equations) may substitute for MATH 2250 (Linear Algebra and Differential Equations).

Composite Mathematics-Statistics Education Major (85-86 credits)

A. Mathematics and Statistics Courses (50-51 credits)

STAT 1040 (QL) Introduction to Statistics (F,Sp,Su) 3
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
STAT 3000 (QI) Statistics for Scientists (F,Sp) (3 cr) **or**
STAT 2000 (QI) Statistical Methods (F,Sp,Su) (3 cr) 3
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3
MATH 2250 (QI) Linear Algebra and Differential Equations (F,Sp,Su) (4 cr) **or**
MATH 2270 (QI) Linear Algebra (F) (3 cr) ..... 3 or 4
STAT 5100 (QI/CI) Linear Regression and Time Series (F) 3
MATH 3110 Modern Geometry (Sp) 3
MATH 4200 (CI) Foundations of Analysis (F,Sp) 3
MATH 4310 (CI) Introduction to Algebraic Structures (F,Sp) 3
MATH 4400 History of Mathematics and Number Theory (Sp) 3
MATH 4620 Computer Aided Math for Secondary Math Teachers (F) .. 3
MATH 5500 Capstone Mathematics and Statistics for Teachers (F) 3
MATH 5710 Introduction to Probability (F,Sp) 3
STAT 5200 Design of Experiments (Sp) 3
STAT 5890 (CI) Problem Solving in Statistics (Sp) 3

B. Secondary Teacher Education Program (STEP) (35 credits)

Level 1
SCED 3100 Motivation and Classroom Management (F,Sp) 3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp) 3
MATH 3300 School Laboratory for Mathematics Teachers Level I (F,Sp) 1
MATH 4500 Methods of Secondary School Mathematics Teaching (F,Sp) 3
STAT 4500 Methods of Teaching Statistics in Secondary and Middle School (F,Sp) 3
INST 3500 Technology Tools for Secondary Teachers (F,Sp,Su) 1

Level 2
SPED 4000 Education of Exceptional Individuals (may be taken anytime) (F,Sp,Su) 2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp) 3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp) 3
MATH 4300 School Laboratory for Mathematics Teachers Level II (F,Sp) 1

Level 3
SCED 5500 Student Teaching Seminar (F,Sp) 2
SCED 5630 Student Teaching in Secondary Schools (F,Sp) 10

Note: Admission to the STEP requires a GPA of at least 3.00 in the equivalent of MATH 1210 (Calculus I), Math 1220 (Calculus II), and MATH 2210 (Multivariable Calculus) and an overall GPA of at least 2.75. Graduation from this major also requires an overall GPA of at least 2.75. No more than three repeats in *all* required courses may be used in GPA computations. The STEP is normally completed during the last three semesters of the degree program, and consequently nearly all the mathematics classes in the Mathematics-Statistics Education Major must be completed before beginning the STEP.

Note: Beginning in 2006, all USU teacher education candidates will be required to take and pass the content exam approved by the Utah State Office of Education in their major content area prior to student teaching.

Statistics Major (47 credits)

A. Required Courses (38 credits)

MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3
MATH 2270 (QI) Linear Algebra (F) 3
MATH 4200 (CI) Foundations of Analysis (F,Sp) 3
MATH 5710 Introduction to Probability (F,Sp) 3
MATH 5720 Introduction to Mathematical Statistics (Sp) 3
CS 1700 Introduction to Computer Science—CS 1 (F,Sp,Su) 3
STAT 3000 (QI) Statistics for Scientists (F,Sp) (3 cr) **or**
STAT 2000 (QI) Statistical Methods (F,Sp,Su) (3 cr) 3
STAT 5100 (QI/CI) Linear Regression and Time Series (F) 3
STAT 5200 Design of Experiments (Sp) 3
STAT 5890 (CI) Problem Solving in Statistics (Sp) 3

B. Elective Courses (9 credits)

Select three courses (9 credits) in statistics numbered above 5000. One of the three elective classes may be selected from:
MATH 4630 Computer Aided Math for Scientists and Engineers (Sp) .. 3
MATH 5570 Actuarial Math I (F) 3
MATH 5610 Computational Linear Algebra and Solution of Systems of Equations (F) 3
MATH 5760 Stochastic Processes (F) 3

Note: MATH 2250 (Linear Algebra and Differential Equations) may substitute for MATH 2270 (Linear Algebra).

Emphasis Requirements

Computational Mathematics Emphasis (60 credits)

The Computational Mathematics Emphasis is available in the Mathematics Major.

A. Required Mathematics Courses (35 credits)

MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3
MATH 2270 (QI) Linear Algebra (F) 3
MATH 2280 (QI) Ordinary Differential Equations (Sp) 3
MATH 3310 Discrete Mathematics (F,Sp,Su) 3
MATH 4200 (CI) Foundations of Analysis (F,Sp) 3
MATH 5210 Introduction to Analysis I (F) 3
MATH 5610 Computational Linear Algebra and Solution of Systems of Equations (F) 3
MATH 5620 Numerical Solution of Differential Equations (Sp) 3
MATH 5710 Introduction to Probability (F,Sp) 3

B. Required Computer Science Courses (13 credits)
CS 1700 Introduction to Computer Science—CS 1 (F,Sp,Su) 3
CS 1710 Introduction to Computer Science—CS 1 Lab (F,Sp,Su) 1
CS 1720 (QI) Introduction to Computer Science—CS 2 (F,Sp,Su) 3
CS 2200 (QI) Algorithms and Data Structures—CS 3 (F,Sp,Su).....3
CS 2370 (CI) Software Engineering (F,Sp) 3

C. Mathematics Elective Courses (6 credits)
Select two courses (6 credits) in mathematics numbered above 4620, excluding MATH 5570 (Actuarial Math I) and 5580 (Actuarial Math II).

D. Computer Science Elective Courses (6 credits)
Select at least two courses (6 credits) in computer science numbered above 4000.

Note: Mathematics majors are strongly urged to take MATH 2270 (Linear Algebra) and MATH 2280 (Ordinary Differential Equations) *instead of* MATH 2250 (Linear Algebra and Differential Equations).

Note: Students who complete the Computer Science coursework with a GPA of at least 2.5 automatically earn a minor in Computer Science.

Actuarial Science Emphasis (59 credits)

The Actuarial Science Emphasis is available in *either* the Mathematics Major *or* the Statistics Major.

A. Mathematics and Statistics Courses (for Mathematics Majors) (44 credits)
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3
MATH 2270 (QI) Linear Algebra (F) 3
MATH 2280 (QI) Ordinary Differential Equations (Sp) 3
MATH 4200 (CI) Foundations of Analysis (F,Sp).....3
MATH 4310 (CI) Introduction to Algebraic Structures (F,Sp).....3
MATH 5210 Introduction to Analysis I (F).....3
MATH 5570 Actuarial Math I (F).....3
MATH 5580 (CI) Actuarial Math II (Sp).....3
MATH 5710 Introduction to Probability (F,Sp) 3
MATH 5720 Introduction to Mathematical Statistics (Sp).....3
STAT 3000 (QI) Statistics for Scientists (F,Sp,Su) (3 cr) **or**
STAT 2000 (QI) Statistical Methods (F,Sp) (3 cr) 3
STAT 5100 (QI/CI) Linear Regression and Time Series (F).....3

B. Mathematics and Statistics Courses (for Statistics Majors) (44 credits)
Statistics Majors must complete all of the courses listed above in ***Section A***, *except for* the following two courses:
MATH 4310 (CI) Introduction to Algebraic Structures (F,Sp).....3
MATH 5210 Introduction to Analysis I (F).....3

In addition, students must complete the following:
STAT 5200 Design of Experiments (Sp).....3
Elective STAT course numbered above 5000 3

C. Required Accounting, Business Administration, Economics, and Management and Human Resources Courses (15 credits)
ACCT 2010 Survey of Accounting I (F,Sp,Su).....3
BA 3400 (QI) Corporate Finance (F,Sp,Su) 3
ECON 2010 (BSS) Introduction to Microeconomics (F,Sp).....3
ECON 5000 Macroeconomics (F) 3
MHR 2990 Legal and Ethical Environment of Business (F,Sp,Su).....3

Note: Mathematics majors are strongly urged to take MATH 2270 (Linear Algebra) and MATH 2280 (Ordinary Differential Equations) *instead* of MATH 2250 (Linear Algebra and Differential Equations).

Note: Admission to the Actuarial Science Emphasis requires explicit departmental approval.

Composite Major in Mathematics/Statistics (59 credits)

A. Required Courses (47 credits)
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3
MATH 2270 (QI) Linear Algebra (F) 3
MATH 2280 (QI) Ordinary Differential Equations (Sp) 3
MATH 4200 (CI) Foundations of Analysis (F,Sp).....3
MATH 4310 (CI) Introduction to Algebraic Structures (F,Sp).....3
MATH 5210 Introduction to Analysis I (F).....3
MATH 5710 Introduction to Probability (F,Sp) 3
MATH 5720 Introduction to Mathematical Statistics (Sp).....3
CS 1700 Introduction to Computer Science—CS 1 (F,Sp,Su) 3
STAT 3000 (QI) Statistics for Scientists (F,Sp) (3 cr) **or**
STAT 2000 (QI) Statistical Methods (F,Sp,Su) (3 cr).....3
STAT 5100 (QI/CI) Linear Regression and Time Series (F).....3
STAT 5200 Design of Experiments (Sp).....3
STAT 5890 (CI) Problem Solving in Statistics (Sp) 3

B. Elective Mathematics Courses (6 credits)
Select at least two courses (6 credits) in mathematics numbered above 5000.

C. Elective Statistics Courses (6 credits)
Select at least two courses (6 credits) in statistics numbered above 5000. Either MATH 5760 (Stochastic Processes) or MATH 5570 (Actuarial Math I) may substitute for one of the statistics elective courses.

Note: Mathematics majors are strongly urged to take MATH 2270 and 2280 *instead* of MATH 2250, but MATH 2250 may substitute for MATH 2270 and 2280.

Minor Requirements

Mathematics Minor (23 credits)

A. Required Courses (17 credits)
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3
MATH 2270 (QI) Linear Algebra (F) 3
MATH 2280 (QI) Ordinary Differential Equations (Sp) 3

B. Elective Courses (6 credits)
Select at least two additional courses (6 credits) in mathematics numbered above 4000, ***excluding*** the following courses: MATH 4300, 4400, 4500, 4620, 5570, and 5580.

Note: Mathematics minors are strongly urged to take MATH 2270 and 2280 *instead* of MATH 2250, but MATH 2250 may substitute for MATH 2270 and 2280.

Department of Mathematics and Statistics

Statistics Minor (15 credits)

A. Required Courses (9 credits)

STAT 3000 (QI) Statistics for Scientists (F,Sp) (3 cr) **or**
STAT 2000 (QI) Statistical Methods (F,Sp) (3 cr) 3
STAT 5100 (QI/CI) Linear Regression and Time Series (F) 3
STAT 5200 Design of Experiments (Sp) 3

B. Elective Courses (6 credits)

Select two additional courses (6 credits) from statistics courses numbered above 5000, or from the following courses:
MATH 5710 Introduction to Probability (F,Sp) 3
MATH 5720 Introduction to Mathematical Statistics (Sp) 3
MATH 5760 Stochastic Processes (F) 3

Mathematics Education Minor (42 credits)

STAT 1040 (QL) Introduction to Statistics (F,Sp,Su) 3
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3
MATH 2250 (QI) Linear Algebra and Differential Equations (F,Sp,Su) .. 4
MATH 3110 Modern Geometry (Sp) 3
MATH 4200 (CI) Foundations of Analysis (F,Sp) 3
MATH 4310 (CI) Introduction to Algebraic Structures (F,Sp) 3
MATH 4400 History of Mathematics and Number Theory (Sp) 3
MATH 4500 Methods of Secondary School Mathematics Teaching (F,Sp) 3
MATH 4620 Computer Aided Math for Secondary Math Teachers (F) .. 3
MATH 5500 Capstone Mathematics and Statistics for Teachers (F) 3
MATH 5710 Introduction to Probability (F,Sp) 3

Completion of the Secondary Teacher Education Program (STEP) for the student's Secondary Education major is also required. Admission to the STEP requires a GPA of at least 3.00 in the equivalent of MATH 1210, 1220, and 2210, and an overall GPA of at least 2.75. Graduation from this minor also requires an overall GPA of at least 2.75. No more than three repeats in all required courses may be used in GPA computations. The STEP is normally completed during the last three semesters of study, and consequently nearly all the mathematics classes in the Mathematics Education Minor must be completed before beginning the STEP.

Biomathematics Minor (36-40 credits)

A. Required Courses (28 credits)

BIOL 1210 Biology I (F) 4
BIOL 1220 (BLS) Biology II (Sp) 4
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
MATH 2270 (QI) Linear Algebra (F) 3
MATH 2280 (QI) Ordinary Differential Equations (Sp) 3
STAT 3000 (QI) Statistics for Scientists (F,Sp) 3
MATH/BIOL 4230 (QI) Applied Mathematics in Biology (Sp) 3

Note: MATH 2250 may substitute for *both* MATH 2270 and 2280.

B. Elective Courses (8-12 credits)

Biology majors must take one course from the biology electives (listed below), and two courses from the mathematics and statistics electives (listed below). Mathematics and Statistics majors must take two courses from the biology electives, and one course from the mathematics and statistics electives. All other majors must take two courses from each set of electives.

Biology Electives

BIOL 3220 (QI) Field Ecology (F) 2
BIOL 5020 (QI) Modeling Biological Systems (F) 3
BIOL 5380 Evolutionary Genetics (F) 4
BIOL 5600 Comparative Animal Physiology (F) 3
BIOL 5620 Medical Physiology (Sp) 3
FRWS 3810 Plant and Animal Populations (Sp) 3
PUBH 5330 (QI) Industrial Hygiene Chemical Hazard Control (F) 3
BMET 5500 Land-Atmosphere Interactions (Sp) 3

Mathematics and Statistics Electives

MATH 4630 Computer Aided Math for Scientists and Engineers (Sp) .. 3
MATH 5410 Methods of Applied Mathematics (F) 3
MATH 5420 Partial Differential Equations (Sp) 3
MATH 5460 Introduction to the Theory and Application of Nonlinear Dynamical Systems (Sp) 3
MATH 5610 Computational Linear Algebra and Solution of Systems of Equations (F) 3
MATH 5620 Numerical Solution of Differential Equations (Sp) 3
MATH 5710 Introduction to Probability (F,Sp) 3
STAT 5100 (CI/QI) Linear Regression and Time Series (F) 3
STAT 5110 Theory of Linear Models (F) 3
STAT 5120 Categorical Data Analysis (F) 3
STAT 5200 Design of Experiments (Sp) 3
STAT 5300 (QI) Statistical Process Control (Sp) 3
STAT 5600 (CI) Applied Multivariable Statistics (Sp) 3

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information

Students who enter the University with AP credit in Mathematics and/or Statistics, and about 30 additional AP or CLEP credits, may be able to complete both a BS and an MS degree within five years or less. Interested students should consult with a departmental undergraduate advisor.

For detailed information about requirements for majors and minors within the Mathematics and Statistics Department, see the major requirement sheet, which is available from the department, or online at:
http://www.usu.edu/ats/majorsheets/

Financial Support

The department offers several one-, two-, and four-year scholarships to qualified students who enroll as full-time Mathematics, Mathematics

Education, or Statistics majors. The winner of the Hunsaker Scholarship receives a cash award each semester for two years. This award is given in addition to any four-year scholarship or tuition waiver for which the student is eligible. During the final two years, the recipient is expected to work as a grader for the department. The department also offers other scholarships (Elich, Ellis, van Vliet, and departmental). The amount of these scholarships varies from year to year. The Ellis Scholarship is awarded to a junior or senior Mathematics Education major, and the recipient is selected by the department. To apply for any of these scholarships (except for the Ellis Scholarship, for which there is no application) fill out the scholarship application form located at **http://www.math.usu.edu/undergrad/application.html**, send a statement of qualifications, including high school transcripts and SAT or ACT scores, and three letters of recommendation to:

Scholarship Committee
Department of Mathematics and Statistics
Utah State University
3900 Old Main Hill
Logan UT 84322-3900

Applications must be received by April 1.

Learning Objectives

All students having majors within the Department of Mathematics and Statistics are expected to achieve competency in: (1) pre-calculus algebra; (2) calculus of one and several variables; (3) ordinary differential equations; (4) linear algebra/matricies, eigenvalues/ eigenvectors, determinant, rank; and (5) analysis (introduction to formal proofs/analysis theory).

Students enrolled in specific departmental majors should also have competence in additional areas pertaining to their major. These areas are listed in the following paragraphs.

Mathematics Major

(1) algebraic structures; (2) analysis/advanced calculus; (3) complex variables; (4) topology; (5) algebraic theory; and (6) partial differential equations.

Statistics Major

(1) theory of probability and statistics; (2) linear regression/time series; (3) experiment design; and (4) one or more of sampling, categorical analysis, multivariate analysis, quality control.

Mathematics Education Major (including Composite Mathematics-Statistics Education)

(1) algebraic structures; (2) probability; (3) history of mathematics; (4) methods for secondary school teaching of mathematics and/or statistics; and (5) in-service teaching experiences.

Other Majors and Emphases (e.g., Computational Mathematics Emphasis, Actuarial Science Emphasis, etc.)

Replace general competencies in traditional areas (i.e., algebra, topology, analysis) with specific topics related to the specialized emphasis. For example, students in the **Computational Mathematics Emphasis** need the ability to write computer code to solve linear, nonlinear, stochastic, and (partial and ordinary) differential equations; and students in the **Actuarial Science Emphasis** need two semesters of actuarial mathematics.

Assessment

Assessment of General Education Courses (MATH 1050 and STAT 1040)

Beginning with Spring Semester 2004, the department has conducted an annual assessment of student performance in primary General Education courses (including MATH 1050 and STAT 1040). The performance of approximately 100 randomly selected students from each of MATH 1050 and STAT 1040 was evaluated by topic area on the common finals of these courses. Summary results will be available soon. The process will be repeated for Spring Semester 2005. Together, these two years of data will provide a baseline against which future groups of students will be compared. Weaknesses in topic learning will then be identified, and the Undergraduate Committee and course supervisors will provide feedback to instructors in an effort to bring overall student performance to target levels.

Assessment of Core Courses (MATH 1210, 1220, 2210, 2250, and STAT 1040, 2000, 3000)

Core content of these courses changes infrequently and is primarily addressed through the selection of textbooks at three-year to five-year intervals. Primary assessment of these courses is through semester evaluations and final examination scores and course grade profiles. Competency in these areas is essential for any student majoring in mathematics or statistics.

Assessment of Upper-division Major Courses

These courses are re-evaluated by subcommittees of the Undergraduate Committee in terms of: level and appropriateness of content relative to learning objectives, textbook selection, final examinations, course grades, and student evaluations. At two-year to five-year intervals, courses are redesigned if the subject matter develops beyond traditional norms, or if market demand indicates that an under-utilized course should be replaced by a course having greater demand (e.g., development of a new cryptography course).

Undergraduate Research Opportunities

Students interested in undergraduate research opportunities in the Department of Mathematics and Statistics at Utah State University should begin by contacting the assistant department head and undergraduate research liaison, Daniel C. Coster, (435) 797-2815, coster@math.usu.edu.

Several departmental faculty members have engaged in successful undergraduate research projects. These faculty members, along with their research areas, include: James Powell (mathematical modeling of pine beetle infestations), Ian Anderson (differential geometry applications to theoretical and applied physics), and Richard Cutler (computational statistics and analysis of microarray genetic data). In general, undergraduate research offers students an excellent opportunity to explore mathematical and statistical theory and practice under the guidance of an experienced researcher, to focus their own course selection on particular career paths and research areas (including graduate school), to co-author professional publications, and to actively make presentations at conferences or local seminars.

Department of Mathematics and Statistics

Graduate Programs

Admission Requirements

See the general admission requirements for graduate programs at Utah State University on pages 93-94 of this catalog. In general, students wishing to pursue graduate studies in mathematics or statistics should have a bachelor's degree in mathematics, statistics, or a closely related field, with extensive coursework in one of the departmental disciplines.

Students entering the Master of Mathematics (MMath) program must either possess a valid secondary school teaching license or be concurrently enrolled in a secondary school teacher licensure program.

Degree Programs

Master of Science (MS)
The department offers MS programs in mathematics and statistics. This degree is a terminal degree for most students, but is also a "stepping stone" for students who ultimately wish to pursue a doctorate in mathematics or statistics.

Master of Mathematics (MMath)
This program is designed specifically for secondary school teachers of mathematics. The purpose of this degree is to provide students with a broad background in mathematics.

Master of Science (MS) in Industrial Mathematics
The Industrial Mathematics master's degree is designed to broaden the learning experiences and job opportunities for master's students in mathematics. The program of study incorporates fundamental applied mathematics and interdisciplinary coursework in support of an industrial internship experience.

Doctor of Philosophy (PhD) in Mathematical Sciences
This is a terminal degree for mathematics and statistics researchers in academe, government, and industry, as well as for prospective college teachers.

Specializations for PhD in Mathematical Sciences

The **College Teaching Specialization** is designed to prepare students to teach undergraduate mathematics in two- and four-year colleges and in universities. This program is less specialized than the other two options. Students in the College Teaching specialization receive broad training in pure and applied mathematics. The dissertation for this specialization includes exposition of important mathematical theories and their historical relationships in an area of mathematics of the student's choosing.

The **Interdisciplinary Studies Specialization** offers advanced training in mathematics as a research tool. The mathematical component emphasizes areas of applied mathematics. In addition, the student receives graduate-level training in the chosen area of application. The student's course of study and research is directed both by scholars in mathematics and by scholars in the related discipline. The dissertation involves the development and application of mathematics in the context of research problems arising in the chosen interdisciplinary area.

The **Pure and Applied Mathematics Specialization** is a traditional doctoral program in mathematics, offering broad training in the foundations of modern mathematics together with specialized training in an area of mathematical research. The dissertation represents a significant contribution to mathematics research in the chosen area of specialization.

The **Statistics Specialization** offers broad training in theoretical and applied statistics for students seeking careers in academia, industry, or government. The dissertation represents a significant contribution to statistical research.

Course Requirements

Departmental requirements change from time to time. Check with the Department of Mathematics and Statistics for the list of requirements currently in effect. The requirements listed below are in effect for Fall Semester 2005.

Master of Science in Mathematics
This degree requires 30 credits of approved coursework at or above the 5000 level. At least 18 of these credits must be at the 6000 level or above, excluding MATH 6990 and 7990 (Continuing Graduate Advisement) and MATH 7910 (College Teaching Internship). Generally, most of the coursework will be in mathematics, but the student's supervisory committee may approve courses in statistics, physics, engineering, or any other discipline, if it seems such coursework is appropriate for the student's program of study.

The MS in mathematics has three options. The Plan A or the thesis option requires taking 6 credits of MATH 6970 (Thesis and Research) and working with a faculty member on a substantial research project. The research must be presented in a thesis, which must be approved by the student's supervisory committee and the dean of the School of Graduate Studies. An oral defense of the thesis must be arranged through the School of Graduate Studies.

The Plan B or project option requires taking 3 credits of MATH 6970 and working with a faculty member on a smaller research project. A written report of the research must be approved by the student's supervisory committee. An oral defense of the report must be scheduled through the School of Graduate Studies.

The third option of the MS in Mathematics requires only coursework, and is called the Plan C option.

All students in the MS program in Mathematics must pass a written qualifying examination covering the introductory analysis and advanced calculus material presented in MATH 4200, 5210, and 5220. Students may take this exam before beginning formal coursework in the MS program, and must take the exam at the end of the first full year of matriculation. The exam is typically given twice a year, in May and September. Matriculated students who fail on their first try must pass the exam at the next scheduled opportunity. A detailed exam syllabus is contained in the *Graduate Handbook*, available from the department.

Master of Science in Statistics
This degree requires 30 credits of approved coursework at or above the 5000 level. At least 18 credits must be at the 6000 level or above, excluding STAT 6990 and STAT 7990 (Continuing Graduate Advisement). All students must take STAT 6710 and 6720 (Mathematical Statistics I and II). Generally, most of the coursework will be in statistics, but the student's supervisory committee may approve

courses in mathematics, biology, economics, or any other discipline if it deems such coursework to be appropriate for the student's program of study.

The MS in statistics has Plan A (thesis), Plan B (report), and Plan C (coursework only) options. The Plan A and Plan B options require students to work with a faculty member on a research project, taking 6 or 3 credits of MATH 6970, respectively, and presenting the results of the research in a written report. For both the Plan A and Plan B options, the report must be approved by the student's supervisory committee. A Plan A report (thesis) must also be approved by the dean of the School of Graduate Studies. Both Plan A and Plan B reports require an oral defense that must be scheduled through the School of Graduate Studies.

Students in all three options of the MS in Statistics must pass a written qualifying examination based on the material presented in STAT 3000 (Statistics for Scientists), MATH 5710 (Introduction to Probability), and MATH 5720 (Introduction to Mathematical Statistics). Students may take the exam before beginning any formal coursework in the MS program. Students must attempt the exam by the end of the first full year of matriculation. The exam is usually given in May and September each year. Matriculated students who fail the exam on their first try must pass the exam at the next scheduled opportunity. A detailed exam syllabus is available in the *Graduate Handbook*, available from the department.

Master of Mathematics

This program requires at least 36 credits approved by the Graduate Committee within the Department of Mathematics and Statistics. At least 21 of these credits must come from mathematics classes numbered above 5000. MATH 4620 or an approved substitute must also be included. The GPA for the 36 credits and for the 21 math credits must be at least 3.0.

Master of Science in Industrial Mathematics

This degree requires 36 credits of coursework at or above the 5000 level. At least 15 of these credits must be completed in MATH courses at the 6000 level or above. Additionally, students must complete a total of 9 credits outside of Mathematics which complement their internship and final project. A maximum of 3 of these credits may be taken at the 5000-level (i.e., one 3-credit course in another department). See the departmental website or the *Graduate Handbook* for more detailed information about coursework requirements.

Students in the MS program in Industrial Mathematics are required to pass the Advanced Calculus examination (see the Master of Science in Mathematics examination requirements), *or* the Statistics qualifying examination (see the Master of Science in Statistics examination requirements), *or* an examination based on material presented in four core courses chosen by the student during the first year. The exam, which can be taken before or at the beginning of the student's second year in the program, is usually given in May or September. Students are also required to complete a final project based on work done during an internship, either with a company or possibly with another department on campus. The project will include a technical write-up suitable to the industry/field, and presentation to the involved faculty and students in the program. This follows the Plan B option listed for the Master of Science in Mathematics degree.

The Departmental Graduate Committee supervises all MS and MMath students until a supervisory committee for the student is established and approved. Prior to advancement to candidacy, students in Plan A and Plan B options for the MS degree in mathematics and statistics must pass an examination in English writing. This exam is administered by the Department of Mathematics and Statistics.

PhD in Mathematical Sciences

In all the doctoral specializations, a course of study consists of 90 credits beyond a bachelor's degree or 60 credits beyond a master's degree. The minimal course requirements described below assume that the student needs 90 credits. In all specializations, credit may be earned toward a master's degree, as part of the 42 required credits (see below), but coursework cannot be applied to two degrees. The complete course of study must be approved by the student's supervisory committee.

College Teaching Specialization

Seven course sequences (42 credits) in mathematics courses numbered 6000 and above, excluding MATH 7970 and including at least 6 credits in seminars and topics courses in mathematics at the 7000 level and 6 credits of MATH 7910 (College Teaching Internship), are required.

Interdisciplinary Studies Specialization

Forty-two (42) credits in courses numbered 6000 and above, excluding MATH 7970 and including at least four course sequences (24 credits) in mathematics, 6 credits in seminars and topics courses in mathematics or statistics at the 7000 level, and approved courses in the student's interdisciplinary area, are required.

Pure and Applied Mathematics Specialization

Seven course sequences (42 credits) in mathematics courses numbered 6000 and above, excluding MATH 7970 and including at least 6 credits in seminars and topics courses at the 7000 level, are required.

Statistics Specialization

Seven course sequences (42 credits) in mathematics or statistics in courses numbered 6000 and above, excluding MATH 7970 and STAT 7970 and including at least 6 credits in seminars and topics courses at the 7000 level, are required.

Common Degree Requirements

For all students in the **Pure and Applied Mathematics**, the **Interdisciplinary Studies**, and the **Statistics** specializations, a maximum of 30 credits of MATH 7970 (Dissertation Research) is allowed. Students in the **College Teaching** specialization are allowed a maximum of 20 credits of MATH 7970.

In addition to completing the coursework requirements, PhD students must:

1. Demonstrate competency in advanced calculus.

2. Pass a written PhD *qualifying* examination. For students in the **College Teaching** and **Pure and Applied Mathematics** specializations, the examination is on Real Analysis. For students in the **Statistics** specialization, the examination will be on Probability and Mathematical Statistics. Students in the **Interdisciplinary Studies** specialization may take the qualifying exam in Real Analysis or the exam in Probability and Mathematical Statistics, depending on the emphasis of their coursework within the Department of Mathematics and Statistics.

3. Pass a PhD comprehensive examination that is constructed by the student's committee. This examination may have written or oral components, or both, and may require a student to prepare and defend a report.

4. Successfully complete an examination in English writing skills. Often this exam will be the student's dissertation research proposal.

5. Complete a dissertation.

6. Pass a final oral examination defending the dissertation and demonstrating a general knowledge of core mathematics or statistics.

Research

Mathematics research opportunities within the department are many and varied, and students are urged to contact faculty about mutual interests at as early a stage as feasible. The interdisciplinary option permits and encourages study with a broad spectrum of outstanding nationally recognized University research programs.

Financial Assistance

The department offers full-time teaching assistantships, half-time paper-grading assistantships, research fellowships, and work-study assistance for students in all graduate degree programs. Stipends vary from $6,500 for a half-time paper-grading assistantship to $13,000 for teaching assistants pursuing a master's degree. Stipends for PhD students range from $14,000 for incoming students to $16,000 for students who have passed all required comprehensive examinations. Normally, a teaching assistant has responsibility for a single course each semester. Out-of-state tuition waivers are usually given with each full-time teaching or half-time paper-grading assistantship. All tuition is usually waived for PhD students. Applications for teaching assistantships should be mailed by March 1 of each year.

Mathematics and Statistics Faculty

Professors
Ian M. Anderson, differential geometry, global analysis
LeRoy B. Beasley, matrix theory, linear algebra, combinatorics
James S. Cangelosi, mathematics education
Lawrence O. Cannon, topology, mathematics education
Chris S. Coray, numerical analysis
D. Richard Cutler, statistics, computational fluid dynamics
E. Robert Heal, analysis, statistics, mathematics education
Lance L. Littlejohn, differential equations, special functions
James Powell, applied mathematics, mathematical biology
David H. Sattinger, differential equations
Russell C. Thompson, differential equations
Zhi-Qiang Wang, nonlinear differential equations, nonlinear analysis
Stanley C. Williams, measure theory, modern analysis

Professors Emeriti
Ronald V. Canfield, multivariate and industrial statistics
Duane Loveland, geometric topology, continuum theory
Jerry Ridenhour, differential equations
Donald V. Sisson, statistical methods, experimental design

Associate Professors
Daniel C. Coster, experimental design, linear models
Adele Cutler, statistical computing
Mark E. Fels, differential geometry
Joseph V. Koebbe, numerical analysis, applied mathematics
Piotr Kokoszka, probability and time series analysis
Michael C. Minnotte, nonparametric density estimation, statistical visualization
Xiaofeng Ren, partial differential equations, applied mathematics
Emily F. Stone, dynamical systems
Kathryn Turner, numerical analysis, optimization, linear algebra
Dariusz M. Wilczynski, geometric and algebraic topology

Associate Professors Emeriti
Wayne R. Rich, mathematics education
E. Eugene Underwood, matrix theory, linear algebra
James D. Watson, numerical analysis

Assistant Professors
David E. Brown, discrete mathematics, graph theory
Christopher D. Corcoran, computational biostatistics
Peggy J. Howland, numerical linear algebra
Brynja R. Kohler, mathematics education, mathematical biology
Juergen Symanzik, computational and graphical statistics
M. K. Stephen Yeung, dynamical systems, gene network structures

Principal Lecturer
David D. Bregenzer, mathematics, statistics

Senior Lecturer
Eric Rowley, mathematics, mathematics education

Lecturers
Bryan Bornholdt, mathematics, mathematics education
Claudia Mora, mathematics, mathematics education

Course Descriptions

Mathematics (MATH), pages 551-554

Statistics (STAT), pages 607-608

Department of Mechanical and Aerospace Engineering

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WWW: http://www.mae.usu.edu/

Undergraduate Advisor:
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Degrees offered: Bachelor of Science (BS), Master of Engineering (ME), Master of Science (MS), and Doctor of Philosophy (PhD) in Mechanical Engineering

Undergraduate Emphases: *Mechanical Engineering*—Aerospace Engineering, Computational Engineering, Manufacturing Engineering

Graduate specializations: Aerospace Engineering, Manufacturing Engineering, Mechanical Engineering

Undergraduate Programs

Mission

The Department of Mechanical and Aerospace Engineering provides graduates with a foundation of knowledge and experience upon which to build successful careers in mechanical, manufacturing, or aerospace engineering, or other fields where a strong engineering background is required or desirable. Undergraduate programs emphasize mechanical engineering fundamentals and computer-based problem solving, while teaching students to learn, synthesize, and communicate engineering information. Graduate programs emphasize fundamental and applied research, providing students with enhanced preparation for engineering practice, research, and education. Students, faculty, and staff are committed to excellence in learning, discovery, and engagement in an environment that fosters diversity and mutual respect.

Undergraduate Program Objectives (Mechanical Engineering)

1. Graduates will succeed in entry-level engineering positions with mechanical, manufacturing, or aerospace firms in regional, national, or international industries, as well as with government agencies.

2. Graduates will succeed in the pursuit of advanced degrees in engineering or other fields where a solid foundation in mathematics, science, and engineering fundamentals is required.

3. Graduates will be able to synthesize mathematics, science, engineering fundamentals, and laboratory and work-based experiences to formulate and solve engineering problems in both thermal and mechanical systems areas.

4. Graduates will have proficiency in computer-based engineering, including modern numerical methods, software design and development, and the use of computational tools.

5. Graduates will be prepared to communicate and work effectively on team-based engineering projects.

6. Graduates will recognize the importance of, and have the skills for, continued independent learning.

Undergraduate Program Outcomes (Mechanical Engineering)

Fundamentals
Students will identify, formulate, and solve basic engineering problems utilizing:

1. linear algebra
2. calculus-based statistics
3. multivariable calculus
4. differential equations
5. calculus-based physics
6. chemistry
7. material science
8. solid mechanics
9. fluid mechanics
10. thermal science
11. manufacturing science

Communication
Students will develop and demonstrate the ability to communicate engineering information, including geometry, technical concepts, and results, by:

1. participating in oral presentations.
2. writing proposals and reports.
3. developing engineering drawings and specifications.
4. participating in team-based engineering projects.

Laboratory Experiences
Students will participate in laboratory experiences, which:

1. include experimental design, data collection, and data analyses.
2. incorporate the use of modern laboratory and data acquisition equipment.
3. utilize statistical analysis and interpretation of data.
4. develop basic manufacturing skills.
5. may include work-based learning experiences, such as internships.

Computer-based Engineering
Students will demonstrate proficiency in the application of computer technology to engineering problem-solving through:

1. application of modern numerical methods and computational techniques.
2. design and development of engineering software.
3. integration of numerical solutions into the engineering process of design and analysis.
4. use of current commercial engineering software.

Humanities and Social Sciences
Students will acquire significant exposure to the humanities and social sciences, so as to:

1. gain an appreciation for the broad impact of engineering solutions on society.
2. demonstrate an understanding of the fundamentals of the history, principles, form of government, and economic system of the United States.
3. demonstrate a knowledge of contemporary global issues.
4. contribute to the development of the individual as a responsible well-rounded citizen.

Design and Synthesis
Students will participate in the design and realization process, in which they will:

1. develop a set of multidisciplinary engineering requirements.
2. synthesize material from mathematics, science, and engineering fundamentals to solve engineering problems.
3. design, develop, and verify software to solve engineering problems.
4. bring a system from requirements definition to concept development, then specification, prototype and testing, and production or fabrication using significant engineering analysis.
5. demonstrate the links between design, prototyping, testing, manufacturing, and other disciplines.
6. manage a project, including budgeting and detailed planning.

Independent Learning
Students will recognize the importance of, and demonstrate the skills required for, independent learning through:

1. independent study required in the engineering curriculum.
2. exposure to case studies in ethics and professional responsibility.
3. exposure to advanced topics in engineering science.
4. exposure to advanced topics in engineering research.
5. studying for and passing the Fundamentals of Engineering Examination.

Assessment and Quality Improvement

The MAE faculty and staff are committed to excellence and to continuous quality improvement. A responsive assessment and feedback process involving major constituencies, including faculty, students, alumni, and industrial employers of students and graduates, is in place and ongoing.

Options for Undergraduate Study

The **Mechanical Engineering** BS degree provides the broadest background of any discipline in the field of engineering. Mechanical Engineering graduates are prepared to pursue careers in such widely diverse industries as aerospace, agricultural equipment, automotive, biotechnical, chemical processing, composite materials, computer equipment, defense, electrical utilities, food processing, industrial equipment, manufacturing, materials processing, nuclear, petroleum, robotics, and solar energy. Most Mechanical Engineering graduates are prepared for graduate studies and enhanced career prospects in engineering or other areas, such as consulting, law, medicine, business management, or teaching. In addition, students who are preparing to apply for admission to medical school will find that Mechanical Engineering provides an excellent foundation for the increasingly technology-oriented field of medicine.

The **Aerospace Engineering** emphasis within the Mechanical Engineering BS degree serves to focus mechanical engineering fundamentals on the mechanics and dynamics of both flight within the atmosphere and space flight. Included within its scope are studies in aerodynamics, aircraft flight dynamics and control, aircraft design, spacecraft orbital mechanics, spacecraft attitude motion and control, and space systems design. Graduates who complete the aerospace engineering emphasis are prepared to pursue careers in aircraft design and development, aircraft flight testing, spacecraft and space systems design, and spacecraft trajectory design and analysis. As fully qualified Mechanical Engineers, graduates with the aerospace engineering emphasis are also well-prepared to pursue graduate studies or careers in the industries listed above under Mechanical Engineering.

The **Manufacturing Engineering** emphasis within the Mechanical Engineering BS degree prepares students to be proficient in the fundamentals of engineering, as well as in materials and manufacturing processes; process, assembly, and product engineering; manufacturing competitiveness; manufacturing systems design; and laboratory experience. Graduates will understand the behavior and properties of materials as they are altered and influenced by processing in manufacturing; the design of products and the equipment, tooling, and environment necessary for their manufacture; the creation of competitive advantage through manufacturing planning, strategy, and control; the analysis, synthesis, and control of manufacturing operations using statistical and calculus based methods; and how to measure manufacturing process variables and make technical inferences about the process. Graduates will have the necessary background to pass the Certified Manufacturing Technologist and Certified Manufacturing Engineer exams. Graduates who complete the Manufacturing Engineering emphasis are prepared to pursue graduate studies or careers in any industry that manufactures a product. For example, the aerospace, automotive, electronics, machine tool, petroleum, and electronics industries all employ manufacturing engineers as product designers, process designers and managers, maintenance engineers, and quality control engineers.

The **Computational Engineering** emphasis within the Mechanical Engineering BS degree prepares students to be proficient in the theory and fundamentals of engineering, as well as in advanced

simulation techniques and numerical methods. Computational engineering encompasses the design, development, and application of computational systems for the solution of physical problems in engineering and science. These computational systems include not only the algorithms and software required for the solution of mathematical equations describing physical processes, but also the means and methods of visualizing, analyzing, and interpreting computed results and other physical data. Computational engineering focuses on developing the student's readiness in solving problems of complex systems in engineering and technology by means of computational modeling, analysis, and simulations. Students graduating with this emphasis will also earn a minor in mathematics. Students who complete the computational engineering emphasis will be prepared to pursue careers in all fields of mechanical engineering, including design, simulation, and modeling, and will also be well-prepared to pursue graduate studies.

The first two years of the MAE curriculum are structured to concentrate on the fundamentals of mathematics, chemistry, physics, computer science, and basic engineering science. During the second two years, students apply these fundamentals to more concentrated courses in the essentials of mechanical, aerospace, and/or manufacturing engineering. Laboratory activities and computer usage are integrated throughout the curriculum to give students opportunities for hands-on exposure to modern computer hardware and software, as well as other modern hardware and laboratory facilities. Engineering design activities begin during the first two years and progress in depth as the student's proficiency increases. The engineering design experience culminates in a capstone senior design course, integrating the engineering coursework into a focused, realistic design project.

The Mechanical Engineering degree is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). The Aerospace Engineering emphasis, Computational Engineering emphasis, and Manufacturing Engineering emphasis are included within the Mechanical Engineering degree.

Admission and Graduation Requirements

Freshman and transfer students must satisfy the admission policies and entrance requirements of both the University and the College of Engineering. Each new student will be assigned an advisor, who will help plan an educational program fulfilling the student's professional goals. Placement of incoming students will depend on high school and/or prior college coursework. Those who complete a portion of the University Studies requirements by examination (CLEP) and/or by advanced placement (AP) credit may complete the requirements for a Bachelor of Science degree in less than four years.

Curriculum

At the beginning of each school year, each student should obtain a detailed, four-year requirement sheet. This sheet, which lists semester requirements for each of the four curricula (mechanical, computational, manufacturing, and aerospace), may be obtained from the departmental office. All students in the department follow the preprofessional engineering curriculum for the freshman and sophomore years. Prior to the junior year, the student must apply for admission to the professional program and, in consultation with the faculty mentor, select an area of emphasis. Students who are unable to take courses during the semester indicated on the curriculum requirement sheet may develop alternative schedules, consistent with prerequisites and the timing of course offerings.

GPA Requirement

A 2.3 GPA in all technical courses is the minimum standard which preprofessional students must attain in order to be considered for admission to any MAE professional program.

Course Requirements

The specific course requirements for the MAE preprofessional program and the MAE professional programs are quite extensive and may occasionally change. For these reasons, the complete requirements are not listed here. For more information, contact the department or send an Internet e-mail request to **joan.smith@usu.edu**.

A **passing grade on the Fundamentals of Engineering Exam**, the first step in becoming a licensed professional engineer, is required for graduation. Past experience has shown that the USU Mechanical and Aerospace Engineering students are well-prepared for this locally administered, national exam.

For additional information on academic requirements, see the College of Engineering (pages 111-113) and the Undergraduate Graduation Requirements (pages 55-58) sections of this catalog.

Pre-professional Program

The curriculum for the first two years is common for Aerospace, Computational, Mechanical, and Manufacturing students.

Required Coursework
Freshman Year (32 credits)
Fall Semester (15 credits)

MATH 1210 (QL)[2] Calculus I 4
CHEM 1210[2] Principles of Chemistry I 4
CHEM 1230[2] Chemical Principles Laboratory I 1
University Studies Breadth Courses 6

Spring Semester (17 credits)

MATH 1220 (QL)[2] Calculus II 4
PHYX 2200[2] Elements of Mechanics 2
MAE 1200[2] Engineering Graphics 2
MAE 2600[2] Manufacturing Processes 3
University Studies Breadth Courses 6

Sophomore Year (31 credits)
Fall Semester (16 credits)

MATH 2210 (QI)[2] Multivariable Calculus 3
ENGR 2000[2] Engineering Mechanics Statics 2
ECE 2200[2] Electrical Engineering for Nonmajors 4
ENGL 2010 (CL)[2] Intermediate Writing: Research Writing in a Persuasive Mode 3
PHYX 2220 (BPS/QI)[2] General Physics—Science and Engineering II . 4

Spring Semester (15 credits)

MATH 2250 (QI)[2] Linear Algebra and Differential Equations 4
MAE 2400[2] Thermodynamics I 3
ENGR 2020[2] Engineering Mechanics Dynamics 3
ENGR 2040[2] Strength of Materials 2
MAE 2060[2] Material Science 3

Professional Program in Mechanical Engineering

Junior Year (31 credits)
Fall Semester (17 credits)

MAE 2200 Engineering Numerical Methods I 2
MAE 3040 Mechanics of Solids 3
MAE 3320 Advanced Dynamics 3
MAE 3400 Thermodynamics II 3
MAE 3420 Fluid Mechanics 3
MATH 4700 Engineering Mathematics and Statistics 3

Spring Semester (14 credits)
MAE 2210 Engineering Numerical Methods II 3
MAE 3340 Instrumentation and Measurements 3
MAE 3440 (QI) Heat and Mass Transfer 3
MAE 3800 Design I 2
MAE 4300 Machine Design 3

Senior Year (31-32 credits)

Fall Semester (16-17 credits)
MAE 4400 (CI) Fluids/Thermal Laboratory 2
MAE 4800 (CI) Design II 3
MAE 5300 Vibrations 3
Technical Elective Course[1] 3
University Studies Depth Course (DHA) 2-3
University Studies Breadth Course 3

Spring Semester (15 credits)
Technical Elective Courses[1] 12
University Studies Depth Course (DSS) 3

[1]Students must select 15 credits of technical elective courses from the list of approved MAE Technical Elective Courses shown below.
[2]These courses are required for admission to the Professional Engineering Program (PEP).

Note: Elective courses, once selected and undertaken by a student, become part of the required program for that student.

The selection of elective courses needs to be given careful consideration. The preparation for a career in the broad field of mechanical and aerospace engineering and the selection of classes by real interest is more important than the maximization of the undergraduate grade point average.

MAE Technical Elective Courses
MAE 5020 Finite Element Methods in Solid Mechanics I (F) 3
MAE 5060 Mechanics of Composite Materials I (Sp) 3
MAE 5310 Dynamic Systems and Controls (F) 3
MAE 5410 Design and Optimization of Thermal Systems (F) 3
MAE 5420 Compressible Fluid Flow (Sp) 3
MAE 5440 Computational Fluid Dynamics (Sp) 3
MAE 5500 Aerodynamics (F) 3
MAE 5510 Dynamics of Atmospheric Flight (Sp) 3
MAE 5520 Elements of Space Flight (F) 3
MAE 5530 Space System Design (Sp) 3
MAE 5580 Aircraft Design (F) 3
MAE 5600 Manufacturing Process Planning and Statistical Quality Control (F) 3
MAE 5610 Hydraulics and Pneumatics (Sp) 3
MAE 5620 Manufacturing Automation (F) 3
MAE 5630 Machining Theory and Applications (Sp) 3
MAE 5640 Design for Manufacturability (F) 3
MAE 5650 Nontraditional and Additive Manufacturing Processes (Sp) 3
MAE 5660 Transport Phenomena in Manufacturing Processes (Sp) 3
MAE 5680 Manufacturing Planning and Simulation (Sp) 3
MAE 5900 Cooperative Practice (F,Sp,Su) 3
MAE 5930 ST: Kinematics (F) 1-3
ECE 3710 Microcomputer Hardware and Software (F,Sp) 4
ECE 5230 Spacecraft Systems Engineering (F) 3
ECE 5310 Control Systems (F) 3
ECE 5320 Mechatronics (Sp) 4
ENGR 5500 High Performance Computing for Engineers (F) 3
MHR 5350 Contemporary Manufacturing Management (F) 3

Students may choose *one* of their technical electives from the following courses:
MATH 4630 Computer Aided Math for Scientists and Engineers (Sp) .. 3
MATH 5270 Complex Variables (Sp) 3
MATH 5410 Methods of Applied Mathematics (F) 3
MATH 5420 Partial Differential Equations (Sp) 3
MATH 5620 Numerical Solution of Differential Equations (Sp) 3
MATH 5640 Optimization (Sp) 3
STAT 5200 Design of Experiments (Sp) 3
STAT 5300 (QI) Statistical Process Control (Sp) 3
Special Problems courses under MAE 5930 may be used as technical electives with prior approval.

Professional Program in Aerospace Engineering

In addition to completing the pre-professional program, students who choose to graduate with the Aerospace Engineering emphasis must complete the following courses as their elective selection.

Junior Year (31 credits)

Fall Semester (17 credits)
MAE 2200 Engineering Numerical Methods I 2
MAE 3040 Mechanics of Solids 3
MAE 3320 Advanced Dynamics 3
MAE 3400 Thermodynamics II 3
MAE 3420 Fluid Mechanics 3
MATH 4700 Engineering Mathematics and Statistics 3

Spring Semester (14 credits)
MAE 2210 Engineering Numerical Methods II 3
MAE 3340 Instrumentation and Measurements 3
MAE 3440 (QI) Heat and Mass Transfer 3
MAE 3800 Design I 2
MAE 4300 Machine Design 3

Senior Year (31-32 credits)

Fall Semester (17 credits)
MAE 4400 (CI) Fluids/Thermal Laboratory 2
MAE 5300 Vibrations 3
MAE 5500 Aerodynamics 3
MAE 5520 Elements of Space Flight 3
Aerospace Technical Course[3] 3
University Studies Breadth Course 3

Spring Semester (14-15 credits)
MAE 4800 (CI) Design II 3
Aerospace Technical Courses[3] 6
University Studies Depth Courses (DHA and DSS) 5-6

[3]During their senior year, Aerospace Engineering students must take one of the following classes: MAE 5020, 5060, or 5440; and two of the following classes: MAE 5510, 5530, 5580, or 5930 (ST: Kinematics–Moonbuggy).

Professional Program in Manufacturing Engineering

In addition to completing the pre-professional program, students who choose to graduate with the Manufacturing Engineering emphasis must complete the following courses as their elective selection.

Junior Year (31 credits)

Fall Semester (17 credits)
MAE 2200 Engineering Numerical Methods I 2
MAE 3040 Mechanics of Solids 3
MAE 3320 Advanced Dynamics 3
MAE 3400 Thermodynamics II 3
MAE 3420 Fluid Mechanics 3
MATH 4700 Engineering Mathematics and Statistics 3

Spring Semester (14 credits)
MAE 2210 Engineering Numerical Methods II 3
MAE 3340 Instrumentation and Measurements 3
MAE 3440 (QI) Heat and Mass Transfer 3

MAE 3800 Design I 2
MAE 4300 Machine Design 3

Senior Year (31-32 credits)
MAE 4400 (CI) Fluids/Thermal Laboratory (F) 2
MAE 4800 (CI) Design II (F,Sp) 3
MAE 5300 Vibrations (F) 3
Manufacturing Technical Electives 15
University Studies Breadth Course 3
University Studies Depth Courses (DHA and DSS) 5-6

Manufacturing Engineering Approved Technical Elective Courses
Students must choose five courses from the following list:
MAE 5020 Finite Element Methods in Solid Mechanics I (F) 3
MAE 5310 Dynamic Systems and Controls (F) (3 cr) **or**
MAE 5620 Manufacturing Automation (F) (3 cr) 3
MAE 5600 Manufacturing Process Planning and Statistical Quality Control (F) (3 cr) **or**
STAT 5300 (QI) Statistical Process Control (Sp) (3 cr) 3
MAE 5630 Machining Theory and Applications (Sp) 3
MAE 5640 Design for Manufacturability (F) 3
MAE 5650 Nontraditional and Additive Manufacturing Processes (Sp) 3
MAE 5660 Transport Phenomena in Manufacturing Processes (Sp) 3
MAE 5680 Manufacturing Planning and Simulation (Sp) 3
MHR 5350 Contemporary Manufacturing Management (F) 3
STAT 5200 Design of Experiments (Sp) 3

Computational Engineering Emphasis
In addition to completing the pre-professional program, students who choose to graduate with the Computational Engineering emphasis must complete the following courses as their elective selection.

Junior Year (31 credits)
Fall Semester (17 credits)
MAE 2200 Engineering Numerical Methods I 2
MAE 3040 Mechanics of Solids 3
MAE 3320 Advanced Dynamics 3
MAE 3400 Thermodynamics II 3
MAE 3420 Fluid Mechanics 3
MATH 4700 Engineering Mathematics and Statistics 3

Spring Semester (14 credits)
MAE 2210 Engineering Numerical Methods II 3
MAE 3340 Instrumentation and Measurements 3
MAE 3440 (QI) Heat and Mass Transfer 3
MAE 3800 Design I 2
MAE 4300 Machine Design 3

Senior Year (34-35 credits)
Fall Semester (17 credits)
MAE 4400 (CI) Fluids/Thermal Laboratory 2
MAE 5020 Finite Element Methods in Solid Mechanics I 3
MAE 5300 Vibrations 3
ENGR 5500 High Performance Computing for Engineers 3
University Studies Breadth Course 3
University Studies Depth Course (DSS) 3

Spring Semester (17-18 credits)
MAE 4800 (CI) Design II 3
MAE 5440 Computational Fluid Dynamics 3
MATH 5620[4] Numerical Solutions of Differential Equations 3
MAE Technical Elective Course 3
University Studies Breadth Course 3
University Studies Depth Course (DHA) 2-3

[4]MATH 5620 fulfills the requirement for a Math Minor.

Financial Support

Scholarships, assistantships, grants-in-aid, and work-study programs are available to undergraduate students through the University. In addition, the MAE department employs undergraduates to assist in engineering research and development. Aerodynamics, design of instrumentation and payloads for the upper atmosphere and space, buried structures, and manufacturing processes and controls are some of the research programs that involve undergraduate students. Cooperative education and industrial employment opportunities for students are coordinated by the University Placement Office.

Concurrent BS/Master's Program

The concurrent BS/Master's program allows engineering students to begin taking graduate-level classes during their senior year. This permits them to complete requirements for *both* the BS degree *and* the master's degree concurrently during two years. Students in this program have a greater selection of graduate courses, since many graduate courses are taught during alternate years. In addition, the student's senior design project could be a start for a graduate design project or thesis. After completing their BS degree, students in the program can earn a master's degree in only one additional year. Both the BS and the master's degree can generally be earned with 150 total credits, although students should note that a Plan C MS requires 3 extra credits. Finally, students with a master's degree can expect a much higher starting salary following graduation. (For more information, see *College of Engineering* section of this catalog, pages 113-114.)

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information

For more information about Bachelor of Science requirements and the sequence in which courses should be taken, see major requirement sheet, available from the Mechanical and Aerospace Engineering Department, or online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Admission Requirements

All students intending to pursue graduate studies at Utah State University must complete and return an *Application for Admission* to the School of Graduate Studies. In addition to the general graduate admission requirements listed on pages 93-94, the department requires all graduate applicants to have a bachelor's degree from an accredited institution in Mechanical Engineering, Aerospace Engineering, Manufacturing Engineering, or a closely related engineering discipline. A minimum GPA of 3.0 for MS applicants and 3.3 for PhD applicants is required for the last 60 semester or 90 quarter credits earned. All MAE graduate students are expected to be well-acquainted with either the FORTRAN or C programming language. Those students who do not have a BS degree in an appropriate engineering discipline may be admitted with nonmatriculated status and required to complete some remedial requirements. Applicants are also required to submit evidence of potential graduate-level success through GRE scores in the verbal, quantitative, and analytical categories.

Specializations

The Department of Mechanical and Aerospace Engineering offers ME, MS, and PhD degrees in Mechanical Engineering, with specializations in Aerospace Engineering, Manufacturing Engineering, and Mechanical Engineering.

Aerospace Engineering addresses atmospheric and space flight. Included are such disciplines as computational fluid dynamics, experimental fluid mechanics, aerodynamics, aircraft flight dynamics, aircraft design, spacecraft orbital mechanics, spacecraft attitude motion and control, aircraft and spacecraft propulsion systems, space system design, thermal management of space deployed systems, and the space environment. Mechanical Engineering graduates choosing the aerospace engineering specialization may pursue careers in such areas as aircraft design and development, aircraft flight testing, spacecraft and space systems design, and spacecraft trajectory design and analysis, as well as the broader, traditional mechanical engineering fields.

Manufacturing Engineering concentrates on the theory of manufacturing systems, including manufacturing processes, the design of manufacturing systems, product design, productivity, quality, and life cycle analysis. Principal areas of emphasis include manufacturing automation, machining theory, and mold flow analysis, as well as flexible manufacturing systems and computer-integrated manufacturing. Manufacturing engineers are prepared to pursue product and process design careers in any electronics, food processing, and petroleum industries.

Mechanical Engineering deals with the creation of the mechanical systems and machines that serve society. Areas of emphasis include solid mechanics, thermal/fluids, and dynamics and control. The **solid mechanics** emphasis is concerned with the mechanics of displacement and stress analysis combined with material science for selection of an optimum design. Students learn to use the finite element method as well as classical methods for the determination of stresses, strains, and displacements. Included are studies of elasticity, plasticity, and failure in traditional metals and high-tech composite materials. The **thermal/fluids** emphasis is concerned with the transport of mass, momentum, and energy in solids, liquids, and gasses. Included within its scope are the fundamental studies of thermodynamics, heat transfer, and fluid mechanics. The **dynamics and control** emphasis is concerned with describing and controlling the motion of mechanical systems. Included within its scope are the fundamental studies of dynamics, kinematics, vibrations, control theory, hydraulics and pneumatics, electromechanical systems, and machine design. Graduates who select the broad mechanical engineering specialization are prepared to pursue careers in such widely diverse disciplines as aerospace, automotive, building, chemical, defense, electronics, environmental engineering, food processing, heating and air conditioning, heavy equipment, machine tools, manufacturing, nuclear, petroleum, public utilities, and solar energy.

Degree Programs

The **Plan A MS** Degree requires 6 credits of graduate-level coursework in Mechanical Engineering fundamentals; 12 credits of 6000-level (or above) engineering coursework, exclusive of MAE 6930, 6950, 6970, and 6990; a minimum of 3 credits of 5000-level (or above) coursework in approved mathematics; and 9 credits selected from any one of five declared areas of emphasis. A minimum of 30 credits is required beyond the BS, including a 6-credit thesis (MAE 6970). The thesis must meet School of Graduate Studies requirements.

The **Plan B MS** Degree requires 6 credits of graduate-level coursework in Mechanical Engineering fundamentals; 12 credits of 6000-level (or above) engineering coursework, exclusive of MAE 6930, 6950, 6970, and 6990; a minimum of 3 credits of 5000-level (or above) coursework in approved mathematics; and either 12 credits selected from any one of five declared areas of emphasis or 15 credits selected from any two of the areas. A minimum of 30 credits is required beyond the BS, which includes a 3-credit report written to thesis standards.

The **Plan C MS** Degree requires 6 credits of graduate-level coursework in Mechanical Engineering fundamentals; 18 credits of 6000-level (or above) engineering coursework, exclusive of MAE 6930, 6950, 6970, and 6990; a minimum of 3 credits of 5000-level (or above) coursework in approved mathematics; and either 12 credits selected from any one of five declared areas of emphasis, or 15 credits selected from any two of the areas. A minimum of 33 credits is required beyond the BS, which may not include a thesis (MAE 6970), but may include up to 3 credits of Design Project (MAE 6950). MAE 6950 requires a report written to thesis standards.

The **Master of Engineering Degree** requires 15 credits of 6000-level (or above) engineering coursework exclusive of MAE 6930, 6950, 6970, 6990, 7930, 7970, and 7990; a minimum of 3 credits of 5000-level (or above) coursework in approved mathematics; and either 15 credits selected from Group A or at least 9 credits from Group A and the remainder chosen from Group B. (Contact Joan Smith at joan.smith@usu.edu for requirement details.) A minimum of 30 credits is required beyond the BS, which may not include a thesis (MAE 6970), but may include up to three credits of Design Project (MAE 6950). MAE 6950 requires a report written to thesis standards. Students are not required to defend the report. However, the report must be approved by the major professor.

The **PhD Degree** requires 24 credits of 6000-level (or above) engineering coursework, exclusive of MAE 6930, 6950, 6970, 6990, 7930, 7970, and 7990; a minimum of 6 credits of 5000-level (or above) coursework in approved mathematics; and 18 credits selected from any one of five declared areas of emphasis. A minimum of 90 credits is required beyond the BS, including a dissertation (MAE 7970). The dissertation must meet School of Graduate Studies requirements and be at least 24 credits, but no more than 39 credits. A Qualifying Exam

is required and must be passed before completing 18 credits at the PhD level. A paper with the student as author or coauthor, submitted for publication in a refereed journal, is also required.

GPA Requirement

A 3.0 GPA is the minimum acceptable for an ME or MS degree from USU. A PhD degree from USU requires a minimum GPA of 3.3.

Course Requirements

The specific course requirements for the ME, MS, and PhD degrees offered through the department may occasionally change. For this reason, prospective students are advised to seek current details concerning graduate degree requirements and program coursework by contacting the department or sending an Internet e-mail request to: **joan.smith@usu.edu**.

Research

The Department of Mechanical and Aerospace Engineering is conducting research in all three of the areas of specialization listed above. Departmental research projects are funded by both government agencies and private industry. Current research topics include analytical and experimental structural dynamics, computational and experimental fluid dynamics, aerodynamics, plastics and composite materials, numerical modeling and design of composite structures, buried structures, thermodynamics, heat transfer, cryogenics, intelligent control systems, manufacturing automation, spacecraft control, design and analysis of space systems, orbital mechanics, remote sensing, robotics, design theory and methodology, and production modeling and simulation.

Financial Assistance

A number of teaching and research assistantships are available to graduate students through the department, and are awarded on a competitive basis each year. In addition, scholarships covering the nonresident portion of tuition are available each semester, on a competitive basis, to nonresident students who hold a graduate assistantship paying at least $250 per month. Students interested in working part time as teaching or research assistants should apply to the department by March 31 for the coming academic year.

Acceptance to pursue graduate studies in the Department of Mechanical and Aerospace Engineering does not imply a commitment to any type of financial aid. All awards for financial aid are made on a competitive basis after applicants are admitted to graduate school. All students who receive any type of financial support from the University or who are supplied University space for study or research must carry a minimum of 9 credits of approved coursework for an MS or ME degree or a minimum of 12 credits of approved coursework for a PhD degree each semester while receiving such support.

Mechanical and Aerospace Engineering Faculty

Professors
Alma P. Moser, engineering mechanics, piping systems
Warren F. Phillips, aerodynamics, flight mechanics
Robert E. Spall, thermal/fluids, CFD, computational
Byard D. Wood, solar energy for heating and cooling, heat and mass transfer

Trustee Professor Emeritus
J. Clair Batty, thermal science, cryogenics, space systems

Professors Emeriti
P. Thomas Blotter, structural dynamics
Ralph H. Haycock, mechanics, manufacturing
Russell M. Holdredge, heat transfer, fluid mechanics
Owen K. Shupe, nuclear, material science
Carl D. Spear, material science
Edward W. Vendell, Jr., cryogenics, heat transfer, thermal systems design

Associate Professors
Steven L. Folkman, applied mechanics, structural dynamics, space structures
Thomas H. Fronk, mechanics of composites and materials
R. Rees Fullmer, manufacturing, controls, robotics, dynamics, spacecraft

Assistant Professors
Ning Fang, manufacturing
David K. Geller, spacecraft guidance and navigation
Thomas Hauser, computational fluid dynamics, thermal/fluids, numerical methods
Leijun Li, manufacturing
Todd J. Mosher, space engineering
Barton L. Smith, thermal/fluids
Brent E. Stucker, advanced manufacturing and materials
Stephen A. Whitmore, high-speed aerodynamics
Wenbin Yu, advanced structures, solid mechanics, computational solid mechanics (FEM)

Adjunct Assistant Professors
Scott M. Jensen, thermal management of space systems
Paul J. Mueller, thermal science, propulsion
Steven R. Wassom, controls, dynamic spaceflight

Principal Lecturer
Carl G. Wood, design, manufacturing

Adjunct Lecturer
Angie Minichiello, thermal/fluids

Course Descriptions

Mechanical and Aerospace Engineering (MAE), pages 554-557

Department of Military Science

Department Head: Lt. Colonel S. Rand Curtis
Location: Military Science 106
Phone: (435) 797-3637
FAX: (435) 797-3330
E-mail: armyrotc@hass.usu.edu
WWW: http://armyrotc.usu.edu

Undergraduate Programs

Objectives

Military Science (Army ROTC) focuses on leadership development. Students pursue the major of their choice while studying Military Science, and graduate with the ability to function effectively as leaders. Upon completion of Army ROTC and graduation from college, students become commissioned officers in the active Army, Army Reserve, or National Guard.

Instructors, textbooks, uniforms, and equipment are provided at no cost to the student or the University. All contracted students receive between $250-400 per month (up to 10 months per academic year). Army ROTC also covers the cost of tuition and fees for Army ROTC scholarship students and provides a $800-per-year book allowance.

The Margin of Difference

Army ROTC cadets learn to be leaders and receive hands-on experience in managing physical, financial, and human resources. They develop self-confidence and superior decision-making skills. Employers value these leadership qualities and recognize associated potential.

Four-Year Program

The traditional Army ROTC program covers four years consistent with normal undergraduate progression (freshman-senior). The four-year program is divided into two parts: the **basic course** and the **advanced course**. The **basic course** is usually taken during the first two years of college. It covers subjects such as mountaineering, land navigation, wilderness survival, leadership development, small unit tactics, weapons marksmanship, and military history. This program is designed for high-performing students who wish to try Military Science without obligation, while enhancing their leadership skills and self-confidence. Upon successful completion of the basic course, students are eligible to enter the advanced course.

Advanced course requirements are normally completed during the junior and senior years. The advanced course further develops and refines leadership competencies, and qualifies the student for a commission in the United States Army. Advanced course students receive a $350-400 per month tax-free subsistence allowance (up to $3,000-4,000 per year), and attend a paid five-week leader development course between their junior and senior years.

Two-Year Program

This is a special program for junior and community college transfer students or for students who did not take Army ROTC during their first two years of college. To enter the two-year program, a student must have completed Basic Training in a military service or participate in five weeks of basic leadership instruction. This instruction usually takes place between the sophomore and junior year. Students are paid for attending this instruction, have the opportunity to compete for two-year scholarships, and may receive academic credit. Students who qualify for the two-year program are enrolled directly in the advanced course.

Course Requirements for Military Science Programs

Basic Course Requirements (8 credits)

MS 1010 Introduction to Leadership 2
MS 1020 Leadership Skills 2
MS 2010 Leadership Development 2
MS 2020 Small Unit Leadership 2

Advanced Course Requirements (16 credits)

MS 2400 Physical Readiness
(repeatable; take during four semesters) 4
MS 3010 Organizational Leadership and Small Unit Tactics 3
MS 3020 Advanced Tactics and Operations 3
MS 4010 Command and Staff Functions 3
MS 4020 Officer Perspectives 3

Scholarships

Army ROTC provides numerous scholarship opportunities. High school seniors may qualify for the **four-year Army ROTC scholarship**. College students may qualify for three- or two-year scholarships. These scholarships pay the cost of tuition and fees, a flat rate for textbooks and classroom supplies, and a monthly cash stipend between $2,500-4,000 per year. The **Green to Gold scholarship** allows soldiers serving on active duty to leave the Army early and attend college/ROTC full time while receiving scholarship benefits. Other scholarship opportunities include: **room and book grants** and the **Western Undergraduate Exchange (WUE)** program. Call or visit the Department of Military Science for details.

Placement Credit For Veterans

Veterans may qualify for advanced course placement based on prior military experience. They can take full advantage of veteran's benefits and receive financial aid from Army ROTC concurrently.

Simultaneous Membership Program (SMP)

This program is available to advanced course cadets who wish to serve in the Army Reserve or National Guard while attending college and pursuing a commission through Army ROTC. SMP students are eligible to receive reserve drill pay, tuition assistance, other monetary incentives, and $350-400 per month (up to $3,000–4,000 per academic year) from Army ROTC. Call or visit the Department of Military Science for details.

Leave of Absence

If students (including scholarship recipients) wish to take a leave of absence to serve a mission for their church, they can do so conveniently between their freshman and sophomore years.

Commission Requirements

In order to qualify for a commission as a Second Lieutenant in the United States Army, each student must:

1. Complete all required Military Science instruction while attending college as a full-time student, and obtain a baccalaureate or higher degree prior to age 27 (age waiver can be granted for prior military service or other extenuating circumstances).

2. Meet medical and physical fitness standards.

3. Be a U.S. citizen.

4. Successfully complete the advanced summer camp.

5. Be recommended by the Professor of Military Science.

Service Obligation

There is no military service obligation for basic course students, unless they have received an Army ROTC scholarship. Advanced course (contracted) and scholarship students incur an obligation to serve in the active Army, Army Reserve, or National Guard.

Minor in Military Science

Grade Requirements

Students must obtain a grade of *C* or better in all courses used toward the minor, as well as maintain a cumulative GPA of 2.5 for these courses.

Credit Requirements

A minimum of 21 credits must be earned in Military Science and related courses, as follows:

Course Requirements for Military Science Minor (21 credits)

MS 3010 Organizational Leadership and Small Unit Tactics.....3
MS 3020 Advanced Tactics and Operations.....3
MS 4010 Command and Staff Functions.....3
MS 4020 Officer Perspectives.....3
HIST 4810 American Military History (3 cr) **or**
MS 4610 Military History Seminar (3 cr).....3
Electives (must be approved by department head).....6

Elective Course Offerings

MS 2420 Ranger Preparation.....2
MS 2430 Air Assault.....2
MS 2440 Airborne Operations.....2
MS 2510 ROTC Basic Camp.....1-6
MS 3110 Staff Organization and Operations.....1-3
MS 3210 Independent Study.....1-3
MS 4110 Advanced Staff Operations.....1-3
MS 4400 Advanced Physical Readiness.....1
MS 4510 ROTC Advanced Camp.....1-10
MS 4520 Cadet Troop Leadership Training.....2
MS 4610 Military History Seminar.....1-3

Additional Information

For more detailed information about course requirements for Military Science programs, as well as information about career opportunities, see the major requirement sheet, which is available from the Military Science Department, or online at:
http://www.usu.edu/ats/majorsheets/

Military Science Faculty

Assistant Professor
Captain Reece D. Roberts

Personnel Specialist
Marie Behling

Instructors
Sergeant First Class Scott Womack
Sergeant First Class LaWrell D. Cook

Course Descriptions

Military Science (MS), pages 557-558

Department of Music

Department Head: Bruce M. Saperston
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WWW: http://www.usu.edu/music/

Assistant Department Heads:
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Undergradute Advisors:
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Music Education/Instrumental:
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Percussion:
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Organ:
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Piano:
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R. Dennis Hirst, Fine Arts 101, (435) 797-3257, dennis.hirst@usu.edu

Ralph H. van der Beek, Fine Arts 203, (435) 797-3033, rvanderbeek@cc.usu.edu

Strings:
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Violin:
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Rebecca J. McFaul, University Reserve 21, (435) 797-3052, rebeccamcfaul@hass.usu.edu

Viola:
Russell Fallstad, University Reserve 21, (435) 797-3092, russellfallstad@hass.usu.edu

Cello/String Bass:
Anne Francis, Fine Arts Visual 129, (435) 797-3086, afrancis@hass.usu.edu

Woodwinds:
Nicholas E. Morrison, Fine Arts 103, (435) 797-3506, nicholas.morrison@usu.edu

Voice:
Cindy J. Dewey, Fine Arts 208B, (435) 797-3055, cdewey@hass.usu.edu

Music (Undecided):
Bruce M. Saperston, Fine Arts 107, (435) 797-3036, bsaperston@hass.usu.edu

Degrees offered: Bachelor of Arts (BA) and Bachelor of Music (BM) in Music; Bachelor of Science (BS) and BA in Music Therapy

Undergraduate emphases: *BM degree in Music*—Music Education, Performance, Piano Pedagogy

Two-year Certificate Programs: Piano, Organ, Guitar, Music Therapy Equivalency

Two-year Diploma Programs: Organ and Church Music, Piano Pedagogy, Guitar

(Certificates and diplomas are issued *directly* through the Music Department.)

Undergraduate Programs

Objectives

The Department of Music provides instruction in music by: (1) offering service courses which contribute to the Liberal Arts and Sciences major in the College of Humanities, Arts and Social Sciences and the College of Science, and to the University Studies Program of the University; (2) offering specific sequences of courses leading to professional preparation in music education, music therapy, and performance/pedagogy; and (3) providing public musical service to the University and the community.

The specific objectives of the programs in music for the music major are fourfold: (1) to prepare licensed music teachers to serve effectively in elementary and secondary schools; (2) to prepare musically talented students for careers as professional performers and/or studio teachers; (3) to prepare board-certified music therapists to serve in educational and therapeutic settings; and (4) to prepare music students for graduate study in their areas of specialization.

Requirements

Admission Requirements

Admission requirements for the Department of Music include those described for the University in this catalog (see pages 16-19). In addition, transfer students must have a minimum 3.00 GPA in music courses and a minimum 2.75 GPA overall. All students interested in majoring in Music or Music Therapy will be given pre-music major status until they have completed the required audition/interview process, as verified by their area advisor through the *Change of Major Form*. It is strongly recommended that prospective majors complete their audition/interview during the department's scholarship auditions in February preceding matriculation at USU. To schedule an audition/interview, contact the department at (435) 797-3015.

Prospective majors in Music Therapy should complete the audition/ interview prior to May 1 of the year of admission.

GPA Requirement

Students majoring in music, music education, or music therapy must maintain a minimum GPA of 3.00 in music courses and a minimum 2.75 GPA overall. All core curriculum classes must be completed with a *C-* or higher in order to progress to the next courses in sequence. A student receiving a grade lower than *C-* is placed on probation, and may repeat the course once to raise the grade to *C-* or higher. If the grade received on the repeat is lower than *C-*, the student is no longer a music, music education, or music therapy major.

Music Core Curriculum Requirements (34 credits)

All majors in the department must complete the music core curriculum. Although it is possible to complete the degree if these courses are begun after the first year of study, the department strongly recommends that students begin the core curriculum during the first year, completing the courses in the following recommended sequence.

Freshman Year

Fall Semester

MUSC 1110 Music Theory I....3
MUSC 1130 Aural Skills I....1
MUSC 1150[1] Keyboard Harmony I....1

Spring Semester

MUSC 1120 Music Theory II....3
MUSC 1140 Aural Skills II....1
MUSC 1160[1] Keyboard Harmony II....1

Sophomore Year

Fall Semester

MUSC 2130 Music Theory III....3
MUSC 2150 Aural Skills III....1
MUSC 2170 Keyboard Harmony III....1
MUSC 2180 Computer Applications in Music....2

Spring Semester

MUSC 2160[2] Aural Skills IV....1
MUSC 3110 Music History I: Origins through Baroque....3
MUSC 3140 Musical Form and Analysis....3

Junior Year:

Fall Semester

MUSC 3120 Music History II: Classical and Romantic Periods....3
MUSC 3170 Conducting....2

Spring Semester

MUSC 3130 (CI) Music History III/Theory IV: The Twentieth Century..3
MUSC 3180[3] Scoring and Arranging....2

Students should note that MUSC 2180, 3170, and 3180 may be taken during different semesters, if necessary. Also, since MUSC 2160 is *not required* for all music areas, students should contact their advisor to determine whether or not they should enroll in this course. Additional requirements for specific emphasis areas are available from the Music Department Student Services Office, Fine Arts 102.

[1]MUSC 1150 and 1160 are *not required* for the Music Education (General) Emphasis, nor for the Guitar Performance Emphasis.
[2]MUSC 2160 is *not required* for the Composite Major in Music Education, nor for the Guitar Performance Emphasis or the Wind/Brass/Percussion Performance Emphasis.
[3]MUSC 3180 is *not required* for the Vocal Performance Emphasis.

Bachelor of Music Degree Composite Major in Music Education

Music majors must maintain a minimum GPA of 3.0 in Music courses. A grade of *C-* or better must be earned in all core and emphasis classes. A 2.75 cumulative GPA is required for graduation. Additional requirements, such as piano proficiency, concert attendance, etc., are stipulated in the Department of Music's *Student Handbook*.

Emphasis Area

Students must select one area of emphasis and complete the required coursework for that emphasis. The student's transcript will show the area of emphasis selected by the student from those listed below. Please note that all music majors are required to participate in major departmental ensemble organizations each semester. The student and an advisor will determine the organizations in which the student will participate.

Music Education (Band) (44-49 credits)

MUSC 1500 String Techniques I (F,Sp)....1
MUSC 1600 Voice Techniques (F,Sp)....1
MUSC 1800 Percussion Techniques (F)....1
MUSC 2600 Women's Choir (F,Sp) (1 cr) **or**
MUSC 4600 University Chorale (F,Sp) (1 cr)....1
MUSC 2700 Woodwind Techniques I: Flute, Clarinet (F)....1
MUSC 2710 Woodwind Techniques II: Saxophone, Oboe, Bassoon (Sp)....1
MUSC 2720 Marching Band (4 semesters) (2 cr, repeatable) (F)....8
MUSC 2800 Brass Techniques I: Trumpet, French Horn (F)....1
MUSC 2810 Brass Techniques II: Trombone, Tuba, Euphonium (Sp)..1
MUSC 3100 Motivation and Classroom Management Strategies in Secondary Classroom Music (Sp)....3
MUSC 3220 Choral Methods and Materials (F)....2
MUSC 3240 Instrumental Methods and Materials (Sp)....2
MUSC 3790 Symphonic Band (F,Sp) (1 cr, repeatable) **or**
MUSC 4700 Wind Orchestra (F,Sp) (1 cr, repeatable)....7
MUSC 3900 Jazz Improvisation (F,Sp)....2
MUSC 4240 Advanced Conducting (F)....2
MUSC 4920 Individual Recital (F,Sp,Su)....1-6

Small Ensembles (2 credits)
Select 2 credits from the following:
MUSC 2740 Recorder Techniques (Sp)....1
MUSC 3700 Woodwind Ensemble (F,Sp)....1-2
MUSC 3780 Flute Ensemble (F,Sp)....1
MUSC 3800 Trombone Ensemble (F,Sp)....1
MUSC 3850 Brass Ensemble (F,Sp)....1
MUSC 3870 Percussion Ensemble (F,Sp)....1

Individual Instruction (7 credits)
Students should complete 7 credits from the following on their major instrument.
MUSC 3710 Individual Flute Instr for Music Majors (F,Sp,Su)....1-2
MUSC 3720 Individual Oboe Instr for Music Majors (F,Sp,Su)....1-2
MUSC 3730 Individual Clarinet Instr for Music Majors (F,Sp,Su)....1-2
MUSC 3740 Individual Bassoon Instr for Music Majors (F,Sp,Su)....1-2
MUSC 3750 Individual Saxophone Instr for Music Majors (F,Sp,Su)..1-2
MUSC 3810 Individual Trumpet Instr for Music Majors (F,Sp)....1-2
MUSC 3820 Individual Trombone Instr for Music Majors (F,Sp)....1-2
MUSC 3830 Individual French Horn Instr for Music Majors (F,Sp)....1-2
MUSC 3840 Individual Tuba/Euphonium Instr for Music Majors (F,Sp)....1-2
MUSC 3860 Individual Percussion Instr for Music Majors (F,Sp,Su)..1-2

Music Education (Orchestra) (39-44 credits)

MUSC 1500 String Techniques I (F,Sp)....1
MUSC 1600 Voice Techniques (F,Sp)....1

MUSC 1800 Percussion Techniques (F) 1
MUSC 2160 Aural Skills IV (Sp) 1
MUSC 2600 Women's Choir (F,Sp) (1 cr) **or**
MUSC 4600 University Chorale (F,Sp) (1 cr) 1
MUSC 2700 Woodwind Techniques I: Flute, Clarinet (F) 1
MUSC 2800 Brass Techniques I: Trumpet, French Horn (F) 1
MUSC 3100 Motivation and Classroom Management Strategies in Secondary Classroom Music (Sp) 3
MUSC 3220 Choral Methods and Materials (F) 2
MUSC 3240 Instrumental Methods and Materials (Sp) 2
MUSC 3500 Symphony Orchestra (F,Sp) 7
MUSC 3510 Orchestra Literature (Sp) 2
MUSC 3520 String Pedagogy and Solo Literature (F,Sp) 2
MUSC 4240 Advanced Conducting (F) 2
MUSC 4500 String Ensemble (F,Sp) 4
MUSC 4920 Individual Recital (F,Sp,Su) 1-6

Individual String Instruction (7 credits)
Select 7 credits from the following:
MUSC 4510 Individual Violin Instr for Music Majors (F,Sp,Su) 1-2
MUSC 4520 Individual Viola Instr for Music Majors (F,Sp,Su) 1-2
MUSC 4530 Individual Cello Instr for Music Majors (F,Sp,Su) 1-2
MUSC 4540 Individual String Bass Instr for Music Majors (F,Sp,Su) 1-2

Music Education (Choral) (34-39 credits)
MUSC 1500 String Techniques I (F,Sp) 1
MUSC 1800 Percussion Techniques (F) 1
MUSC 2160 Aural Skills IV (Sp) 1
MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (F,Sp,Su) 3
MUSC 2600 Women's Choir (F,Sp) (1 cr, repeatable) **or**
MUSC 4600 University Chorale (F,Sp) (1 cr, repeatable) **or**
MUSC 4650 Chamber Singers (F,Sp) (1 cr, repeatable) 7
MUSC 2700 Woodwind Techniques I: Flute, Clarinet (F) 1
MUSC 2800 Brass Techniques I: Trumpet, French Horn (F) (1 cr) **or**
MUSC 2810 Brass Techniques II: Trombone, Tuba, Euphonium (Sp) (1 cr) 1
MUSC 3100 Motivation and Classroom Management Strategies in Secondary Classroom Music (Sp) 3
MUSC 3220 Choral Methods and Materials (F) 2
MUSC 3230 Choral Literature (Sp) 2
MUSC 3240 Instrumental Methods and Materials (Sp) 2
MUSC 3630 Vocal Pedagogy I (F) 2
MUSC 3670 Individual Vocal Instruction for Music Majors (F,Sp,Su) 7
MUSC 4920 Individual Recital (F,Sp,Su) 1-6

Music Education (General) (36 credits)
MUSC 1400 Beginning Group Piano (Sp) (1 cr) **or**
MUSC 1410 Intermediate Group Piano (Sp) (1 cr) **or**
MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (F,Sp,Su) (1 cr, repeatable) 2
MUSC 1500 String Techniques I (F,Sp) 1
MUSC 1600 Voice Techniques (F,Sp) 1
MUSC 1800 Percussion Techniques (F) 1
MUSC 2550 Guitar Styles (Blues/Bluegrass) (F) 2
MUSC 2560 Guitar Styles (Jazz/Classical) (Sp) 2
MUSC 2570 Fingerboard Theory I (F) 2
MUSC 2580 Fingerboard Theory II (Sp) 2
MUSC 2600 Women's Choir (F,Sp) (1 cr) **or**
MUSC 4600 University Chorale (F,Sp) (1 cr) 1
MUSC 2700 Woodwind Techniques I: Flute, Clarinet (F) 1
MUSC 3100 Motivation and Classroom Management Strategies in Secondary Classroom Music (Sp) 3
MUSC 3220 Choral Methods and Materials (F) 2
MUSC 3240 Instrumental Methods and Materials (Sp) 2
MUSC 3550 Individual Guitar Instruction for Music Majors (F,Sp,Su) 6
MUSC 3570 Guitar Pedagogy I (F) 2
MUSC 3580 Guitar Pedagogy II (Sp) 2
MUSC 3590 Electric Guitar Ensemble (F,Sp) (1 cr, repeatable) **or**
MUSC 4550 Acoustic Guitar Ensemble (F,Sp) (1 cr, repeatable) 4

Secondary Teacher Education Program (STEP) (26 credits)
Admission to the STEP curriculum requires action by the Office of the Associate Dean for Teacher Education, Graduation, and Educator Licensing, as well as the department where the major work is being offered. Students **are not** generally permitted to enroll in the following STEP courses unless they have been admitted to the STEP.

Level 1 Courses (7 credits)
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F,Sp) 3
SCED 3300 Clinical Experience I (F,Sp) (Arranged) 1
SPED 4000 Education of Exceptional Individuals (F,Sp,Su) (may be taken anytime) 2
INST 3500 Technology Tools for Secondary Teachers (F,Sp,Su) 1

Level 2 Courses (7 credits)
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp) 3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp) 3
SCED 4300 Clinical Experience II (F,Sp) (Arranged) 1

Level 3 Courses (12 credits)
SCED 5500 Student Teaching Seminar (2 weeks) (F,Sp) 2
SCED 5630 Student Teaching in Secondary Schools (13 weeks, full-time) (F,Sp) 10

Dual Licensure (Recommended)

Students receiving licensure in secondary music education are encouraged to qualify for teaching music (vocal and/or instrumental) in the elementary schools. In addition to the graduation and licensure requirements for the BM Degree in Music Education, the following courses are required.

PSY 1100 Developmental Psychology: Infancy and Childhood (F,Sp) (3 cr) **or**
FCHD 1500 (BSS)[4] Human Development Across the Lifespan (F,Sp) (3 cr) 3
MUSC 3260[5] Elementary School Music (F,Sp,Su) 2
MUSC 3270[5] Teaching Strategies and Practicum in Elementary Music (Sp) 3

[4]Will fulfill the University Studies Breadth Social Sciences (BSS) requirement.
[5]Two credits are given for MUSC 3260. Two additional credits may be obtained by arranging for a two-hour-a-week practicum experience in the elementary schools. Scheduling arrangements for the practicum are made through the MUSC 3260 instructor. Orff Schulwerk course (taught summer semester *only*) may be substituted for both MUSC 3260 and 3270.

Bachelor of Music Degree (Performance Emphases) (2.75 cumulative GPA; 3.0 GPA in Music courses)

The Bachelor of Music Degree with one of the performance emphases requires completion of University Studies Requirements, Core Requirements, and Emphasis Area Requirements. A grade of *C-* or better must be earned in all core and emphasis classes.

Music Core Curriculum Requirements (35 credits)
All of the Music Core Curriculum courses (shown on page 355) are required, with the following exceptions:

MUSC 1150, 1160, and 2160 are *not required* for the Guitar Performance Emphasis.

MUSC 2160 is *not required* for the Wind/Brass/Percussion Performance Emphasis.

MUSC 3180 is *not required* for the Vocal Performance Emphasis.

Emphasis Area

Students must select one area of emphasis and complete the required coursework for that emphasis. The student's transcript will show the area of emphasis selected by the student from those listed below. Please note that all music majors are required to participate in major departmental ensemble organizations each semester. The student and an advisor will determine the organizations in which the student will participate.

Piano Performance (60-63 credits)

MUSC 1420 Pedagogy Practicum (F,Sp) 9
MUSC 1430 Piano Pedagogy I (F) 3
MUSC 1440 Piano Pedagogy II (Sp) 3
MUSC 2420 Piano Literature I (F) 3
MUSC 2430 Piano Literature II (Sp) 3
MUSC 2440 Piano Literature III (F) 3
MUSC 2450 Piano Literature IV (Sp) 3
MUSC 3400 Individual Piano Instruction for Music Majors (F,Sp,Su) . 12
MUSC 3410 Ensemble and Accompanying (Piano) (F,Sp) 6
MUSC 3420 Keyboard Skills I (F) 3
MUSC 3430 Keyboard Skills II (Sp) 3
MUSC 4410 Advanced Piano Pedagogy I (F) 3
MUSC 4420 Advanced Piano Pedagogy II (Sp) 3
MUSC 4920 Individual Recital (F,Sp,Su) 3-6

Organ Performance (52 credits)

MUSC 1460 (CI) Organ Literature I (F) 3
MUSC 1470 (CI) Organ Literature II (Sp) 3
MUSC 1600 Voice Techniques (F,Sp) 1
MUSC 2600 Women's Choir (F,Sp) (1 cr) **or**
MUSC 4600 University Chorale (F,Sp) (1 cr) 1
MUSC 3230 Choral Literature (Sp) 2
MUSC 3460 Church Music for Organists I (F) 3
MUSC 3470 Church Music for Organists II (Sp) 3
MUSC 3480 Individual Organ Instruction for Music Majors (F,Sp,Su) 16
MUSC 4900 Baroque Counterpoint (F) 2
MUSC 4920 Individual Recital (F,Sp,Su) 4
Music Electives 14

String Performance (50 credits)

MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (F,Sp,Su) 2
MUSC 3500 Symphony Orchestra (F,Sp) 8
MUSC 4500 String Ensemble (F,Sp) 8
MUSC 4920 Individual Recital (Sophomore) (F,Sp,Su) 2
MUSC 4920 Individual Recital (Junior) (F,Sp,Su) 2
MUSC 4920 Individual Recital (Senior) (F,Sp,Su) 2
Music Electives 6
University Electives 4

Individual String Instruction[6] (16 credits)

Students must complete credits from *one* of the following:
MUSC 4510 Individual Violin Instr for Music Majors (F,Sp,Su) 1-2
MUSC 4520 Individual Viola Instr for Music Majors (F,Sp,Su) 1-2
MUSC 4530 Individual Cello Instr for Music Majors (F,Sp,Su) 1-2
MUSC 4540 Individual String Bass Instr for Music Majors (F,Sp,Su) 1-2

Vocal Performance (56-62 credits)

MUSC 1610 Introduction to Musical Theatre (Sp) (2 cr) **or**
MUSC 1620 Introduction to Opera (F) (2 cr) 2
MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (F,Sp,Su) 0-6
MUSC 2660 Italian Diction for Singers (Sp) 2
MUSC 2670 German Diction for Singers (F) 2
MUSC 2680 French Diction for Singers (Sp) 2
MUSC 3600 Opera Workshop (F,Sp) 6
MUSC 3610 Vocal Repertory I (F) 2
MUSC 3620 (CI) Vocal Repertory II (Sp) 2
MUSC 3630 Vocal Pedagogy I (F) 2
MUSC 3640 Vocal Pedagogy II (Sp) 2
MUSC 3670 Individual Vocal Instruction for Music Majors (F,Sp,Su) .. 16
MUSC 4920 Individual Recital (F,Sp,Su) 4
Major Performance Group (MUSC 4600, 4650, 2610, **or** 2600) 8
Italian or German or French (2 semesters) 6

All students selecting the Vocal Performance Emphasis must complete performance level 5 in piano or MUSC 2490 until level requirement is met.

Wind/Brass/Percussion Performance (48-56 credits)

Individual Instruction[6] (12 credits)

Students must complete 12 credits from ***one*** of the following three groups of courses in their area (Individual Woodwind Instruction ***or*** Individual Brass Instruction ***or*** Individual Percussion Instruction).

Individual Woodwind Instruction

MUSC 3710 Individual Flute Instr for Music Majors (F,Sp,Su) 1-2
MUSC 3720 Individual Oboe Instr for Music Majors (F,Sp,Su) 1-2
MUSC 3730 Individual Clarinet Instr for Music Majors (F,Sp,Su) 1-2
MUSC 3740 Individual Bassoon Instr for Music Majors (F,Sp,Su) 1-2
MUSC 3750 Individual Saxophone Instr for Music Majors (F,Sp,Su) 1-2

Individual Brass Instruction

MUSC 3810 Individual Trumpet Instr for Music Majors (F,Sp) 1-2
MUSC 3820 Individual Trombone Instr for Music Majors (F,Sp) 1-2
MUSC 3830 Individual French Horn Instr for Music Majors (F,Sp) 1-2
MUSC 3840 Individual Tuba/Euphonium Instr for Music Majors (F,Sp) 1-2

Individual Percussion Instruction

MUSC 3860 Individual Percussion Instr for Music Majors (F,Sp,Su) . 1-2

Large Ensembles[7] (8 credits)

Select 8 credits from the following:
MUSC 3500 Symphony Orchestra (repeatable) (F,Sp) 1
MUSC 3790 Symphonic Band (repeatable) (F,Sp) 1
MUSC 4700 Wind Orchestra (repeatable) (F,Sp) 1

Small Ensembles (4 credits)

Select 4 credits from the following five courses:
MUSC 3700 Woodwind Ensemble (F,Sp) 1-2
MUSC 3780 Flute Ensemble (F,Sp) 1
MUSC 3800 Trombone Ensemble (F,Sp) 1
MUSC 3850 Brass Ensemble (F,Sp) 1
MUSC 3870 Percussion Ensemble (F,Sp) 1

Additional Courses (24-32 credits)

MUSC 1800 Percussion Techniques (F) 1
MUSC 2700 Woodwind Techniques I: Flute, Clarinet (F) (1 cr) **or**
MUSC 2710 Woodwind Techniques II: Saxophone, Oboe, Bassoon (Sp) (1 cr) **or**
MUSC 2740 Recorder Techniques (Sp) (1 cr) 1

MUSC 2800 Brass Techniques I: Trumpet, French Horn (F) (1 cr) **or**
MUSC 2810 Brass Techniques II: Trombone, Tuba, Euphonium (Sp) (1 cr) 1
MUSC 3240 Instrumental Methods and Materials (Sp) (2 cr) **or**
MUSC 4930 Readings and Conference (Independent Study with major prof in instrumental pedagogy) (2 cr) (F,Sp,Su) 2
MUSC 3900 Jazz Improvisation (F,Sp) 2
MUSC 4920 Individual Recital (Junior) (F,Sp,Su) 1-2
MUSC 4920 Individual Recital (Senior) (F,Sp,Su) 3-6
Secondary Instrument Course[8] 2
Electives (at least 4 credits in Music)[9] 11-15

[6]A student in this program will study privately each semester of residency.
[7]A student in this program will participate in a large ensemble for each semester of residency.
[8]Choose 2 credits from: MUSC 2470, 2490, 2750, 2760, 2770, 2780, 2790, 2850, 2860, 2870, 2880, 2890.
[9]At least 3 credits must be from a course that is designated as Communications Intensive and at least 3 credits must be from a course that is designated as Quantitative Intensive, such as ECE 3260, Science of Sound.

Guitar Performance (54 credits)

MUSC 1400 Beginning Group Piano (Sp) (1 cr) **or**
MUSC 1410 Intermediate Group Piano (Sp) (1 cr) **or**
MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (F,Sp,Su) (1 cr, repeatable) 2
MUSC 2550 Guitar Styles (Blues/Bluegrass) (F) 2
MUSC 2560 Guitar Styles (Jazz/Classical) (Sp) 2
MUSC 2570 Fingerboard Theory I (F) 2
MUSC 2580 Fingerboard Theory II (Sp) 2
MUSC 3550 Individual Guitar Instruction for Music Majors (F,Sp,Su) 10
MUSC 3560 Guitar History and Literature (Sp) 3
MUSC 3570 Guitar Pedagogy I (F) 2
MUSC 3580 Guitar Pedagogy II (Sp) 2
MUSC 3590 Electric Guitar Ensemble (F,Sp) (1 cr, repeatable) **or**
MUSC 4550 Acoustic Guitar Ensemble (1 cr, repeatable) (F,Sp) 8
MUSC 3900 Jazz Improvisation (F,Sp) 2
MUSC 4920 Individual Recital (F,Sp,Su) 6
MUSC 4930 Readings and Conference (F,Sp,Su) 2
Music Electives 3
University Electives 6

Bachelor of Music Degree (Piano Pedagogy Emphasis) (2.75 cumulative GPA; 3.0 GPA in Music courses)

The Bachelor of Music Degree with an emphasis in Piano Pedagogy requires completion of University Studies Requirements, Core Requirements, Pedagogy Emphasis, and Electives. **Music majors must maintain a minimum GPA of 3.0 in Music courses.** A grade of *C-* or better must be earned in all core and emphasis classes. A 2.75 cumulative GPA is required for graduation. Additional requirements, such as piano proficiency, concert attendance, etc., are stipulated in the Department of Music's *Student Handbook*.

Music Core Curriculum Requirements (35 credits)

Students in the Piano Pedagogy emphasis must complete the 35-credit music core curriculum as listed on page 355.

Pedagogy Emphasis Requirements (56-57 credits)

MUSC 1420 Pedagogy Practicum (F,Sp) 6
MUSC 1430 Piano Pedagogy I (F) 3
MUSC 1440 Piano Pedagogy II (Sp) 3
MUSC 2420 Piano Literature I (F) 3
MUSC 2430 Piano Literature II (Sp) 3
MUSC 2440 Piano Literature III (F) 3
MUSC 2450 Piano Literature IV (Sp) 3
MUSC 3400 Individual Piano Instruction for Music Majors (F,Sp,Su) 12
MUSC 3410 Ensemble and Accompanying (Piano) (F,Sp) 4
MUSC 3420 Keyboard Skills I (F) 3
MUSC 3430 Keyboard Skills II (Sp) 3
MUSC 4410 Advanced Piano Pedagogy I (F) 2
MUSC 4420 Advanced Piano Pedagogy II (Sp) 2
MUSC 1460 (CI) Organ Literature I (F) (3 cr) **or**
MUSC 4900 Baroque Counterpoint (F) (2 cr) ..... 2 or 3
MUSC 4920 Individual Recital (F,Sp,Su) 2
Electives 2

Bachelor of Music Degree (Individualized Program) (2.75 cumulative GPA; 3.0 GPA in Music courses)

The Individualized Bachelor of Music Degree is intended for persons whose musical goals are not met by USU's other bachelor of music programs in music education, performance/pedagogy, or music therapy. The individualized program is also appropriate for those who wish to combine music with another discipline, such as business, electrical engineering, computer science, etc. A grade of *C-* or better must be earned in all classes applied toward the degree.

All individualized curricula must meet criteria established by the National Association of Schools of Music. Students in the individualized program are expected to complete at least the minimum jury performance level required for their major instrument or voice, and to complete a senior recital appropriate to their emphasis. All proposed individualized curricula must be approved by an appropriate advisor, the Individualized Bachelor of Music Degree Committee, and the Head of the Department of Music.

University Studies Requirements

Music Core Curriculum (35 credits) (see page 355)

Music Performance (16 credits)

Individual Instruction (8 credits)

Individual Instruction should be taken in either the major instrument or voice.

Large and Small Ensembles (8 credits)

As part of the 8 required credits, a minimum of 4 credits must be taken in a large ensemble.

Emphasis Area (37 credits)

The curriculum for the emphasis area must be developed in consultation with an appropriate advisor and approved by the Individualized Bachelor of Music Degree Program Committee and by the Head of the Department of Music. It must form a coherent plan leading to the fulfillment of specific objectives. Student transcripts will show Individualized Program, ***not*** the emphasis area approved by the committee.

If the plan involves relating music to other fields, it must meet appropriate criteria as outlined in the *Handbook of the National Association of Schools of Music* for the degree of Bachelor of Music in Combinations with an Outside Field. Such a plan must also be developed and approved in consultation with an advisor in the other field, in addition to the appropriate advisor in the Department of Music.

Music Therapy Requirements

Students must complete an application process through the Music Department in order to be accepted for the Music Therapy major. **Music Therapy majors must maintain a minimum GPA of 3.0 in Music Therapy courses.** A grade of *C-* or better must be earned in all required classes. A 2.75 total GPA is required for graduation. Additional requirements, such as piano proficiency, concert attendance, etc., are stipulated in the Department of Music's *Student Handbook* and *Music Therapy Addendum to the Handbook*.

Core Course Requirements (33-34 credits)

MUSC 1110 Music Theory I (F) 3
MUSC 1120 Music Theory II (Sp) 3
MUSC 1130 Aural Skills I (F) 1
MUSC 1140 Aural Skills II (Sp) 1
MUSC 1150 Keyboard Harmony I (F) 1
MUSC 1160 Keyboard Harmony II (Sp) 1
MUSC 2130 Music Theory III (F) 3
MUSC 2150 Aural Skills III (F) 1
MUSC 2160 Aural Skills IV (Sp) (1 cr) **or**
MUSC 3900 Jazz Improvisation (F,Sp) (2 cr) ..... 1 or 2
MUSC 2180 Computer Applications in Music (F,Sp) 2
MUSC 3110 Music History I: Origins Through Baroque (Sp) 3
MUSC 3120 Music History II: Classical and Romantic Periods (F) 3
MUSC 3130 (CI) Music History III/Theory IV: The Twentieth Century (Sp) 3
MUSC 3140 Musical Form and Analysis (Sp) 3
MUSC 3160 World Music (Sp) 2
MUSC 3170 Conducting (F) 2

Additional Music Coursework (4 credits)

MUSC 1800 Percussion Techniques (F) 1
MUSC 2740 Recorder Techniques (Sp) 1
MUSC 3260 Elementary School Music (F,Sp,Su) 2

Ensemble Performance (2 credits)

Select 2 credits from the following:
MUSC 1320 Music Therapy Ensemble (F,Sp) 1
MUSC 3500 Symphony Orchestra (F,Sp) 1
MUSC 3700 Woodwind Ensemble (F,Sp) 1-2
MUSC 3780 Flute Ensemble (F,Sp) 1
MUSC 3790 Symphonic Band (F,Sp) 1
MUSC 3800 Trombone Ensemble (F,Sp) 1
MUSC 3850 Brass Ensemble (F,Sp) 1
MUSC 3870 Percussion Ensemble (F,Sp) 1
MUSC 4500 String Ensemble (F,Sp) 1
MUSC 4600 University Chorale (F,Sp) 1
MUSC 4650 Chamber Singers (F,Sp) 1

Individual Instruction (Major Instrument) (4 credits)

Guitar Requirements (with advisor approval) (1-4 credits)
Select 1-4 credits from the following:
MUSC 1550 Beginning Group Guitar (F,Sp) 1
MUSC 1560 Intermediate Group Guitar (F,Sp) 1
MUSC 2550 Guitar Styles (Blues/Bluegrass) (F) 2
MUSC 2560 Guitar Styles (Jazz/Classical) (Sp) 2
MUSC 2590 Individual Guitar Instruction (Second Instrument) for Music Majors (F,Sp,Su) 1
MUSC 3550 Individual Guitar Instruction for Music Majors (F,Sp,Su) 1-2

Piano Requirements (with advisor approval) (1-4 credits)
Select 1-4 credits from the following:
MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (repeatable) (F,Sp,Su) 1
MUSC 3400 Individual Piano Instruction for Music Majors (repeatable) (F,Sp,Su) 1

Vocal Requirements (with advisor approval) (2 credits)
Select 2 credits from the following:
MUSC 2640 Individual Vocal Instruction (Second Instrument) for Music Majors (repeatable) (F,Sp,Su) 1
MUSC 3670 Individual Vocal Instruction for Music Majors (repeatable) (F,Sp,Su) 1-2

Music Therapy Core Courses (29-31 credits)

MUSC 1310 Introduction to Music Therapy (F) 2
MUSC 2310 Introduction to Observational and Behavioral Methods in Music Therapy (F) 2
MUSC 2320 Music Therapy Methods and Materials (Sp) 2
MUSC 3310 Music Therapy and the Exceptional Child (F) 3
MUSC 3320 Psychology of Music I (Sp) 2
MUSC 3330 Music Therapy Practicum (F,Sp) 9-11
MUSC 4310 Music Therapy with Adult Populations (F) 3
MUSC 4320 (CI) Psychology of Music II (Sp) 2
MUSC 4330 Clinical and Professional Issues in Music Therapy (Sp) 2
MUSC 4340 Internship in Music Therapy (taken only after all academic coursework has been completed) (F,Sp,Su) 2

Behavioral Health/Natural Sciences (20 credits)

PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
PSY 3210 (DSS) Abnormal Psychology (F,Sp) 3
BIOL 2010 Human Anatomy (Sp,Su) 4
SPED 4000 Education of Exceptional Individuals (F,Sp,Su) 2
Electives (must be approved by student's advisor) 8

Music Minors

Admission to Music Minor Programs

To be admitted as music minors, students must complete the Music Minor Admission Form and return it to the Department of Music Student Services Office, Fine Arts 102. Students are required to meet the requirements which are in effect at the time the Admission Form is completed.

Basic Music Minor (24 credits)

Advisor: Dr. Dean Madsen, 797-3031, University Reserve 202

MUSC 1110[10] Music Theory I (*music minor section*) (F) 3
MUSC 1130[10] Aural Skills I (*music minor section*) (F) 1
MUSC 1480 Individual Piano Instruction for Nonmusic Majors (F,Sp,Su) 1
MUSC 3170 Conducting (F) 2
Large or Small Ensemble 4
Individual Instruction (*nonmajor courses, primary instrument/voice*) 4

In addition, complete the following three courses, which may also count toward University Studies requirements.
MUSC 1010 (BCA) Introduction to Music (F,Sp,Su) 3
MUSC 3010 (DHA)[11] Masterpieces of Music (F,Sp) 3
MUSC 3020 (DHA)[11] History of Jazz (Sp) 3

Music Composition Minor (21 credits) (Approval pending)

This minor is available to Music and Music Therapy majors only.

Advisor: Dr. Dean Madsen, 797-3031, University Reserve 202

MUSC 2180 Computer Applications in Music (F,Sp) 2
MUSC 3020 History of Jazz (Sp) 3
MUSC 3910 Individual Composition Instruction (F,Sp) 2
MUSC 4900 Baroque Counterpoint (F) 2
MUSC 4910 Music Compositon (repeatable; take for 2 semesters) (Sp) 4
MUSC 4920 Individual Recital (F,Sp,Su) 2

In addition, complete the following two courses. ECE 3260 may also count toward University Studies requirements.
PHIL 3810 Aesthetics (Sp) 3
ECE 3260 (QI/DSC) Science of Sound (F) 3

Elementary School Music Teaching Minor (19 credits)

This minor is for Early Childhood Education or Elementary Education majors only.

Advisor: Professor Leslie Timmons, 797-3699, Fine Arts 105

MUSC 1110[10] Music Theory I (*music minor section*) (F) 3
MUSC 1130[10] Aural Skills I (*music minor section*) (F) 1
MUSC 1150 Keyboard Harmony I (*music minor section*) (F) 1
MUSC 1600 Voice Techniques (F,Sp) (1 cr) **or**
MUSC 1630 Individual Vocal Instruction for Nonmusic Majors (F,Sp,Su) (1 cr) 1
MUSC 3260[12] Elementary School Music (F,Sp,Su) 2
MUSC 3270[13] Teaching Strategies and Practicum in Elementary Music (Sp) 3
Choral Performance Ensemble 2
Large or Small Performance Ensembles 2

In addition, complete the following course, which may also count toward University Studies requirements.
MUSC 1010 (BCA) Introduction to Music (F,Sp,Su) 3

Elective Courses
Complete at least **one** of the three courses listed below.
MUSC 1480 Individual Piano Instruction for Nonmusic Majors (F,Sp,Su) 1
MUSC 1550 Beginning Group Guitar (F,Sp) 1
MUSC 1560 Intermediate Group Guitar (F,Sp) 1

[10] Offered during spring semester *only*. These courses must be taken concurrently.
[11] It is recommended that students complete MUSC 1010 prior to enrolling in MUSC 3010 and 3020.
[12] Students must have completed a minimum of 55 credits prior to enrolling in MUSC 3260. It is recommended that students complete MUSC 1010, 1110, 1130, and 1150 prior to enrolling in MUSC 3260.
[13] Offered spring semester *only*. Level I Orff Schulwerk (taught summer semester only) may also fulfill this requirement. MUSC 1110 and 3260 are prerequisites for MUSC 3270. It is recommended that students complete MUSC 1600 or 1630 prior to enrolling in MUSC 3270.

Two-year Certificate and Diploma Programs

The Music Department offers two programs leading to certificates of completion:

1. The Diploma Program in the areas of organ and church music, piano pedagogy, or guitar.

2. The Music Certificate Program in the areas of piano, organ, or guitar.

Both of these programs are intended to develop performance or teaching competence for individuals who do not desire the baccalaureate degree. These programs focus on a practical music education with minimal or no involvement with general university studies.

Students are issued their certificate and/or diploma directly through the Music Department. For more information, contact the student services secretary in Fine Arts 102.

Requirements for Certificate Programs

Piano Certificate (47 credits)

A minimum grade of *C-* is required for all piano courses.

MUSC 1110 Music Theory I (F) 3
MUSC 1120 Music Theory II (Sp) 3
MUSC 1130 Aural Skills I (F) 1
MUSC 1140 Aural Skills II (Sp) 1
MUSC 1150 Keyboard Harmony I (F) 1
MUSC 1160 Keyboard Harmony II (Sp) 1
MUSC 1420 Pedagogy Practicum (F,Sp) 6
MUSC 1430 Piano Pedagogy I (F) 3
MUSC 1440 Piano Pedagogy II (Sp) 3
MUSC 2420 Piano Literature I (F) (3 cr) **or**
MUSC 2440 Piano Literature III (F) (3 cr) 3
MUSC 2430 Piano Literature II (Sp) (3 cr) **or**
MUSC 2450 Piano Literature IV (Sp) (3 cr) 3
MUSC 3110 Music History I: Origins through Baroque (Sp) 3
MUSC 3120 Music History II: Classical and Romantic Periods (F) 3
MUSC 3400 Individual Piano Instruction for Music Majors (F,Sp,Su) ... 6
MUSC 3410 Ensemble and Accompanying (Piano) (F,Sp) 2
MUSC 3420 Keyboard Skills I (F) 3
MUSC 4910 Music Composition (Sp) 2

Organ Certificate (42 credits)

MUSC 1110 Music Theory I (F) 3
MUSC 1120 Music Theory II (Sp) 3
MUSC 1130 Aural Skills I (F) 1
MUSC 1140 Aural Skills II (Sp) 1
MUSC 1150 Keyboard Harmony I (F) 1
MUSC 1160 Keyboard Harmony II (Sp) 1
MUSC 1460 Organ Literature I (F) 3
MUSC 1470 Organ Literature II (Sp) 3
MUSC 2130 Music Theory III (F) 3
MUSC 2150 Aural Skills III (F) 1
MUSC 3110 Music History I: Origins through Baroque (Sp) 3
MUSC 3120 Music History II: Classical and Romantic Periods (F) 3
MUSC 3460 Church Music for Organists I (F) 3
MUSC 3470 Church Music for Organists II (Sp) 3
MUSC 3480 Individual Organ Instruction for Music Majors (F,Sp,Su) ... 3
MUSC 4900 Baroque Counterpoint (F) 2
MUSC 4910 Music Composition (Sp) 2

Additional Courses (3 credits)
Select 3 credits from the following:
MUSC 1600 Voice Techniques (F,Sp) 1
MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (F,Sp,Su) 1
MUSC 2600 Women's Choir (F,Sp) 1
MUSC 3410 Ensemble and Accompanying (Piano) (F,Sp) 1

Guitar Certificate (39 credits)

MUSC 1110 Music Theory I (F) 3
MUSC 1120 Music Theory II (Sp) 3
MUSC 1130 Aural Skills I (F) 1
MUSC 1140 Aural Skills II (Sp) 1
MUSC 1150 Keyboard Harmony I (F) 1

MUSC 1160 Keyboard Harmony II (Sp) 1
MUSC 1600 Voice Techniques (F,Sp) 1
MUSC 2130 Music Theory III (F) 3
MUSC 2150 Aural Skills III (F) 1
MUSC 2550 Guitar Styles (Blues/Bluegrass) (F) 2
MUSC 2560 Guitar Styles (Jazz/Classical) (Sp) 2
MUSC 2570 Fingerboard Theory I (F) 2
MUSC 2580 Fingerboard Theory II (Sp) 2
MUSC 3550 Individual Guitar Instruction for Music Majors (F,Sp,Su) ... 3
MUSC 3560 Guitar History and Literature (Sp) 3
MUSC 3570 Guitar Pedagogy I (F) 2
MUSC 3580 Guitar Pedagogy II (Sp) 2
MUSC 3590 Electric (or Acoustic) Guitar Ensemble (F,Sp) 3
Music Electives 3

Organ and Church Music
Requirements for Two-year Diploma[14]

University Studies Competency Requirements (12-18 credits)

Organ and Church Music Core (49 credits)
MUSC 1110 Music Theory I (F) 3
MUSC 1120 Music Theory II (Sp) 3
MUSC 1130 Aural Skills I (F) 1
MUSC 1140 Aural Skills II (Sp) 1
MUSC 1150 Keyboard Harmony I (F) 1
MUSC 1160 Keyboard Harmony II (Sp) 1
MUSC 1430 Piano Pedagogy I (F) 3
MUSC 1440 Piano Pedagogy II (Sp) 3
MUSC 1460 Organ Literature I (F) 3
MUSC 1470 Organ Literature II (Sp) 3
MUSC 2130 Music Theory III (F) 3
MUSC 2150 Aural Skills III (F) 1
MUSC 3110 Music History I: Origins through Baroque (Sp) 3
MUSC 3120 Music History II: Classical and Romantic Periods (F) 3
MUSC 3170 Conducting (F) 2
MUSC 3460 Church Music for Organists I (F) 3
MUSC 3470 Church Music for Organists II (Sp) 3
MUSC 3480 Individual Organ Instruction for Music Majors (F,Sp,Su) ... 3
MUSC 4900 Baroque Counterpoint (F) 2
MUSC 4910 Music Composition (Sp) 2

Additional Courses (2 credits)
Select 2 credits from the following:
MUSC 1600 Voice Techniques (F,Sp) 1
MUSC 2490 Individual Piano Instruction (Second Instrument) for Music Majors (F,Sp,Su) 1
MUSC 2600 Women's Choir (F,Sp) 1
MUSC 3410 Ensemble and Accompanying (F,Sp) 1

Piano Pedagogy
Requirements for Two-year Diploma[14]

University Studies Competency Requirements (12-18 credits)

Piano Core (48 credits)
A minimum grade of *C* is required for all piano courses.

MUSC 1110 Music Theory I (F) 3
MUSC 1120 Music Theory II (Sp) 3
MUSC 1130 Aural Skills I (F) 1
MUSC 1140 Aural Skills II (Sp) 1
MUSC 1150 Keyboard Harmony I (F) 1
MUSC 1160 Keyboard Harmony II (Sp) 1
MUSC 1420 Pedagogy Practicum (F,Sp) 6
MUSC 1430 Piano Pedagogy I (F) 3
MUSC 1440 Piano Pedagogy II (Sp) 3
MUSC 2130 Music Theory III (F) 3
MUSC 2150 Aural Skills III (F) 1
MUSC 2420 Piano Literature I (F) (3 cr) **or**
MUSC 2440 Piano Literature III (F) (3 cr) 3
MUSC 2430 Piano Literature II (Sp) (3 cr) **or**
MUSC 2450 Piano Literature IV (Sp) (3 cr) 3
MUSC 3110 Music History I: Origins through Baroque (Sp) 3
MUSC 3120 Music History II: Classical and Romantic Periods (F) 3
MUSC 3400 Individual Piano Instruction for Music Majors (F,Sp,Su) ... 6
MUSC 3410 Ensemble and Accompanying (F,Sp) 1
MUSC 3420 Keyboard Skills I (F) 3

Guitar
Requirements for Two-year Diploma[14]

University Studies Competency Requirements (12-18 credits)

Music Core (42 credits)
MUSC 1110 Music Theory I (F) 3
MUSC 1120 Music Theory II (Sp) 3
MUSC 1130 Aural Skills I (F) 1
MUSC 1140 Aural Skills II (Sp) 1
MUSC 1150 Keyboard Harmony I (F) 1
MUSC 1160 Keyboard Harmony II (Sp) 1
MUSC 1600 Voice Techniques (F,Sp) 1
MUSC 2130 Music Theory III (F) 3
MUSC 2150 Aural Skills III (F) 1
MUSC 2550 Guitar Styles (Blues/Bluegrass) (F) 2
MUSC 2560 Guitar Styles (Jazz/Classical) (Sp) 2
MUSC 2570 Fingerboard Theory I (F) 2
MUSC 2580 Fingerboard Theory II (Sp) 2
MUSC 3550 Individual Guitar Instruction for Music Majors (F,Sp,Su) ... 3
MUSC 3560 Guitar History and Literature (Sp) 3
MUSC 3570 Guitar Pedagogy I (F) 2
MUSC 3580 Guitar Pedagogy II (Sp) 2
MUSC 3590 Electric (**or** Acoustic) Guitar Ensemble (F,Sp) 3
Music Electives 6

[14] A minimum of 60 credits is required for the diploma. If University Studies or other requirements are satisfied by examination, the student must take electives to achieve the 60-credit minimum.

Recital and Concert Attendance
Recital and concert attendance is required and will be monitored. Students should turn in programs after attending concerts and recitals. A summary of attendance will be kept in the student's file. To graduate, students are required to attend a minimum of 10 concerts and 10 recitals each year.

Individual Performance and Jury Requirements
Music majors enroll in individual instruction each semester and practice regularly outside of lessons. Jury exams are held at the end of each semester to assess individual progress. To determine specific jury requirements for their area, students should contact their advisor.

Recital Participation
Each music education, performance, and pedagogy major is encouraged to appear in a departmental recital each semester. Four such appearances are required for graduation. Since junior and senior recital requirements vary, students should consult program advisors and degree requirement sheets for specific information.

Department of Music

Piano Proficiency Requirements
Music, Music Education, and Music Therapy majors must meet a minimum standard of piano proficiency before graduation. The specific requirements are detailed in the department's *Student Handbook*.

Music Theory Proficiency
Music, Music Education, and Music Therapy majors must meet a minimum standard of theory proficiency before entering third-year core music courses. This theory exam is administered upon completion of the theory sequence and is also required for all transfer students. It serves as a placement exam for those who have not completed the theory sequence at their previous schools. For details, contact the Music Department Student Services Office, (435) 797-3015, Fine Arts 102.

Assessment

Information about the ongoing assessment of the Music Department can be found at: **http://www.usu.edu/music/assessment/index.html**

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information and Updates

Degree requirements are listed on the Music Major Requirement Sheet and the Music Therapy Major Requirement Sheet, which can be obtained from the department, or online at:
http://www.usu.edu/ats/majorsheets/

Additional requirements, including appropriate sequencing of courses, are listed in the *Department of Music Student Handbook*. For the most recent information regarding degree requirements and course sequencing, contact advisors over specific programs. Further information can also be obtained by contacting the Music Department Office, Fine Arts 102, or by visiting the department's website.

Financial Support

Scholarships, grants, and work-study programs are available through the University. Information about these programs can be obtained by calling the Admissions Office, (435) 797-1129 or 1-800-488-8108. In addition, the Department of Music offers talent-based scholarships to undergraduate students and employs students as part-time workers. For scholarship information or to arrange an audition, contact the department at (435) 797-3015 or visit the department's website.

Music Faculty

Professors
Gary Amano, piano
Michael L. Ballam, opera
Michael K. Christiansen, guitar program
James M. Drake, organ program
Todd L. Fallis, instrumental music education, student advising, low brass
F. Dean Madsen, music theory, twentieth century music, composition
Nicholas E. Morrison, clarinet, associate director of bands

Adjunct Professor
Michael Martin Murphey, songwriting, American studies

Professors Emeriti
Warren L. Burton, introduction to music
Max F. Dalby, bands, woodwind, conducting
Glen A. Fifield, elementary music, cornet and trumpet
Larry G. Smith, jazz program, musicianship program, staff arranger, saxophone, jazz piano
Alvin Wardle, music education, low brass

Associate Professors
Cindy J. Dewey, voice, opera, pedagogy
Mark A. Emile, string performance and pedagogy, violin/viola
Dennis D. Griffin, percussion, electronic music, composition
Lynn Jemison-Keisker, opera, voice
Bruce M. Saperston, music therapy
Leslie Timmons, elementary music education, flute
Elizabeth York, director of music therapy

Associate Professor Emeritus
Mildred Johnson, music history and literature, musicianship program, viola

Assistant Professors
Sergio Bernal, orchestra conductor, string program
Jon Gudmundson, jazz, saxophone
R. Dennis Hirst, piano, Youth Conservatory
Thomas Rohrer, director of bands
Eric Smigel, music history, world music
Ralph van der Beek, piano, Youth Conservatory

Assistant Professor Emeritus
Betty Beecher, piano

Instructors
Lane Cheney, choral music education
R. Cory Evans, choral music

Lecturers (Fry Street Quartet)
Russell Fallstad, viola
Anne Francis, cello
Jessica Guideri, violin
Rebecca McFaul, violin

Course Descriptions

Music (MUSC), pages 558-564

Certificate Program in National Environmental Policy Act (NEPA)

Director: Joanna Endter-Wada,
Department of Environment and Society
Location: Natural Resources 355B
Phone: (435) 797-2797
FAX: (435) 797-3526
E-mail: joanna.endter-wada@usu.edu
WWW: http://www.cnr.usu.edu/policy/nepa.html

Program Administrator: Judith A. Kurtzman, Natural Resources 322, (435) 797-0922

Graduate Program Description

The Natural Resource and Environmental Policy Program (NREPP) at Utah State University and the Shipley Group, Inc. have formed a partnership to provide a graduate-level certificate program that offers training related to the National Environmental Policy Act (NEPA). NEPA is an important environmental law that requires analysis of impacts, alternatives, and mitigation measures for all major federal actions affecting the environment, both within the territorial boundaries of the U.S. and at foreign military installations. Government agencies, private businesses, public interest organizations, and other groups involved in the NEPA process need individuals who have been trained in decision-making, analysis, and documentation aspects of NEPA, as well as in the accompanying Council on Environmental Quality (CEQ) regulations and various agencies' NEPA implementing procedures.

The NEPA Certificate Program was designed to prepare natural resource and environmental professionals to meet the challenges of complying with the act and working effectively on NEPA documents. Participants who successfully complete the program should have a solid understanding of both the spirit and the letter of the law, and will be more effective members of interdisciplinary teams responsible for developing NEPA documents.

Certificate

Students who complete the program will receive a graduate-level certificate in the National Environmental Policy Act. Their Utah State University transcript will list the courses they attended to complete the program.

Admission Requirements

To apply and gain acceptance into the program, a person must complete and submit a NEPA Certificate Program application form to the Natural Resource and Environmental Policy Program (NREPP) at USU, as well as provide a transcript documenting the completion of a bachelor's degree. Students pursuing the NEPA Certificate are not required to be enrolled in a graduate degree program. However, credits obtained from the program may be applied toward a graduate degree.

Course Requirements

To receive the certificate, a participant must complete the following set of requirements:

1. apply and be accepted into the NEPA Certificate Program;
2. register for and successfully complete seven graduate-level courses taken for grades (four required courses and three elective courses);
3. undertake an individual capstone experience for graduate credit that involves a negotiated project;
4. maintain a minimum 3.0 GPA for program courses (grades below *C* will not be accepted);
5. abide by the *Code of Policies and Procedures for Students at Utah State University*.

NEPA Certificate Program Courses

Courses for the program will be offered at USU and at other locations around the country. Courses will be offered on a short-course basis through Continuing Education. A two-credit course requires a minimum of three full days in class; a one-credit course requires two full days in class. To receive graduate credit that can be applied toward completion of the certificate, all NEPA courses must be taken for a letter grade, which requires completion of a written examination in addition to class attendance. All courses offered as part of the NEPA Certificate Program may be taken for University graduate credit, whether or not a participant in the course is enrolled in the NEPA Certificate Program.

Curriculum

Students must complete four core courses (2 credits each), three elective courses (1 credit each), and a capstone experience (1 credit) in order to fulfill the requirements for the NEPA Certificate.

Core Courses

Participants are required to take four of the following courses. The first three listed are required. However, participants may choose between the last two courses to fulfill the core course requirements.

NEPA 6200 How to Manage the NEPA Process and Write Effective NEPA Documents 2
NEPA 6210 Clear Writing for NEPA Specialists 2
NEPA 6220 Reviewing NEPA Documents 2
NEPA 6230 Risk Communication for NEPA Specialists: Strategies and Implementation 2
NEPA 6260 Cultural and Natural Resource Management 2

Elective Courses

Participants are required to take three courses of their choosing from the following list.

NEPA 6270 Environmental Compliance Overview 1
NEPA 6280 Interdisciplinary Team Building 1
NEPA 6300 Effective Environmental Contracting 1
NEPA 6310 NEPA Writing for Technical Specialists 1
NEPA 6320 NEPA: Cumulative Impacts 1
NEPA 6330 Conflict Management in the NEPA Process 1
NEPA 6340 Content Analysis and Public Response Management 1
NEPA 6350 Socio-economic Imact Analysis for NEPA Specialists 1
NEPA 6360 Overview of the Endangered Species Act 1

Capstone Experience

After completing the coursework, participants are required to complete a NEPA Capstone Experience (NEPA 6370) before being awarded the NEPA Certificate. This experience will be individualized for each participant, will consist of a project that has been negotiated between the participant and the program faculty, and may be subject to oversight from the NEPA Certificate Program Advisory Board.

Course Descriptions

National Environmental Policy Act (NEPA), page 565

Natural Resources and Environmental Education Graduate Certificate

Director: Steven W. Burr, Environment and Society
Location: Biology-Natural Resources 289
Phone: (435) 797-7094
E-mail: steve.burr@usu.edu

Program Office: Department of Environment and Society
Location: Natural Resources 201
Phone: (435) 797-1790
FAX: (435) 797-4048
WWW: http://www.cnr.usu.edu/envs

Graduate Program Description

The Natural Resources and Environmental Education (NREE) Program offers an Interdisciplinary Graduate Certificate Program to provide graduate students with a comprehensive educational foundation for understanding and communicating natural resources and environmental information, and for developing the analytical skills needed to effectively implement appropriate environmental education and communication techniques for varying audiences. The NREE Certificate Program is administered by the Department of Environment and Society, College of Natural Resources. The certificate program consists of three components, for a total of 15-17 credits: (1) the NREE Core that includes two foundation courses, a NREE graduate seminar, and an "integrating" capstone experience; (2) one Human Dimensions of Natural Resources/Environment course; and (3) one Natural Resources/Environmental Management course.

The purpose of the certificate is to meet an identified need expressed by graduate students with interests in working professionally in the field of natural resources and environmental education and interpretation. The certificate program provides an interdisciplinary perspective on environmental education, and provides graduate students with the ability to teach people how to think critically and creatively in understanding, interpreting, and dealing with environmental issues and challenges. This approach enables students to focus on a broad spectrum of issues and content related to natural resources and the environment.

The structure of the certificate program emphasizes: (1) processes and skills necessary to present and integrate information across a broad spectrum of delivery systems; (2) interdisciplinary information and technical content across many areas, including natural resources, ecology, human resources, history, education, sociology, etc.; and (3) development of an interest area of personal/professional inquiry. The program provides a mechanism to support graduate student project development and research, emphasizing scholarship, discovery, and application of findings in applied settings in order to contribute to the professional field of natural resources and environmental education and interpretation.

Completion of the certificate program will provide graduate students with a working knowledge of the depth and breadth of the professional field of environmental education and interpretation. Moreover, it will prepare them for a job market demanding innovative and creative approaches for incorporating environmental education and interpretation in natural resource management agencies, in both formal (K-12 school-based) and nonformal (youth, community, and outdoor) education programs, in nonprofit organizations, and in the for-profit commercial sector. Although professionals working in natural resources and environmental education may work in a wide range of settings, they share one objective: to help people appreciate and understand the relationship between humans and the natural world around them. Thus, the value of the NREE Certificate Program goes far beyond more traditional approaches associated with education-oriented certificate programs.

Certificate

Students who complete the program receive a certificate in Natural Resources and Environmental Education. Notification of this certificate appears on the student's transcript.

Admission Requirements

To apply for admittance into the NREE Interdisciplinary Graduate Certificate Program, a graduate student must: (1) be accepted by the School of Graduate Studies at Utah State University for graduate study (current or provisional), (2) complete an NREE Interdisciplinary Graduate Certificate Program Application, and (3) submit a resume with references, along with a narrative describing personal interest in completing the NREE Certificate Program with respect to his or her professional goals. The NREE Program Director reviews the application and makes a recommendation for admittance into the certificate program, if appropriate, to the NREE Certificate Advisory Committee.

Student Advisement

An NREE Certificate Advisory Committee, comprised of the NREE Program Director, NREE Program Associate, and two NREE-affiliated faculty from participating departments and colleges, will assist in reviewing graduate student applications for admission into the certificate program, identifying major advisors, identifying funding opportunities, recommending courses to meet the NREE Certificate requirements, and advising graduate students. Graduate students accepted into the NREE Certificate Program will work with their major faculty advisor, as well as with the NREE Certificate Advisory Committee, to support them in understanding and meeting the requirements of the NREE Graduate Certificate Program.

Course Requirements

The NREE Interdisciplinary Graduate Certificate Program consists of three curriculum components, for a total of 15-17 credits: (1) the NREE Core, (2) one Human Dimensions of Natural Resources/Environment course, and (3) one Natural Resources/Environmental Management course. Many of the identified courses in the latter two categories will also satisfy the requirements for a specific degree program in different departments. Therefore, students can select courses in these two categories to complete their specific degree requirements, while at the same time satisfying the requirements of the NREE Certificate Program.

I. Natural Resources and Environmental Education Core Courses (10 credits)

For the NREE Interdisciplinary Graduate Certificate Program, students are required to take the following two foundation courses, participate in the Graduate Seminar, and complete an "integrating" capstone experience, for a total of 10 credits, to fulfill the requirements of the NREE Graduate Certificate Program Core.

NREE Graduate Core:
Foundation Courses
ENVS 5110 Environmental Education (Sp) 3
ENVS 6600 Advanced Natural Resource Interpretation (F) 3

The Environmental Education course and the Advanced Natural Resource Interpretation course serve as Foundation Courses. Environmental Education covers teaching about the environment,

as well as using the environment and natural world to teach other subjects, with a strong emphasis on participation and on practicing techniques. Advanced Natural Resource Interpretation examines the planning processes, techniques, and evaluation procedures for using information and education to influence human behavior and increase benefits to visitors in natural settings, and also focuses on the leadership of teams involved in producing interpretive plans and materials.

Graduate Seminar

ENVS 6800 Environment and Society Departmental Seminar (F or Sp) 1

The Graduate Seminar requires student attendance at a number of different speaker seminars, occurring during the fall or spring semester, that are related to NREE, along with occasional meetings with NREE affiliated faculty to discuss connections and relevance of the seminars to NREE.

Capstone Experience

Students must complete 3 credits in a capstone experience, developed in consultation with a faculty advisor. Credits may be completed in the following types of courses:

Graduate Internship/Co-op
Graduate Special Topics
Graduate Directed Study
Thesis Research
Dissertation Research

The Capstone Experience requirement may be fulfilled in a number of ways, based on each student's interest, through an internship/co-op/special field experience, an investigation of a special topic and/or development of a project, directed readings/study, or a research project. In meeting this requirement, it will be important for students to be able to demonstrate they are getting an "integrating" capstone experience in natural resources and environmental education. Depending on the topic and its relationship to natural resources and environmental education, the completion of a student's Plan A thesis or Plan B project at the master's level may also fulfill this requirement. A student's doctoral dissertation research may qualify as a Capstone Experience. The student's graduate advisor, graduate committee, and NREE Advisory Committee will approve the "capstone" experience. A final "integrative" paper or thesis/dissertation will be the product for the "capstone" experience, emphasizing scholarship and discovery, as well as application of findings in applied settings in natural resources and environmental education.

II. Human Dimensions of Natural Resources/ Environment Courses (2-3 credits)

For the NREE Interdisciplinary Graduate Certificate Program, students are required to take **one** of the following courses, in order to gain a human dimensions' orientation toward natural resources and the environment, and help place natural resources and environmental education in a broader context of human-environment relationships.

ECON 5560 Natural Resources and Environmental Economics 3
ENVS 5300 Natural Resources Policy and Law 2
ENVS 5320 Water Law and Policy in the United States 3
ENVS 5640 Conflict Management in Natural Resources 3
ENVS 6000 Theoretical Foundations in Human Dimensions of Ecosystem Science and Management 3
ENVS 6110 Fisheries and Wildlife Policy and Administration 3
HIST 6460 Seminar in Environmental History 3
PHIL 5510 Ethics and the Environment 3
POLS 5180 Natural Resource Policy 3
POLS 5200 Global Environment 3
SOC 6620 Environment, Technology, and Social Change 3
SOC 6630 Natural Resources and Social Development 3

There may be another course that can satisfy this requirement, but the course will need to be approved by the student's graduate advisor and the NREE Advisory Committee.

III. Natural Resources/Environmental Management Courses (3-4 credits)

For the NREE Interdisciplinary Graduate Certificate Program, students are required to take **one** of the following courses in order to gain a management perspective toward natural resources and the environment.

ADVS 5030 Sustainable Agricultural Production Systems with Animals 3
AWER 5150/6150 Fluvial Geomorphology 3
AWER 5330/6330 Large River Management 3
AWER 5640/7640 Riparian Ecology and Management 3
AWER 5660 Watershed and Stream Restoration 2
AWER 6530 Water Quality and Pollution 3
AWER 6650 Principles in Fishery Management 3
ENVS 5000 Collaborative Problem-Solving for Environment and Natural Resources 3
FRWS 5000 Predator Ecology and Management 3
FRWS 5070/6070 Range Wildlife Relations 3
FRWS 5300/7300 Wildlife Damage Management Principles 3
FRWS 7000 Theory and Applications of Rangeland Ecosystem Management 3
PLSC 5550/6550 Weed Biology and Control 4
SOIL 5350/6350 Wildland Soils 3

There may be another course that can satisfy this requirement, but the course will need to be approved by the student's graduate advisor and the NREE Advisory Committee.

IV. Personal/Professional Inquiry

Although not formally required, a number of courses exist that can support students' interest in natural resources and environmental education, and support student efforts in completing individual degree requirements. These courses include the following:

ASTE 5260/6260 Environmental Impacts of Agricultural Systems 3
ASTE 6070 Program and Curriculum Development in Career and Technical Education 3
ASTE 6110 Applied Technology Education Program Planning and Evaluation 3
ASTE 6170 Supervision and Administration of International Extension Programs 3
ASTE 6240 Strategies for Teaching Adults 3
BIOL 5550 Freshwater Invertebrates 3
BIOL 5560 Ornithology 3
BIOL 5570 Herpetology 3
BIOL 5580 Mammalogy 3
BIOL 6510 Insect-Plant Interactions 2
ELED 6400 Multiple Talent Approach to Teaching 2
ELED 6700 Improvement of Science Instruction 3
ENGL/HIST 6610 Seminar on the American West 3-4
ENGL/HIST 6620 Seminar in Native American Studies 3-4
ENGL/HIST 6700 Folklore Theory and Method 3
ENGL/HIST 6720 Folklore Fieldwork 3
ENGL/HIST 6730 Public Folklore 3
ENGL/HIST 6740 Folk Narrative 3

ENGL/HIST 6760 Cultural and Historical Museums 3
GEOG 5650/6650 Developing Societies 3
GEOG 5810/6810 Geography Education Inservice Workshop 3
GEOG 5970 Classroom Technology in Geography Education 3
GEOG 6800 Teaching Geography 3
HIST 6460 Seminar in Environmental History 3
LAEP 5400/6400 Low Water Landscaping 3
LAEP 6110 Landscape Planning for Wildlife 3
MHR 6620 Training and Organizational Development 3
MHR 6650 Team and Interpersonal Effectiveness 3
PLSC 5100/6100 Landscape Irrigation Management 3
POLS 5180 Natural Resource Policy 3
POLS 5200 Global Environment 3
PSY 6660 Cognition and Instruction 3
PSY/EDUC 7670 Literature Reviews in Education and Psychology 1
PSY 7700 Grant Writing 3
SCED/ELED 6150 Foundations of Curriculum 3
SCED/ELED 6310 Content Area Reading and Writing 3
SPCH 5250 Environmental Rhetoric 3
THEA 6030 Storytelling 3

NREE Affiliated Faculty

Professors
Clifford B. Craig, Environment and Society
Melody Graulich, English
Leona K. Hawks, Environment and Society
Jack M. Payne, Environment and Society, and Vice President for University Extension
Terry L. Sharik, Environment and Society
Gary S. Straquadine, Agricultural Systems Technology and Education
Richard E. Toth, Environment and Society

Associate Professors
James J. Barta, Elementary Education
Dale J. Blahna, Environment and Society
Mark W. Brunson, Environment and Society
Steven W. Burr, Environment and Society
Christopher A. Call, Forest, Range, and Wildlife Sciences
Christopher A. Conte, History
Michael R. Kuhns, Forest, Range, and Wildlife Sciences
Rebecca M. Monhardt, Elementary Education
Jan E. Roush, English
Robert H. Schmidt, Environment and Society

Assistant Professors
Christopher Cokinos, English
Nancy O. Mesner, Aquatic, Watershed, and Earth Resources
Jennifer A. Peeples, Languages, Philosophy, and Speech Communication
Bonnie L. Pitblado, Sociology, Social Work and Anthropology

Senior Lecturer
Michael F. Butkus, Environment and Society

Lecturers
Barbara Middleton, Environment and Society
Susan K. Morgan, Geology

Other Affiliated Individuals
David T. Anderson, Project Director, Utah Botanical Center
John Haskin, Director of Education and Dean of Faculty, Teton Science School
Darren J. McAvoy, Extension Program Associate, Forest, Range, and Wildlife Sciences
Kay Rhees, Principal, Edith Bowen Laboratory School
Jack Shea, Director, Teton Science School
Debra M. Spielmaker, Director, Utah Agriculture in the Classroom
Karla VanderZanden, Director, Canyonlands Field Institute
Douglas G. Wachob, Research Director, Teton Science School

Certificate Program in Natural Resource and Environmental Policy

Coordinator: Michael S. Lyons
Location: Main 330D
Phone: (435) 797-1312
E-mail: m.lyons@usu.edu

Lead Department: Political Science
Staff Assistant: Natalie Heaton
Location: Main 320
Phone: (435) 797-1306
FAX: (435) 797-3751

Graduate Program Description

The Natural Resource and Environmental Policy Graduate Certificate is an interdisciplinary program designed for students seeking graduate degrees in fields related to environmental and natural resource policy analysis. The program introduces students to complementary scientific and social scientific perspectives on environmental and natural resource policy, linking the scientific dimensions of policy to its social context and to the operation of political and economic institutions. Courses that satisfy program requirements are currently offered by the departments of Agricultural Systems Technology and Education; Business Administration; Economics; Environment and Society; Forest, Range, and Wildlife Sciences; History; Landscape Architecture and Environmental Planning; Political Science; and Sociology, Social Work and Anthropology. The program helps to prepare students for careers in public or private sector policy analysis, environmental planning, environmental program assessment, natural resource policy administration, environmental and natural resource consulting, and environmental and natural resource policy advocacy.

Certificate

Students who complete the Policy Program receive a certificate in Natural Resource and Environmental Policy. Notification of this certificate appears on the student's transcript.

Admission Requirements

Admission to the Certificate Program is open to students accepted into a master's degree program or a doctoral degree program at Utah State University, provided their degree program requirements include development of a written research paper or project defended before the student's graduate committee. In all cases, the thesis, research report, or dissertation must contain a significant component addressing natural resource or environmental policy.

Prerequisites

Prior to admission into the Natural Resource and Environmental Policy Graduate Certificate Program, a student must complete at least one upper-division or graduate course in ecology, biological systems, earth processes, or ecosystem management. In addition, each student must also complete at least one upper-division or graduate course in economics, political science, history, or sociology. With the approval of the program coordinator, appropriate professional experience can serve as a substitute for either one of these prerequisites.

Graduate Committee

The student's graduate committee must include one faculty member affiliated with the Policy Program to advise the student on meeting the program requirements and in selecting core courses.

Course Requirements (14 credits)

Courses taken to satisfy requirements in a student's major or minor area of study can also be used to satisfy Natural Resource and Environmental Policy Graduate Certificate requirements.

Required Courses (5-6 credits)
NR 6430 Natural Resource and Environmental Policy Cornerstone Seminar (3 cr) **or**
POLS 5180 Natural Resource Policy (3 cr).....3
And
ENVS 5300 Natural Resources Law and Policy (2 cr) **or**
ENVS 5320 Water Law and Policy in the United States (3 cr).....2 or 3

Elective Courses (8-9 credits)
Because of ongoing changes in the curricular offerings of the participating departments, the list of Natural Resource and Environmental Policy Graduate Certificate elective courses is updated annually. Students entering the program should immediately obtain a current list of electives from the program coordinator or staff assistant. Students may petition the program coordinator to use as electives courses not included on the current list; however, to gain approval as an elective, a course must have significant environmental or natural resource policy content.

Approved elective courses include the following:
ASTE 6260 Environmental Impacts of Agricultural Systems.....3
AWER 6330 Large River Management.....3
ECON 6500 Introduction to Natural Resource Economics.....3
ECON 6510 Introduction to Environmental Economics.....3
ENVS 5640/6640 Conflict Management in Natural Resources.....3
ENVS 6000/7000 Theoretical Foundations in Human Dimensions of Ecosystem Science and Management.....3
ENVS 6130 Policy Aspects of Wildland Recreation.....3
ENVS 6530 Natural Resources Administration.....2
HIST 6460 Seminar in Environmental History.....3
POLS 5200 Global Environment.....3
SOC 6620 Environment, Technology, and Social Change.....3
SOC 6630 Natural Resources and Social Development.....3
SOC 7620 Sociology of Environmental Hazards and Risks.....3

Master of Natural Resources (MNR)

Degree Coordinator: Todd A. Crowl

Location: Natural Resources 108

Phone: (435) 797-7565

FAX: (435) 797-2443

E-mail: facrowl@cc.usu.edu

WWW: http://www.cnr.usu.edu

Degree offered: Master of Natural Resources (MNR)

Objectives

The Master of Natural Resources (MNR) is a professional degree designed to prepare students to work in the interdisciplinary context of the 21st Century. It is a nonthesis program, intended for students and practicing professionals with a career orientation in natural resource management.

Admission Requirements

All MNR students are admitted through one of the three College of Natural Resources departments, following School of Graduate Studies standard procedures and policies (see pages 93-94). As with other USU master's degrees, each student must be accepted by a faculty member (major professor) who agrees to guide the student in the MNR program.

Undergraduate prerequisites include courses in chemistry, physics, botany, zoology, ecology, economics, political science, algebra, and statistics; and at least three courses in natural resources disciplines. Students without undergraduate degrees in natural resources or similar majors will be required to make up deficiencies in undergraduate preparation prior to beginning MNR degree coursework.

Course Requirements

The degree program includes two required core courses, courses in specified topic areas, and elective courses. The specific coursework required for each student will be determined by the major professor and the two other members of the student's graduate supervisory committee.

Cooperative Nursing Program

Coordinator: Lori Hart
Location: Lundberg Building 201
Phone: (435) 797-1515
FAX: (435) 797-3649
E-mail: lhart@cc.usu.edu
WWW: http://colleges.weber.edu/chp/programs/nursing.asp

Advisor:
Doug Watson, (801) 626-6128 *or* (800) 350-7042 (Utah only), healthprofessions@weber.edu

Undergraduate Programs

Associate Degree Program Objectives

Weber State University and Utah State University jointly offer an Associate of Science degree or an Associate of Applied Science degree in Nursing at Logan.

All nursing theory, University Studies, and laboratory practice classes are offered on the Utah State University campus and in health service agencies within Box Elder and Cache Counties.

Weber State University admits the prospective student and grants the Associate of Science degree or the Associate of Applied Science degree upon the student's completion of the course. The student participates in pinning ceremonies held on the Utah State University Campus and graduation ceremonies held on the Weber State University campus.

Departmental Admission Requirements for Associate Degree Program

Students apply for admission to the Cooperative Nursing Program by contacting the coordinator of the program, Lundberg Building, Room 201, 3250 Old Main Hill, Utah State University, Logan UT 84322-3250.

The student's application is handled through the Office of Nursing Admissions, Weber State University, Ogden UT 84408. Applicants have until February 1 to complete their application process. All application forms must be completed and sent to the Nursing Program admissions advisor at Weber State University. Notifications of status are sent to applicants around April 15.

A graduate of this program is eligible to write the State Board licensing examination to become a registered nurse. The program is accredited by the Utah State Board of Nursing and the National League of Nursing Accrediting Commission.

Students admitted to the program have the prerogative of taking the licensing examination for Practical Nursing upon an equivalency basis with the completion of the first year's course of studies.

Curriculum for Associate Degree Program

The curriculum for the associate degree is planned over a six-semester period, using two academic years plus two summer semesters. It is planned to include a broad University Studies program concurrently with courses in Nursing. A grade of *B* or higher is required for all lower-division nursing courses, and a grade of *C* or higher is required for all support classes.

Graduation Requirements

Associate of Science Degree in Nursing (Weber State University) (3.0 overall GPA minimum)

Students must complete all prerequisite courses listed *before* beginning fall nursing classes. A grade of *C* or better must be achieved in each of these courses in order for the student to remain in the Nursing Program.

First Year
Summer Semester (or prior college credit)
BIOL 2000 Human Physiology 4
BIOL 2010 Human Anatomy 4
CHEM 1110 (BPS) General Chemistry I (Prereq: MATH 1050) 4
Breadth Humanities (BHU) elective 3

Note: If CHEM 1110 is taken at another university, MATH 1030, MATH 1050, or STAT 1040 must be completed before graduation with an AAS or AS degree.

Fall Semester
BIOL 1110 Elementary Microbiology (4 cr) **or**
BIOL 1100 Introduction to Microbiology (Home Study only) (3 cr) . 3 or 4
NFS 1020 (BLS) Science and Application of Human Nutrition 3
NURS 1030 Foundations of Nursing Practice 3
NURS 1031 Foundations of Nursing Practice Clinical 3
NURS 1050 Treatment Modalities 3

Spring Semester
PSY 1010 (BSS) General Psychology 3
HS 2230 Introductory Pathophysiology 3
NURS 1040 Women's Health and the Childbearing Family 2
NURS 1041 Women's Health and the Childbearing Family Clinical 1
NURS 1045 Nursing Care of Adults and Children 3
NURS 1046 Nursing Care of Adults and Children Clinical 2

Second Year
Summer Semester
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
Breadth Social Sciences (BSS)/Diversity elective (SOC 1010) 3
Breadth Creative Arts (BCA) elective 3
Computer and Information Literacy (CIL) competency exam

Fall Semester
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
NURS 2050 Treatment Modalities 2
NURS 2070 Nursing Care of Adults and Children II 3
NURS 2071 Nursing Care of Adults and Children II Clinical 4
Breadth American Institutions (BAI) elective 3

Spring Semester
NURS 2060 Psychiatric/Mental Health Nursing 2
NURS 2061 Psychiatric/Mental Health Nursing Clinical 1
NURS 2080 Patient Care Management 2
NURS 2081 Patient Care Management Clinical 3
Breadth Humanities (BHU) elective 3
Quantitative Literacy (QL) 3

Cooperative Nursing Program

Associate of Applied Science Degree in Nursing (Weber State University) (3.0 overall GPA minimum)

Students must complete all prerequisite courses listed *before* beginning fall nursing classes. A grade of *C* or better must be achieved in each of these courses in order for the student to remain in the Nursing Program.

First Year

Summer Semester (or prior college credit)
BIOL 2000 Human Physiology 4
BIOL 2010 Human Anatomy 4
CHEM 1110 (BPS) General Chemistry I (Prereq: MATH 1050) 4

Note: If CHEM 1110 is taken at another university, MATH 1030, MATH 1050, or STAT 1040 must be completed before graduation with an AAS or AS degree.

Fall Semester
BIOL 1110 Elementary Microbiology (4 cr) **or**
BIOL 1100 Introduction to Microbiology (Home Study only) (3 cr) . 3 or 4
NFS 1020 (BLS) Science and Application of Human Nutrition 3
NURS 1030 Foundations of Nursing Practice 3
NURS 1031 Foundations of Nursing Practice Clinical 3
NURS 1050 Treatment Modalities 3

Spring Semester
PSY 1010 (BSS) General Psychology 3
HS 2230 Introductory Pathophysiology 3
NURS 1040 Women's Health and the Childbearing Family 2
NURS 1041 Women's Health and the Childbearing Family Clinical 1
NURS 1045 Nursing Care of Adults and Children 3
NURS 1046 Nursing Care of Adults and Children Clinical 2

Second Year

Summer Semester
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
Breadth Humanities (BHU) elective 3

Fall Semester
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
NURS 2050 Treatment Modalities 2
NURS 2070 Nursing Care of Adults and Children II 3
NURS 2071 Nursing Care of Adults and Children II Clinical 4

Spring Semester
NURS 2060 Psychiatric/Mental Health Nursing 2
NURS 2061 Psychiatric/Mental Health Nursing Clinical 1
NURS 2080 Patient Care Management 2
NURS 2081 Patient Care Management Clinical 3

Additional Information

For detailed information about course requirements for the Associate of Science and Associate of Applied Science degrees in Nursing, see the major requirement sheet, available from the Nursing Program, or online at: **http://www.usu.edu/ats/majorsheets/**

Nursing Program Faculty

Assistant Professors
Charlotte Harris
Lori Hart
Jon Kelly
Jeanne Kirby
Julie O'Brien
Linda Richards
Kelly Shoell

Course Descriptions

Nursing (NURS), page 566

Department of Nutrition and Food Sciences

Department Head: Charles E. Carpenter
Location: Nutrition and Food Sciences 213
Phone: (435) 797-2126
FAX: (435) 797-2379
E-mail: nfs@cc.usu.edu
WWW: http://www.usu.edu/nfs

Undergraduate Advisor:
Emily W. Hoffman, Nutrition and Food Sciences 222, (435) 797-2131

Degrees offered: Bachelor of Science (BS), Master of Science (MS), and Doctor of Philosophy (PhD) in Nutrition and Food Sciences; Master of Food Microbiology and Safety (MFMS); Master of Dietetics Administration (MDA)

Undergraduate emphases: *BS*—Food Science, Food Technology Management, Nutrition Science, Biotechnology, Dietetics, and Culinary Arts/Food Service Management

Graduate specializations: *MS, PhD*—Dietetics, Food Biotechnology, Food Chemistry, Food Engineering, Food Microbiology, Food Processing, Human Nutrition, and Nutrient Metabolism

Undergraduate Programs

Objectives

The Department of Nutrition and Food Sciences has the following three objectives:

1. To provide students with the scientific/academic background necessary to function well in further academic pursuits or future work environments.

2. To provide students with the critical thinking and problem solving skills necessary to enhance further academic pursuits or future work environments.

3. To provide students with practical application and work experience credentials to provide personal and employment satisfaction.

Program Emphases and Career Opportunities

Food Science
Students receive an excellent background in chemistry, engineering, food processing, statistics, sensory evaluation, and microbiology. The Food Science program is approved by the Institute of Food Technologists. Graduates are in demand by industry for positions in research, quality control/assurance, product development, and processing. Government laboratories and regulatory agencies also hire food science graduates. With a food science degree, students can also qualify to enter graduate school.

Food Technology Management
The Food Technology Management program gives students a broad background in basic food science and in business administration to be applied to the business-oriented aspects of the food industry. Students also qualify for a Business Production Minor. Graduates are sought by private food industry and public institutions in management positions.

Nutrition Science
The Nutrition Science emphasis is for students who are interested in studying the molecular and cellular bases of human health and disease. This is a multi-disciplinary program in which students learn to apply techniques from the fields of molecular and cellular biology, physiology, genetics, and biochemistry to issues in nutrition. Students will gain experience in laboratory, clinical, and epidemiological methods, and may have the opportunity to gain laboratory research experience in nutrition studies being conducted by faculty members. The undergraduate Bachelor of Science degree qualifies a student with the Nutrition Science emphasis to find employment in industry or academic laboratories, as well as in government agencies. It can also be used as preparation for medical or graduate school.

Biotechnology
The Biotechnology emphasis gives students a specialized background in biotechnology with depth training in either Food Science or Nutrition Science. Graduates of the program will be well-qualified to pursue biotechnology-related positions related to their depth area of choice.

Dietetics
This emphasis is a Bachelor of Science program that prepares students to become registered dietitians with professional skills in clinical nutrition, community/public health nutrition, and food service management. Students should complete prerequisites and apply by March 15 of their sophomore year. Within this program, USU offers two options: the **Coordinated Program in Dietetics (CPD)** and the **Didactic Program in Dietetics (DPD)**, which are both accredited by the Commission on Accreditation for Dietetics Education of The American Dietetic Association, 20 South Riverside Plaza Suite 2000, Chicago IL 60606-6995, (312) 899-0040. Each of these programs is described below:

1. **Coordinated Program in Dietetics (CPD).** In addition to coursework, students complete 1,000 internship hours during their junior and senior years. Students should complete prerequisites and apply by mid-March of their sophomore year. Twelve students are accepted annually, and seniors must relocate to Salt Lake City during fall semester. Graduates are eligible to take the national registration exam upon completion of the BS degree.

2. **Didactic Program in Dietetics (DPD).** After completing prerequisites, students should apply by mid-March of their sophomore year. Twelve students are accepted annually. Upon completion of coursework required for the BS degree, students apply for internships (located throughout the U.S., including the Utah-based USU Extension Dietetic Internship Program). Graduates are eligible to take the national registration exam upon completion of their internship.

Culinary Arts/Food Service Management
This emphasis prepares students in the art and science of culinary arts, and provides the management principles needed to effectively manage a food service operation, including human resource management, financial management, time management, communications, etc. Students are required to obtain a minor in BA Marketing, MHR Management, or MHR Human Resource Management.

Completion of courses required for the Food Science Emphasis, Nutrition Science emphasis, or Dietetics emphasis may be suitable preparation for students planning to apply to medical school.

Bachelor of Science Requirements

Departmental Admission Requirements
Admission requirements for the Department of Nutrition and Food Sciences are the same as those described for the University on pages

16-19. Students in good standing may apply for admission to the department. Students planning to major in Nutrition and Food Sciences should take algebra, chemistry, and biology in high school.

Graduation Requirements

All graduates from the department must have completed one of the six emphasis areas in the department and must meet the following minimum requirements:

1. Grade point average (GPA) must be 2.5 or higher in all courses required for the major.
2. A grade of *C* or better must be received in all courses required for the major.
3. Courses required for the major may be repeated only once to improve a grade.
4. Courses required for the major may not be taken as *Pass-D-Fail* credits.

Minor in Food Sciences

Students with majors outside of the Nutrition and Food Sciences Department may graduate with a minor in Food Sciences by completing NFS 1020, 3110, 4070, 5020 (or 5030), and 5510 with a minimum cumulative GPA of 2.5 for these courses.

Major and Emphasis Requirements

Specific requirements for each emphasis are listed below. Requirements change periodically, and sequence of courses is important.

Food Science Emphasis

Courses followed by an asterisk (*) are suggested for fulfilling University Studies Requirements.

Freshman Year

Fall Semester

NFS 1000 World of Food and Nutrition 1
CHEM 1210 Principles of Chemistry I 4
CHEM 1230 Chemical Principles Laboratory I 1
NFS 1020 (BLS) Science and Application of Human Nutrition 3
MATH 1050 (QL) College Algebra 4
MATH 1060 Trigonometry 2

Spring Semester

NFS 1250 Sanitation and Safety 3
CHEM 1220 (BPS) Principles of Chemistry II 4
CHEM 1240 Chemical Principles Laboratory II 1
ECON 1500 (BAI)* Introduction to Economic Institutions, History, and Principles 3
MATH 1210 (QL) Calculus I 4

Sophomore Year

Fall Semester

NFS 3110 Food, Technology, and Health 3
BIOL 1210 Biology I 4
CHEM 2300 Principles of Organic Chemistry 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
USU 1320 (BHU)* Civilization: Humanities 3

Spring Semester

NFS 4070 Experimental Foods 4
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
CHEM 2330 Organic Chemistry Laboratory I 1
CHEM 3700 Introductory Biochemistry 3
CHEM 3710 Introductory Biochemistry Laboratory 1
STAT 3000 (QI) Statistics for Scientists 3

Junior Year

Fall Semester

NFS 5020 Meat Technology and Processing 4
NFS 5560 Food Chemistry 4
BIOL 3300 General Microbiology 4
PHYX 2110 The Physics of Living Systems I 4

Spring Semester

NFS 3100 (QI) Sensory Evaluation of Food 3
NFS 5110 (CI) Food Microbiology 4
NFS 5500 (QI) Food Analysis 4
PLSC 4600 (QI) Cereal Science (may be taken senior year) 3

Summer Semester

NFS 3250 Occupational Experience in Nutrition and Food Sciences 1

Senior Year

Fall Semester

NFS 4440 (QI) Fundamentals of Food Engineering 4
NFS 5030 Dairy Technology and Processing 4
NFS 5920 (CI) Food Product Development 3
SPCH 3330 (DSS) Intercultural Communication 3

Spring Semester

NFS 4990 Nutrition and Food Sciences Seminar 1
NFS 5510 Food Laws and Regulations (may be taken junior year) 2
PHIL 4310 (DHA)* Philosophy of Science 3
STAT 5300 (QI) Statistical Process Control 3
USU 1330 (BCA)* Civilization: Creative Arts 3
USU 1340 (BSS)* Social Systems and Issues 3

Food Technology Management Emphasis

Courses followed by an asterisk (*) are suggested for fulfilling University Studies Requirements.

Freshman Year

Fall Semester

CHEM 1110 (BPS) General Chemistry I 4
NFS 1000 World of Food and Nutrition 1
NFS 1020 (BLS) Science and Application of Human Nutrition 3
NFS 1240 Culinary Basics 3
MATH 1050 (QL) College Algebra 4

Spring Semester

CHEM 1120 (BPS) General Chemistry II 4
CHEM 1130 General Chemistry Laboratory 1
USU 1320 (BHU)* Civilization: Humanities 3
NFS 1250 Sanitation and Safety 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3

Sophomore Year

Fall Semester

MATH 1100 (QL) Calculus Techniques 3
MHR 3110 (DSS) Managing Organizations and People 3
NFS 3110 Food, Technology, and Health 3
BIOL 1110 Elementary Microbiology 4
USU 1330 (BCA)* Civilization: Creative Arts 3

Spring Semester
NFS 4070 Experimental Foods 4
BA 3500 Fundamentals of Marketing 3
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
STAT 3000 (QI) Statistics for Scientists 3
PHYX 1200 (BPS) Introduction to Physics by Hands-on Exploration ... 4

Junior Year
Fall Semester
NFS 5030 Dairy Technology and Processing 4
NFS 5560 Food Chemistry 4
BA 3700 Operations Management 3
PSY 1010 (BSS)* General Psychology 3
ECON 1500 (BAI)* Introduction to Economic Institutions, History, and Principles 3

Spring Semester
NFS 3100 (QI) Sensory Evaluation of Food 3
NFS 5110 (CI) Food Microbiology 4
NFS 5500 (QI) Food Analysis 4
STAT 5300 (QI) Statistical Process Control 3

Summer Semester
NFS 3250 Occupational Experience in Nutrition and Food Sciences ... 1

Senior Year
Fall Semester
NFS 5020 Meat Technology and Processing 4
NFS 5920 (CI) Food Product Development 3
BA 4720 Production Planning and Control 3
BA 5730 Process Analysis and Improvement 3

Spring Semester
NFS 4990 Nutrition and Food Sciences Seminar 1
NFS 5510 Food Laws and Regulations (may be taken junior year) 2
BA 4790 Supply Chain Management 3
PHIL 4310 (DHA)* Philosophy of Science 3
SPCH 2600 (CI) Interpersonal Communication 3
ACCT 2010 Survey of Accounting I 3

Nutrition Science Emphasis
Courses followed by an asterisk (*) are suggested for fulfilling University Studies Requirements.

Freshman Year
Fall Semester
NFS 1000 World of Food and Nutrition 1
CHEM 1210 Principles of Chemistry I 4
CHEM 1230 Chemical Principles Laboratory I 1
BIOL 1210 Biology I 4
MATH 1050 (QL) College Algebra 4

Spring Semester
NFS 1020 (BLS) Science and Application of Human Nutrition 3
CHEM 1220 (BPS) Principles of Chemistry II 4
CHEM 1240 Chemical Principles Laboratory II 1
BIOL 1220 (BLS) Biology II 4
MATH 1060 Trigonometry 2

Sophomore Year
Fall Semester
NFS 3110 Food, Technology, and Health 3
CHEM 2300 Principles of Organic Chemistry (3 cr) **or**
CHEM 2310 Organic Chemistry I (4 cr) ..... 3 or 4
CHEM 2330 Organic Chemistry Laboratory I 1
USU 1330 (BCA)* Civilization: Creative Arts 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
BIOL 2000 Human Physiology 4

Spring Semester
NFS 2020 Nutrition Throughout the Life Cycle 3
MATH 1210 (QL) Calculus I 4
CHEM 3700 Introductory Biochemistry 3
CHEM 3710 Introductory Biochemistry Laboratory 1
USU 1320 (BHU)* Civilization: Humanities 3
ECON 1500 (BAI)* Introduction to Economic Institutions, History, and Principles 3

Junior Year
Fall Semester
NFS 4020 Advanced Nutrition 3
NFS 4550 Nutrition Assessment/Clinical Nutrition I 4
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
USU 1340 (BSS)* Social Systems and Issues 3
STAT 3000 (QI) Statistics for Scientists 3

Spring Semester
NFS 4070 Experimental Foods 4
NFS 5210 Advanced Public Health Nutrition 2
Univ. Studies Depth Humanities and Creative Arts (DHA) Course 3

Summer Semester
NFS 3250 Occupational Experience in Nutrition and Food Sciences ... 2

Senior Year
Fall Semester
NFS 5220 Endocrine Aspects of Nutrition 2
Univ. Studies Depth Social Sciences (DSS) Course 3

Spring Semester
NFS 4990 Nutrition and Food Sciences Seminar 1
NFS 5300 Advanced Micronutrient Nutrition 3
NFS 5370 Molecular Methods in Nutrition Science 2

Electives
Students in the Nutrition Science Emphasis must select 20 credits from the following courses to meet their career objectives.

NFS 1250 Sanitation and Safety (Sp) 3
NFS 3020 Nutrition and Physical Performance (F) 2
NFS 3600 Medical Technology for Health Care Professionals (F,Sp,Su) 1
NFS 4480 Community Nutrition (F) 3
NFS 5200 Nutritional Epidemiology (F) 2
NFS 5500 (QI) Food Analysis (Sp) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4
PUBH 4030 Communicable Disease Control (F) 3
PHYX 2110 The Physics of Living Systems I 4
PHYX 2120 (BPS) The Physics of Living Systems II 4
BIOL 2010 Human Anatomy (Sp,Su) 4
BIOL 3200 (QI) Principles of Genetics (F,Sp) 4
BIOL 3300 General Microbiology (F,Sp) 4
BIOL 5210 Cell Biology (F) 3
BIOL 5230 Developmental Biology (Sp) 3
BIOL 5620 Medical Physiology (Sp) 3
CHEM 2320 Organic Chemistry II (Sp) 4

Biotechnology Emphasis

Students selecting the Biotechnology Emphasis must choose either **Depth Training in Food Science** or **Depth Training in Nutrition Science**. Courses followed by an asterisk (*) are suggested for fulfilling University Studies Requirements.

Depth Training in Food Science

Freshman Year

Fall Semester

NFS 1000 World of Food and Nutrition 1
NFS 1020 (BLS) Science and Application of Human Nutrition 3
CHEM 1210 Principles of Chemistry I 4
CHEM 1230 Chemical Principles Laboratory I 1
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
MATH 1050 (QL) College Algebra 4

Spring Semester

NFS 2040 Introduction to Biotechnology 1
CHEM 1220 (BPS) Principles of Chemistry II 4
CHEM 1240 Chemical Principles Laboratory II 1
MATH 1100 (QL) Calculus Techniques 3
USU 1320 (BHU)* Civilization: Humanities 3
ECON 1500 (BAI)* Introduction to Economic Institutions, History, and Principles 3

Sophomore Year

Fall Semester

NFS 3110 Food, Technology, and Health 3
BIOL 1210 Biology I 4
CHEM 2300 Principles of Organic Chemistry 3
CHEM 2330 Organic Chemistry Laboratory I 1
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3

Spring Semester

BIOL 3200 (QI) Principles of Genetics 4
BIOL 3300 General Microbiology 4
CHEM 3700 Introductory Biochemistry 3
CHEM 3710 Introductory Biochemistry Laboratory 1
STAT 3000 (QI) Statistics for Scientists 3

Junior Year

Fall Semester

NFS 5260 Methods in Biotechnology: Molecular Cloning 3
NFS 5560 Food Chemistry 4
SPCH 3330 (DSS) Intercultural Communication 3
PHYX 2110 The Physics of Living Systems I 4

Spring Semester

NFS 3100 (QI) Sensory Evaluation of Food 3
NFS 5110 (CI) Food Microbiology 4
NFS 5500 (QI) Food Analysis 4
NFS 5510 Food Laws and Regulations 2
PLSC 4600 (QI) Cereal Science 3

Summer Semester

NFS 3250 Occupational Experience in Nutrition and Food Sciences 1

Senior Year

Fall Semester

NFS 5920 (CI) Food Product Development 3
NFS 5020 Meat Technology and Processing (4 cr) **or**
NFS 5030 Dairy Technology and Processing (4 cr) 4
PHIL 4410 (DHA)* Philosophy of Mind 3
USU 1330 (BCA)* Civilization: Creative Arts 3
USU 1340 (BSS)* Social Systems and Issues 3

Spring Semester

ADVS 3200 Ethical Issues in Genetic Engineering and Biotechnology 3
NFS 4990 Nutrition and Food Sciences Seminar 1
NFS 5160 Methods in Biotechnology: Cell Culture 3
NFS 5240 Methods in Biotechnology: Protein Purification Techniques 3
NFS 5370 Molecular Methods in Nutrition Science 2
STAT 5200 Design of Experiments 3

Depth Training in Nutrition Science

Freshman Year

Fall Semester

NFS 1000 World of Food and Nutrition 1
CHEM 1210 Principles of Chemistry I 4
CHEM 1230 Chemical Principles Laboratory I 1
BIOL 1210 Biology I 4
MATH 1050 (QL) College Algebra 4

Spring Semester

NFS 1020 (BLS) Science and Application of Human Nutrition 3
CHEM 1220 (BPS) Principles of Chemistry II 4
CHEM 1240 Chemical Principles Laboratory II 1
BIOL 1220 (BLS) Biology II 4
MATH 1060 Trigonometry 2

Sophomore Year

Fall Semester

BIOL 2000 Human Physiology 4
BIOL 3200 (QI) Principles of Genetics 4
CHEM 2300 Principles of Organic Chemistry 3
CHEM 2330 Organic Chemistry Laboratory I 1
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
MATH 1100 (QL) Calculus Techniques 3

Spring Semester

NFS 2020 Nutrition Throughout the Life Cycle 3
NFS 2040 Introduction to Biotechnology 1
CHEM 3700 Introductory Biochemistry 3
CHEM 3710 Introductory Biochemistry Laboratory 1
USU 1320 (BHU)* Civilization: Humanities 3
ECON 1500 (BAI)* Introduction to Economic Institutions, History, and Principles 3

Junior Year

Fall Semester

STAT 3000 (QI) Statistics for Scientists 3
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
NFS 4020 Advanced Nutrition 3
PHYX 2110 The Physics of Living Systems I 4
USU 1330 (BCA)* Civilization: Creative Arts 3

Spring Semester

NFS 5370 Molecular Methods in Nutrition Science 2
BIOL 5620 Medical Physiology 3
USU 1340 (BSS)* Social Systems and Issues 3
Univ. Studies Depth Humanities and Arts (DHA) Course 3

Senior Year

Fall Semester

NFS 5200 Nutritional Epidemiology 2
NFS 5220 Endocrine Aspects of Nutrition 2
NFS 5260 Methods in Biotechnology: Molecular Cloning 3
BIOL 3300 General Microbiology 4

BIOL 5210 Cell Biology 3
Univ. Studies Depth Social Sciences (DSS) Course 3

Spring Semester
ADVS 3200 Ethical Issues in Genetic Engineering and Biotechnology 3
BIOL 5150 Immunology 3
NFS 4990 Nutrition and Food Sciences Seminar 1
NFS 5160 Methods in Biotechnology: Cell Culture 3
NFS 5240 Methods in Biotechnology: Protein Purification Techniques 3

Dietetics Emphasis

Students selecting the Dietetics Emphasis must choose either the **Coordinated Program in Dietetics (CPD)** or the **Didactic Program in Dietetics (DPD)**.

Coordinated Program in Dietetics (CPD)

Freshman Year

Fall Semester
NFS 1020 (BLS) Science and Application of Human Nutrition 3
NFS 1240 Culinary Basics 3
CHEM 1210 Principles of Chemistry I 4
MATH 1050 (QL) College Algebra 4
PSY 1010 (BSS) General Psychology (3 cr) **or**
SOC 1010 (BSS) Introductory Sociology (3 cr) 3

Spring Semester
CHEM 1220 (BPS) Principles of Chemistry II 4
ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles 3
USU 1330 (BCA) Civilization: Creative Arts 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
NFS 2020 Nutrition Throughout the Life Cycle 3

Sophomore Year

Fall Semester
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
CHEM 2300 Principles of Organic Chemistry 3
NFS 3020 Nutrition and Physical Performance 2
STAT 2000 (QI) Statistical Methods (required) (3 cr) **or**
STAT 3000 (QI) Statistics for Scientists (preferred) (3 cr) 3
BIOL 2000 Human Physiology 4
USU 1320 (BHU) Civilization: Humanities 3

Spring Semester
CHEM 3700 Introductory Biochemistry 3
CHEM 3710 Introductory Biochemistry Laboratory 1
NFS 1250 Sanitation and Safety 3
NFS 3600 Medical Terminology for Health Care Professionals 1
NFS 4070 Experimental Foods 4
MHR 3110 (DSS) Managing Organizations and People (3 cr) **or**
FCHD 3350 (DSS/QI) Family Finance (3 cr) 3
Univ. Studies Depth Humanities and Creative Arts (DHA) Course 3

Junior Year

Fall Semester
NFS 4020 Advanced Nutrition 3
NFS 4050 (CI) Education and Counseling Methods in Dietetics I 2
NFS 4480 Community Nutrition 3
NFS 4550 Nutrition Assessment/Clinical Nutrition I 4
NFS 4570 Clinical Nutrition Experience I 1
NFS 4710 Quantity Food Preparation 2
NFS 4730 Quantity Food Preparation Lab 2

Spring Semester
NFS 4060 (CI) Education and Counseling Methods in Dietetics II 2
NFS 4560 (CI) Clinical Nutrition II 4
NFS 4580 Clinical Nutrition Experience II 2
NFS 4720 (QI) Food Service Organization and Management 2
NFS 4740 Food Service Organization and Management Lab 2

Senior Year

Fall Semester
NFS 4660 (CI) Medical Dietetics 12
NFS 4780 (CI) Maternal and Child Nutrition 4

Spring Semester
NFS 4420 (QI) Nutrition Research Methodology 2
NFS 4750 Management of Dietetics 3
NFS 4990 Nutrition and Food Sciences Seminar 1
NFS 5210 Advanced Public Health Nutrition 2
NFS 5300 Advanced Micronutrient Nutrition 3
NFS 5750 Advanced Dietetics Practicum 3

Didactic Program in Dietetics (DPD)

Freshman Year

Fall Semester
NFS 1020 (BLS) Science and Application of Human Nutrition 3
NFS 1240 Culinary Basics 3
CHEM 1210 Principles of Chemistry I 4
MATH 1050 (QL) College Algebra 4
PSY 1010 (BSS) General Psychology (3 cr) **or**
SOC 1010 (BSS) Introductory Sociology (3 cr) 3

Spring Semester
CHEM 1220 (BPS) Principles of Chemistry II 4
ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
NFS 2020 Nutrition Throughout the Life Cycle 3
USU 1330 (BCA) Civilization: Creative Arts 3

Sophomore Year

Fall Semester
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
CHEM 2300 Principles of Organic Chemistry 3
NFS 3020 Nutrition and Physical Performance 2
STAT 2000 (QI) Statistical Methods (required) (3 cr) **or**
STAT 3000 (QI) Statistics for Scientists (preferred) (3 cr) 3
BIOL 2000 Human Physiology 4
USU 1320 (BHU) Civilization: Humanities 3

Spring Semester
CHEM 3700 Introductory Biochemistry 3
CHEM 3710 Introductory Biochemistry Laboratory 1
NFS 1250 Sanitation and Safety 3
NFS 3600 Medical Terminology for Health Care Professionals 1
NFS 4070 Experimental Foods 4
MHR 3110 (DSS) Managing Organizations and People (3 cr) **or**
FCHD 3350 (DSS/QI) Family Finance (3 cr) 3
Univ. Studies Depth Humanities and Creative Arts (DHA) Course 3

Junior Year

Fall Semester
NFS 4020 Advanced Nutrition 3
NFS 4050 (CI) Education and Counseling Methods in Dietetics I 2
NFS 4480 Community Nutrition 3
NFS 4550 Nutrition Assessment/Clinical Nutrition I 4
NFS 4710 Quantity Food Preparation 2

Spring Semester
NFS 4060 (CI) Education and Counseling Methods in Dietetics II 2
NFS 4560 (CI) Clinical Nutrition II 4
NFS 4720 (QI) Food Service Organization and Management 2
SPCH 1050 (CI) Public Speaking (3 cr) **or**
SPCH 2600 (CI) Interpersonal Communication (3 cr) **or**
SPCH 3330 (DSS) Intercultural Communication (3 cr) 3

Senior Year
Fall Semester
NFS 4780 (CI) Maternal and Child Nutrition 3
NFS 5200 Nutritional Epidemiology 2
NFS 5750 Advanced Dietetics Practicum 3
ACCT 2010 Survey of Accounting I 3
BA 3500 Fundamentals of Marketing 3

Spring Semester
NFS 4750 Management of Dietetics 3
NFS 4990 Nutrition and Food Sciences Seminar 1
NFS 5210 Advanced Public Health Nutrition 2
NFS 5300 Advanced Micronutrient Nutrition 3

Culinary Arts/Food Service Management Emphasis

Courses followed by an asterisk (*) are suggested for fulfilling University Studies Requirements.

Freshman Year
Fall Semester
NFS 1000 World of Food and Nutrition 1
NFS 1020 (BLS) Science and Application of Human Nutrition 3
NFS 1240 Culinary Basics 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose 3
MATH 1030 (QL) Quantitative Reasoning (3 cr) **or**
MATH 1050 (QL) College Algebra (4 cr) ..... 3 or 4
SPCH 2600 (CI) Interpersonal Communication 3

Spring Semester
NFS 1250 Sanitation and Safety 3
NFS 3510 The Business of Feeding 3
ECON 1500 (BAI)* Introduction to Economic Institutions, History, and Principles 3
CHEM 1010 (BPS)* Introduction to Chemistry 3
USU 1340 (BSS)* Social Systems and Issues 3

Sophomore Year
Fall Semester
NFS 2030 Catering 3
ACCT 2010 Survey of Accounting I 3
MHR 2990 Legal and Ethical Environment of Business 3
USU 1320 (BHU)* Civilization: Humanities 3
NFS 3000 Beginning Baking 4

Spring Semester
NFS 2050 Ala Carte (Front and Back House) 3
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode 3
BA 3500 Fundamentals of Marketing 3
BIS 3140 (QI)* Managing Personal Finances (taught through Center for Independent and Distance Learning *only*) 3
MHR 3110 (DSS) Managing Organizations and People 3

Junior Year
Fall Semester
NFS 3060 Garde-Manger 4
NFS 4250 Culinary Skills and Management Rotation 6
ID 1750 (BCA)* Design in Everyday Living 3

Spring Semester
NFS 3030 Advanced Baking 4
NFS 4250 Culinary Skills and Management Rotation 6-9

Summer Semester
NFS 4250 Culinary Skills and Management Rotation 3

Senior Year
Fall Semester
NFS 3110 Food, Technology, and Health 3
NFS 3500 Beverage Management 2
MHR 3710 Developing Team and Interpersonal Skills 3
Univ. Studies Depth Humanities and Creative Arts (DHA) Course 3
Univ. Studies Communications Intensive (CI) Course 3
Courses in the Minor

Spring Semester
NFS 4810 History and Practices in World Cuisines 4
NFS 4990 Nutrition and Food Sciences Seminar 1
Courses in the Minor

Culinary Arts/Food Service Management Minors

Students in the Culinary Arts/Food Service Management emphasis must also fulfill requirements for one of the following three minors:

Marketing Minor (Business Administration Dept.)
STAT 2300 (QL) Business Statistics (F,Sp,Su) 4

Select two of the following courses:
BA 4510 Buyer Behavior (F,Sp) 3
BA 4530 Marketing Research (F,Sp) 3
BA 4540 Marketing Institutions (F,Sp) 3
BA 4550 Promotion Management (F,Sp) 3

Management Minor (Management and Human Resources Dept.)
Select one of the following courses:
MHR 3720 (DSS) Leading Organization Change 3
MHR 3810 (DSS) Employment Law and Policy Development 3
MHR 3820 (DSS) International Management (F,Sp) 3
MHR 4630 Human Resource Management (F,Sp) 3

Human Resource Management Minor (Management and Human Resources Dept.)
MHR 4630 Human Resource Management (F,Sp) 3

An additional 9-10 elective credits are required to meet NFS degree requirements with the Management Minor *or* the Human Resource Management Minor. Students may choose elective courses.

Financial Support

The Department of Nutrition and Food Sciences and the College of Agriculture award scholarships in addition to those available through the University Financial Aid Office. Information and application forms may be obtained from the department office. Students may also contact the department for assistance in finding employment that will enhance their academic studies. Many students are employed by the department and by private firms near the University.

Assessment of Instruction

Information about assessment within each of the departmental programs can be found at:
http://www.usu.edu/nfs/assessment/index.htm

Department of Nutrition and Food Sciences

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Additional Information

For more information about Bachelor of Science requirements and the sequence in which courses should be taken, see major requirement sheet, available from the Nutrition and Food Sciences Department, or online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

MS and PhD Admission Requirements

Candidates for graduate study in the Department of Nutrition and Food Sciences need a background in chemistry, physics, mathematics, bacteriology, and physiology. Prior coursework in food science or nutrition is desirable. If deficient in these areas, a student may be accepted with the understanding that the supervisory committee will require competence equivalent to a BS degree in nutrition and food sciences in the preliminary (MS) or comprehensive (PhD) examination.

Students must meet some departmental requirements in addition to requirements of the School of Graduate Studies. A minimum score at the fortieth percentile in Verbal, Quantitative, and Analytical Writing on the Graduate Record Examination is required for admission.

One year of general chemistry, one semester of organic chemistry, and math at least equivalent to college algebra must be completed before matriculation. If taken as a graduate student, these courses will not be counted as graduate credit.

Before being accepted to work toward a PhD degree, a student must have obtained an MS degree or have a manuscript reporting original research accepted for publication in a refereed journal.

Before being accepted into the department, potential graduate students must be accepted by a faculty member who is willing to add them to his or her research team.

I. Research-based MS and PhD Programs

Progress toward an advanced degree is outlined in the School of Graduate Studies section (pages 97-101). Students are responsible to see that all requirements are fulfilled, and should read these procedures *carefully*.

Graduate students in the Department of Nutrition and Food Sciences should complete the following steps:

1. **Choose Major Professor.** Students are accepted into the department with a temporary advisor. Although this person must guarantee, at the time of acceptance, that the student may work in his or her research program, students may choose as their major professor any faculty member who can and is willing to accommodate them.

2. **Establish Supervisory Committee**. Faculty members who may serve on the student's supervisory committee should be considered in consultation with the major professor. A minimum of three members (at least two from the department), including the major professor, must be suggested for the MS program. At least five (three or more from the department and one or more from outside the department) must be suggested for a PhD program.

   When the student and major professor have agreed on the committee members, a *Supervisory Committee Assignment* form must be prepared. The department head must approve the committee and may add members. It is the student's responsibility to meet with proposed committee members to make certain they are able and willing to serve. The *Supervisory Committee Assignment* form is then forwarded to the dean of the School of Graduate Studies for final approval.

   The committee should be selected and the *Supervisory Committee Assignment* form submitted to the School of Graduate Studies no later than the second semester of an MS program or the third semester of a PhD program.

3. **Select and Define Research Program.** In consultation with the major professor, the student must choose a research area suitable for the MS thesis or PhD dissertation and prepare a Thesis or Dissertation Proposal. The proposal should include the following:

   a. Title

   b. Description of the problem based on the most current literature

   c. Statement of the purpose of the intended research

   d. Research plan

   e. List of the references cited in a form acceptable for publication in a scientific journal in the student's field

4. **Select and Define Program of Study.** Students must decide, in consultation with their major professor, the courses they will take that will be on their Program of Study. They must fulfill the following minimum requirements for all graduate students in Nutrition and Food Sciences and take other courses to provide the background necessary to conduct their research.

a. **Biochemistry (CHEM 5700, 5710)**—3 credits required for MS; 6 credits required for PhD.

b. **Statistics (STAT 5100, 5120, 5200, 5600)**—3 credits required for MS; 6 credits required for PhD.

c. **Graduate-level NFS courses**—PhD students must include 3 credits from NFS 6200, 6210, 6220, 6300, 6370; and 3 credits from NFS 6020, 6030, 6110, 6560.

d. **Additional graduate-level courses (from NFS or elsewhere)**—3 credits required for MS; 10 credits required for PhD.

e. **Graduate Seminar (NFS 7800)**—2 credits required for MS; 4 credits required for PhD.

f. **Graduate seminars in other departments**—1 credit required for MS; 2 credits required for PhD.

g. **Teaching experience (NFS 6900)**—2 credits required for PhD.

h. **Research (NFS 6970, 7970; assigned at discretion of the major professor**)—6-12 credits required for MS; approximately 30 credits required for PhD.

The PhD program includes 30 Master of Science credits. For more information, see the School of Graduate Studies requirements in this catalog.

5. **Meet with Supervisory Committee.** Before the first meeting of the supervisory committee, the student must complete the *Program of Study* form. A copy of the form and the research proposal should be given to each committee member several days before the meeting. The purpose of this meeting is to:

   a. Secure the committee's approval of the Program of Study. Deficiencies in academic background will be discussed and plans made to resolve them.

   b. Obtain the committee's approval of the research plan.

   c. Discuss regulated aspects of the research (hazardous materials, experimental animals, or human subjects).

   d. Allow the committee to determine the topic areas listed on the *Program of Study* form as other requirements of the program. All members of the committee and the department head must sign the Program of Study form before it is sent to the School of Graduate Studies.

6. **Begin Research and Continue Courses.** Students must take the approved courses and conduct the research as outlined in the approved research proposal.

7. **Take Oral Preliminary (MS) or Comprehensive (PhD) Examination.** The oral examination tests general knowledge that the student should have at this stage of academic training, as well as the student's ability to synthesize information in relation to nutrition and food science. Material to be included is determined by the committee, but emphasis is on knowledge applicable to the research.

8. **Complete Application for Candidacy Forms.** PhD candidates must submit the *Application for Candidacy* form to the School of Graduate Studies. It must be signed by all members of the committee at the end of the comprehensive examination, and then signed by the department head. This form must be received by the School of Graduate Studies at least three months before the dissertation defense.

9. **Complete Research and Write Thesis or Dissertation.**

10. **Departmental Seminar.** Each student must present a seminar in the department to report the results of his or her research. This must be done before the defense, but is typically given on the day of the defense.

11. **Final Examination (Thesis or Dissertation Defense).** When both the student and the major professor are satisfied that the thesis is editorially correct, copies are given to the members of the committee. This should be done several weeks before the examination. Students must realize that committee members will review the thesis only as their schedules permit. Students should plan adequate time for thesis review and revision before their defense, so as to meet the deadlines. The final examination is scheduled with the School of Graduate Studies. The signed appointment form must be submitted to the School of Graduate Studies at least ten business days before the defense, by all committee members, verifying that they have read the thesis or dissertation and it is ready to be defended at the scheduled day and time.

    The dean of the School of Graduate Studies will appoint one committee member, usually from outside the department, to serve as chair of the final examination. The School of Graduate Studies will also provide forms to be signed by the committee and returned to the School of Graduate Studies at the end of the defense.

12. **Submit Thesis or Dissertation.** After all changes suggested during the defense have been made, the thesis or dissertation is submitted to the departmental thesis reviewer, who will check to ensure that the thesis is in the correct format. The thesis or dissertation is submitted to the School of Graduate Studies for review by the thesis coordinator only after all corrections suggested by the departmental reviewer have been made.

II. Other Graduate Programs

Master of Food Microbiology and Safety (MFMS)

The MFMS degree is a professional degree designed to provide students with depth training in food safety assurance and the use of management systems such as HACCP. The degree is primarily intended for individuals planning careers in food quality assurance or other food safety-related positions in the food industry.

MFMS Admission Requirements

Students seeking entry into the MFMS program must satisfy the minimum admission requirements of the USU School of Graduate Studies and the NFS Department, and must also achieve a score of 3 (equivalent to the 40th percentile) or higher on the newly administered GRE Written Examination. Applications will be reviewed by the MFMS Advisory Committee, which is responsible for accepting students into the MFMS program and assigning them an advisor. The advisor will then consult with the student to select two additional graduate committee members.

MFMS Program of Study

The MFMS program of study has been tailored for students with undergraduate training in (1) food science or (2) microbiology or biology. Students who lack prerequisite competencies in food science, microbiology, or biology will be required to address those deficiencies during the MFMS program of study. Course requirements to meet specific deficiencies will be designated by the student's advisory committee and, in accordance with School of Graduate Studies policy, may or may not count toward course requirements for the MFMS program of study.

The MFMS program of study, outlined below, requires a minimum of 32 semester credits, including (1) 10 semester credits of core coursework in food safety assurance, microbiology, and epidemiology; (2) at least 19 semester credits of coursework based on the student's career goals and undergraduate competencies; and (3) the written preparation and oral presentation of a substantive literature review on a food safety topic.

MFMS Program Requirements (32 credits minimum)

Students must complete all of the following courses (12 credits): NFS 6170, 6200, 6900 (2 credits), 7800 (2 credits); BIOL 6810 (or 6890); and PUBH 5010. During NFS 6900 (Special Problems), students will prepare a substantive written literature review of a food safety topic. NFS 7800 (Seminar) must be taken during two semesters; during the final seminar, students must make an oral presentation on the food safety topic used for their literature review.

Students with a **BS degree in Food Sciences** must demonstrate competency equivalent to a USU BS degree in Nutrition and Food Sciences with a Food Science emphasis. These students must also select a minimum of 10 credits from the following: ADVS 6400; BIOL 5150 (offered biennially), 5300, 5330. The remaining credits should generally be selected from the following, although additional course substitutions may be made with approval of the student's advisory committee: NFS 6020, 6030, 6120, 6140 (offered biennially), 6210, 6500, 6510, 6600 (offered biennially), 6610; ASTE 6260; CHEM 6730.

Minimum program prerequisites for students with a **BS in biology, microbiology, or an equivalent degree** include the following (the USU equivalent course is listed in parentheses): biochemistry (CHEM 3700), general microbiology (BIOL 3300), microbial physiology (BIOL 5300), and statistics (STAT 3000). In addition, these students must complete *both* NFS 6110 and 6500, and must take *at least one* of NFS 6020 and 6030. The remaining credits should generally be selected from the following, although additional course substitutions may be made with approval of the student's advisory committee: NFS 6120, 6140 (offered biennially), 6210, 6510, 6600 (offered biennially), 6610; ADVS 6400; ASTE 6260; BIOL 5150 (offered biennially); CHEM 6730.

Master of Dietetics Administration (MDA)

The MDA degree is a professional degree designed to provide dietitians with in-depth training in management and leadership in food and nutrition program administration. Nationwide, there is a need for professionally trained managers at local, district, state, and federal levels in food and nutrition programs, including school, university, and hospital food services; public health programs; and clinical management. This program provides in-depth training in financial management, human resource management, marketing, and dietetics-specific management.

MDA Admission Requirements

Candidates for the MDA program must qualify for one of the following categories: *Option 1*: Must have completed the USU Extension Dietetics Internship; **or** *Option 2*: Must be currently registered as a dietitian with at least two years of work experience. Students seeking entry must also satisfy: (1) admission requirements of the USU School of Graduate Studies; and (2) admission requirements of the NFS Department.

The MDA Advisory Committee is responsible for reviewing applications, accepting students into the MDA program, and assigning students to an advisor.

MDA Program of Study

Option 1 is tailored for applicants who have completed the USU Extension Dietetics Internship. Students must complete a minimum of 41 credits and a Plan B thesis. The completed USU Extension Dietetics Internship provides 26 of the 41 credits. Following the internship, 15 additional credits are required including: NFS 6780, 6900 (3 credits), 6970 (2 credits), 7800 (1 credit), and two elective courses to be determined by the MDA candidate and the Advisory Committee.

Option 2 is tailored to the registered dietitian with at least two years of work experience. A minimum of 30 credits is required for this Plan B option. Students must complete 18 credits from the NFS Department and a minimum of 6 credits each in two of the three related disciplines. These disciplines include overall management, financial management, and human resource management. Coursework will be based on the student's career goals and competencies. The following courses are required: NFS 4750, 5200, 5210, 5510, 6750, 6780, 6900 (3 credits), 6970 (2 credits), and 7800 (1 credit). The remaining courses must be selected from the following: ACCT 6010; BA 3400, 6350, 6440, 6520; INST 6490; MHR 6350, 6370, 6410, 6500, 6510, 6550, 6630, 6760.

Registration Requirements for Graduate Students

Once admitted, students are required to maintain enrollment as follows: at least 3 credits to use University facilities and receive direction (including thesis or dissertation direction) from their major professor; at least 6 credits if on a Graduate Teaching or Research Assistantship (9 credits if employed less than 15 hours per week); at least 9 credits if on a Research Fellowship or unsupported; at least 6 credits if receiving tuition waivers, student loans, or other University-administered financial aid; and no more than 6 credits if employed full time by the University.

Financial Assistance

Some teaching assistantships and research fellowships and many research assistantships are available to graduate students in the Department of Nutrition and Food Sciences. Teaching assistantships are used to cover the teaching needs of the department. Research fellowships and research assistantships are available through individual faculty members. Most research assistantships are tied to specific research projects.

The Gandhi Scholarship is available, on a competitive basis, to support outstanding students during their graduate education in food science. Each incoming student may select any advisor who fits his or her area of interest in food science. Awards are available for entering master's degree students, as well as for PhD candidates. Applications are due February 1. To obtain an application, visit the Department of Nutrition and Food Sciences website or contact the departmental staff.

Career Opportunities

There is a continuing shortage of MS and PhD graduates in nutrition and food sciences. Many MS graduates go on to obtain a PhD, but all graduates have a wide choice of career opportunities.

Additional Information

Additional information and updates may be obtained by writing or telephoning the Department of Nutrition and Food Sciences directly or by checking out the departmental website at: **http://www.usu.edu/nfs**

Graduation requirements described in this catalog are subject to change. Students should check with the Department of Nutrition and Food Sciences concerning possible changes.

Nutrition and Food Sciences Faculty

Professors
Jeffery R. Broadbent, food science, microbial genetics
Charles E. Carpenter, food science, muscle biochemistry and physiology, meat processing
Daren P. Cornforth, food science, meat and muscle chemistry
Conly L. Hansen, food science, food engineering
Deloy G. Hendricks, nutrition, food storage
Donald J. McMahon, food science, dairy chemistry and technology
Ronald G. Munger, nutrition, epidemiology, and public health
Bart C. Weimer, food science, microbial physiology

Adjunct Professors
Gary M. Chan, pediatrics
Craig J. Oberg, microbiology

Professors Emeritus
Georgia C. Lauritzen
Von T. Mendenhall
Gary H. Richardson
D. K. Salunkhe
Ann W. Sorenson
Bonita W. Wyse

Associate Professors
Nedra K. Christensen, nutrition, dietetics
Ilka Nemere, nutrition, molecular nutrition
Marie K. Walsh, food science, dairy chemistry

Clinical Associate Professors
Janet B. Anderson, dietetics, food science management, food safety
Noreen B. Schvaneveldt, dietetics, clinical nutrition

Adjunct Associate Professors
Barbara Chatfield, pediatric pulmonology
Wayne G. Geilman, dairy processing and technology
Paul A. Savello, dairy processing and food science, food laws and regulations, milk ultra high temperature and whitening

Adjunct Research Associate Professor
Laurie J. Moyer-Mileur, pediatric nutrition

Associate Professor Emeritus
Charlotte P. Brennand

Assistant Professor
Heidi J. Wengreen, nutrition, clinical dietetics, epidemiology

Research Assistant Professor
Dong Chen, molecular structure and biochemistry

Clinical Assistant Professor
Tamara S. Vitale, dietetics, community nutrition

Adjunct Clinical Assistant Professor
Ann M. Mildenhall, dietetics, director of dietetic internship program

Assistant Professor Emeritus
Frances G. Taylor

Adjunct Assistant Professors
Deborah R. Gustafson, nutrition
Bradley J. Haack, molecular pathogenesis
Theodore Liou, nutrition, internal medicine, pulmonology
Robert Miceli, molecular assay development, biosensor development, infectious disease, antibody engineering, immune regulation

Adjunct Clinical Assistant Professor
W. Daniel Jackson, pediatrics

Clinical Instructor
Kim McMahon, dietetics/food service management

Adjunct Instructors
Catherine McDonald, pediatric nutrition, clinical dietetics
Rachel T. Rood, nutrition, registered dietitian

Lecturers
Randall T. Bagley, dairy processing
Virginia C. Bragg, nutrition
Erik T. Burlile, culinary arts/food service management, chef
Grace B. Harvell, culinary arts
John L. Simpson, culinary arts/food service management, chef
Dick R. Whittier, meat processing
Jeffrey W. Woolley, culinary arts/food service management, chef

Adjunct Lecturer
Jan P. Jenkins, clinical dietetics, assistant director of dietetic internship program

Adjunct Clinical Lecturer
Rebecca S. Cole, dietetics/food service management

Course Descriptions

Nutrition and Food Sciences (NFS), pages 567-570

Department of Physics

Department Head: Jan J. Sojka
Location: Science Engineering Research 250A
Phone: (435) 797-2848
FAX: (435) 797-2492
E-mail: physics@cc.usu.edu
WWW: http://www.physics.usu.edu/

Assistant Department Head:
Charles G. Torre, Science Engineering Research 232,
(435) 797-3426, charles.torre@usu.edu

Academic Advisor:
Karalee Ransom, Science Engineering Research 250D,
(435) 797-4021, karalee.ransom@usu.edu

Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), Master of Science (MS), and Doctor of Philosophy (PhD) in Physics; BS and BA in Physics Teaching; BS and BA in Composite Teaching—Physical Science (Physics)

Undergraduate emphases: *BS*—Professional Emphasis or Applied Emphasis

Graduate specialization: *MS*—Upper Atmospheric Physics

Undergraduate Programs

Objectives

The Physics Department embraces undergraduate students from all quarters of the University—in introductory courses required for majors by various departments, in courses for more general audiences that are part of the University Studies Program, and in upper-level courses designed primarily to fulfill bachelor's degree requirements in Physics. These courses, and the degree programs offered, are strongly impacted by the department's central goals:

1. to communicate the beauty and utility of the fundamental principles of the physical universe and the power of describing nature in quantitative terms,
2. to create new knowledge,
3. to foster critical and creative thinking,
4. to enhance the ability of citizens to participate in a technological democracy,
5. to assist in the preparation of elementary and secondary school teachers,
6. to provide opportunities for students to sharpen their communication and interpersonal skills, and
7. to develop new tools and texts to improve physics pedagogy.

The degree programs of the department are constructed to be rigorous, yet flexible, and are intended to help students prepare for careers in academia, government and industrial laboratories, medicine, law, teaching, and business. Required course and laboratory work in these programs carefully balances theory and experiment. Because the department believes that one must participate in discovery to understand science, undergraduates are encouraged to engage in departmental research early in their studies, and a formal research experience is integral to most departmental programs. The department's Get Away Special activities provide excellent opportunities for students of all backgrounds to participate in space-related research.

Requirements

Departmental Admission and Graduation Requirements

New freshmen admitted to USU in good standing qualify for admission to the degree programs in Physics. Admission in good standing for students transferring from another institution requires a minimum transfer GPA of 2.2, while students transferring from another USU major are required to have a minimum total GPA of 2.0. Students wishing to complete the Teaching Major in Physics must apply for admission to the Secondary Education program as well. Requirements for admission to the **Secondary Teacher Education Program (STEP)** include a minimum GPA of 2.75 in either PHYX 2110 and 2120, or PHYX 2210 and 2220; and at least 60 total credits completed with a minimum GPA of 2.75. A Composite Teaching Major in Physical Science is available through either the Physics or the Chemistry and Biochemistry departments. Students applying for admission to the STEP with the Composite major must satisfy the latter requirements, plus a minimum GPA of 2.75 in CHEM 1210, 1220, 1230, and 1240.

Students may use no more than one course with the *P-D-F* option to satisfy a major or minor requirement in Physics. All other courses used to satisfy major or minor requirements must be completed with at least a *C-* grade, and the total GPA in all required Physics courses must be at least 2.3. The Teaching Major and Teaching Minor in Physics and the Composite Teaching Major in Physical Science require a 2.75 minimum GPA in Physics courses and a minimum 2.75 overall GPA for graduation.

College of Science Requirements

The College of Science requires a year of mathematics (8 credits) and a year sequence in science (6-8 credits) for all of its majors. For Physics majors, the College of Science requirements are:

MATH 1210 (QL) Calculus I, (F,Sp,Su) 4
MATH 1220 (QL) Calclulus II (F,Sp,Su) 4

Choose *one* of the following pairs of courses:
BIOL 1210 Biology I (F) (4 cr) **and**
BIOL 1220 (BLS) Biology II (Sp) (4 cr) 8
Or
CHEM 1210 Principles of Chemistry I (F,Sp) (4 cr) **and**
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) (4 cr) 8
Or
GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F, Sp) (4 cr) **and**
GEOL 3200 (DSC) The Earth Through Time (Sp) (4 cr) 8

Bachelor's Degrees and Core Requirements

The Physics Department awards the following degrees: BS in Physics, BA in Physics, BS in Physics with a Professional Emphasis, BS in Physics with an Applied Emphasis, BS in Mathematics and Physics Dual Major Option, BS in Physics Teaching, and BS in Composite Teaching—Physical Science.

Except for the two Teaching Majors, all degrees require a common core (42 credits):

A. College of Science Requirements (16 credits)

B. Required Physics Courses (23 credits)
PHYX 2210 (QI) General Physics–Science and Engineering I (4 cr) **and**
PHYX 2220 (BPS/QI) General Physics–Science and Engineering II (4 cr) 8
Or (PHYX 2210, 2220 preferred; **or** PHYX 2110, 2120)
PHYX 2110 The Physics of Living Systems I (4 cr) **and**
PHYX 2120 (BPS) The Physics of Living Systems II (4 cr) 8

PHYX 2500 Introduction to Computer Methods in Physics 2
PHYX 2710 Introductory Modern Physics 3
PHYX 3550 Intermediate Classical Mechanics 3
PHYX 3600 Intermediate Electromagnetism (3 cr) **or**
ECE 3870 Electromagnetics I (F, Sp) (3 cr) 3
PHYX 3870 (CI) Intermediate Laboratory I 2
PHYX 4900 (CI) Research in Physics 2

C. Required Mathematics Course (3 credits)
MATH 2210 (QI) Multivariable Calculus (F,Sp,Su) 3

The specific requirements beyond this core for the various bachelor's degrees are:

1. Bachelor of Science Degree in Physics (15 credits)
MATH 2250 (QI) Linear Algebra and Differential Equations (F, Sp, Su) 4
PHYX 3710 Intermediate Modern Physics 3
PHYX 3700 Thermal Physics (3 cr) **or**
PHYX 4650 Optics I (3 cr) 3
Courses in Physics at the 3500 level and above (*not* to include PHYX courses designed as University Studies depth courses) 5

2. Bachelor of Arts Degree in Physics (32 credits)
MATH 2250 (QI) Linear Algebra and Differential Equations (F, Sp, Su) 4
PHIL 4310 (DHA) Philosophy of Science (Sp) 3
PHIL 4320 (DHA) History of Scientific Thought (Sp) 3
Courses in Physics at the 3500 level and above (*not* to include PHYX courses designed as University Studies depth courses) 6
Two years training (or equivalent) in a foreign language 16

3. Bachelor of Science Degree in Physics with a Professional Emphasis (29 credits)
MATH 2250 (QI) Linear Algebra and Differential Equations (F, Sp, Su) 4
PHYX 3700 Thermal Physics 3
PHYX 3710 Intermediate Modern Physics 3
PHXY 3750 Foundations of Wave Phenomena 3
PHXY 3880 (CI) Intermediate Laboratory II 2
PHYX 4600 Advanced Electromagnetism 3
PHYX 4650 Optics I 3
PHYX 4700 Quantum Mechanics I 3
PHYX 4710 Quantum Mechanics II 3
PHXY 4900 (CI) Research in Physics 2

4. Bachelor of Science Degree in Physics with an Applied Emphasis (24 credits)
MATH 2250 (QI) Linear Algebra and Differential Equations (F, Sp, Su) 4
PHYX 3700 Thermal Physics 3
PHYX 3880 (CI) Intermediate Laboratory II 2
PHYX 4650 Optics I 3
Courses in other technical departments at the 3000 level or above (*not* to include courses designated as University Studies depth courses). Selected courses must have a coherent theme and must be approved by the Physics Department 12

5. Mathematics and Physics Dual Major Option
By fulfilling *all degree requirements* for *any two separate majors*, it is possible for a student to receive a diploma having two majors listed. Because most physics majors are required to complete a minimum of 14 credits in mathematics courses, many students elect to complete the requirements for a BS degree in mathematics, as well as the requirements for their physics degree.

Minor in Physics

Majors in other departments may obtain a minor in physics by successfully completing the following courses:
PHYX 2210 (QI) General Physics–Science and Engineering I (4 cr) **and**
PHYX 2220 (BPS/QI) General Physics–Science and Engineering II (4 cr) 8
Or (PHYX 2210, 2220 preferred; **or** PHYX 2110, 2120)
PHYX 2110 The Physics of Living Systems I (4 cr) **and**
PHYX 2120 (BPS) The Physics of Living Systems II (4 cr) 8
To obtain a physics minor, students must also select 10 additional credits from PHYX courses at the 2500 level and above (*not* to include PHYX courses designated as USU Depth courses). Note that MATH 1100 or 1210 is a prerequisite for PHYX 2110, MATH 1210 is a prerequisite for PHYX 2210, and MATH 1220 is a prerequisite for PHYX 2710.

Bachelor of Science in Physics Teaching

In addition to the College of Science requirements, courses required for the Bachelor of Science in Physics Teaching include the following:

MATH 1210 (QL) Calculus I (F, Sp, Su) 4
MATH 1220 (QL) Calculus II (F, Sp, Su) 4
MATH 2250 (QI) Linear Algebra and Differential Equations (F, Sp, Su) 4
STAT 3000 (QI) Statistics for Scientists (F, Sp) 3

PHYX 2210 (QI) General Physics–Science and Engineering I (4 cr) **and**
PHYX 2220 (BPS/QI) General Physics–Science and Engineering II (4 cr) 8
Or (PHYX 2210, 2220 preferred; **or** PHYX 2110, 2120)
PHYX 2110 The Physics of Living Systems I (4 cr) **and**
PHYX 2120 (BPS) The Physics of Living Systems II (4 cr) 8

PHYX 1000 (BPS) Introductory Astronomy 3
PHYX 2500 Introduction to Computer Methods in Physics 2
PHYX 2710 Introductory Modern Physics 3
PHYX 3710 Intermediate Modern Physics 3
PHYX 3870 (CI) Intermediate Laboratory I 2
In addition, student must select 5 credits in Physics above the 3000 level (including USU Depth courses); SCI 4300; and 6 credits in science, with 3 in each of the two areas not covered by the College of Science science sequence requirement.

Students seeking this degree must complete the requirements for the Secondary Teacher Education Program (STEP). Admission to the STEP with this major requires a minimum GPA of 2.75 in either PHYX 2110 and 2120 **or** PHYX 2210 and 2220, in addition to Department of Secondary Education requirements.

Note: Beginning in 2006, all USU teacher education candidates will be required to take and pass the content exam approved by the Utah State Office of Education in their major content area prior to student teaching.

Department of Physics

Bachelor of Science Degree in Composite Teaching—Physical Science (91-92 credits)

Courses required for the Bachelor of Science in Composite Teaching—Physical Science include the following:

MATH 1210 (QL) Calculus I (F, Sp, Su) 4
MATH 1220 (QL) Calculus II (F, Sp, Su) 4
STAT 3000 (QI) Statistics for Scientists (F, Sp) 3

PHYX 2210 (QI) General Physics–Science and Engineering I (4 cr) **and**
PHYX 2220 (BPS/QI) General Physics–Science and Engineering II (4 cr) 8
Or (PHYX 2210, 2220 preferred; **or** PHYX 2110, 2120)
PHYX 2110 The Physics of Living Systems I (4 cr) **and**
PHYX 2120 (BPS) The Physics of Living Systems II (4 cr) 8

PHYX 1000 (BPS) Introductory Astronomy 3
PHYX 1030 (BPS) Intelligent Life in the Universe (sometimes listed as USU 1360, ST: Intelligent Life in the Universe) (3 cr) **or**
PHYX 3030 (QI) The Universe (3 cr) 3
Courses in Physics from PHYX courses at the 2500 level and above (including USU Depth courses) 5
CHEM 1210 Principles of Chemistry I (F, Sp) 4
CHEM 1220 (BPS) Principles of Chemistry II (F, Sp, Su) 4
CHEM 1230 Chemical Principles Laboratory I (F, Sp) 1
CHEM 1240 Chemical Principles Laboratory II (F, Sp) 1
CHEM 2300 Principles of Organic Chemistry (F) (3 cr) **or**
CHEM 2310 Organic Chemistry I (F) (4 cr) ..... 3 or 4
CHEM 2330 Organic Chemistry Laboratory I (F) 1
BIOL 1010 (BLS) Biology and the Citizen (F, Sp, Su) 3
GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F, Sp) 4
BMET 2000 (BPS) The Atmosphere and Weather (F, Sp) 3
SCI 4300 Science in Society (F, Sp) 2
Students seeking this degree must complete the requirements for the Secondary Teacher Education Program (STEP). Admission to the STEP with this major requires a minimum GPA of 2.75 in either PHYX 2110 and 2120 **or** PHYX 2210 and 2220, in addition to Department of Secondary Education requirements.

Students who may wish to teach Integrated Science at the middle or junior high school level should talk to their advisor about completing the courses necessary for an Integrated Science endorsement.

Note: Beginning in 2006, all USU teacher education candidates will be required to take and pass the content exam approved by the Utah State Office of Education in their major content area prior to student teaching.

Teaching Minor in Physics

Students who complete the Secondary Teacher Education Program (STEP) are eligible to obtain a Teaching Minor in Physics by successfully completing the following courses:

PHYX 1000 (BPS) Introductory Astronomy 3

PHYX 2110 The Physics of Living Systems I (4 cr) **and**
PHYX 2120 (BPS) The Physics of Living Systems II (4 cr) 8
Or
PHYX 2210 (QI) General Physics–Science and Engineering I (4 cr) **and**
PHYX 2220 (BPS/QI) General Physics–Science and Engineering II (4 cr) 8

Courses in Physics chosen from PHYX 2500 and/or courses above the 3000 level (including USU Depth courses) 6

SCI 4300 Science in Society (F, Sp) (2 cr) **or**
Science course (not including Physics) not required by the major, if SCI 4300 is required by the student's major 2

Note: MATH 1100 or 1210 is a prerequisite for PHYX 2110, MATH 1210 is a prerequisite for PHYX 2210, and MATH 1220 is a prerequisite for PHYX 2710.

In addition, the Teaching Minor in Physics requires completion of the Secondary Teacher Education Program (STEP). Admission to the STEP with this major requires a minimum GPA of 2.75 in either PHYX 2110 and 2120, **or** PHYX 2210 and 2220, in addition to Department of Secondary Education requirements.

Secondary Teacher Education Program (STEP) (35 credits)

Level 1 (11 credits)
SCED 3100 Motivation and Classroom Management (F, Sp) 3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F, Sp) 3
SCED 3300 Clinical Experience I (40 hours minimum) (F, Sp) 1
SCED 3400* Teaching Science I (F, Sp) 3
INST 3500 Technology Tools for Secondary Teachers (F, Sp, Su) 1

Level 2 (12 credits)
SCED 4200 (CI) Reading, Writing, and Technology (F, Sp) 3
SCED 4210 Cognition and Evaluation of Student Learning (F, Sp) 3
SCED 4300 Clinical Experience II (40 hours minimum) (F, Sp) 1
SCED 4400* Teaching Science II (F, Sp) 3
SPED 4000 Education of Exceptional Students (may be taken at any time) (F, Sp, Su) 2

Level 3 (12 credits)
SCED 5500 Student Teaching Seminar (2 weeks) (F, Sp) 2
SCED 5630 Student Teaching in Secondary Schools (13 weeks, full-time) (F, Sp) 10

*Science methods courses (SCED 3400 and 4400) may only be taught once per year. Therefore, students should take whichever one is taught during the term they are in Level 1 or Level 2.

Undergraduate Research Opportunities

The Physics Department at Utah State University has a long record of successfully involving its undergraduate students in research and extracurricular scholarly activities. Learning what science is requires more than just doing homework and taking exams; it requires getting involved in the pursuit of knowledge that is not yet in any textbook. Undergraduates can take PHYX 4900 (Research in Physics) for academic credit. However, many students participate in research activities without credit, because they enjoy being immersed in the act of discovery. Having a meaningful research experience and working closely with faculty are useful for applying for employment, admission to graduate schools, and applying for competitive scholarships. For more information, contact David Peak at david.peak@usu.edu, or visit the following website:
http://www.physics.usu.edu/research/undergrad.html

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty

in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Learning Objectives

The Physics Department has the following learning objectives. While many of these objectives are applicable to all six departmental programs, some apply only to specific programs. To see which program(s) includes each learning objective, see the footnotes which follow.

1. Capable communication, written and oral[1,2,3,4,5,6]
2. Skepticism[1,2,3,4,5,6]
3. Ability in critical thinking and problem solving[1,2,3,4,5,6]
4. Knowledge of physics subjects to an advanced undergraduate level[1,2,3,4,5,6]
5. Wide knowledge of physics subjects to an advanced undergraduate level[2,3]
6. Knowledge of focused applied areas of study to the undergraduate level[4]
7. Experience in experimental physics[1,2,3,4,5,6]
8. Experience in physics research[1,2,3,4,5,6]
9. Knowledge of computer methods in physics[1,2,3,4,5,6]
10. Knowledge of broadening subjects[1,2,3,4,5,6]
11. Knowledge of mathematics to undergraduate calculus level[1,2,3,4,5,6]
12. Knowledge of mathematics to undergraduate differential equations level[1,2,3,4,5]
13. Knowledge of statistics to undergraduate level[5,6]
14. Knowledge of philosophy of science to the undergraduate level[1]
15. Knowledge of a foreign language to the undergraduate level[1]

Programs:
The footnotes following each of the preceding learning objectives indicate which program(s) include that objective. The six undergraduate programs are as follows:

[1]BA degree in physics
[2]BS degree in physics
[3]BS degree in physics with professional emphasis
[4]BS degree in physics with applied emphasis
[5]BS degree in physics teaching
[6]BS degree in composite teaching

Assessment

The principal assessment tools of the Physics Department are (1) an exit interview, which is conducted by the department head with all graduating seniors; and (2) follow-up on the work or advanced education of all graduating seniors. The department also makes special note of awards and honors received by students having majors within the department. At the annual departmental retreat (as well as at faculty meetings), faculty members conduct a careful review of any deficiencies in departmental programs. If it is perceived and agreed that these deficiencies are real, and if departmental resources are available to remedy them, then the department undertakes steps to modify their teaching program in order to address the problems. Details of the assessment plan can be found at the following website:
http://www.physics.usu.edu/teaching/assessment.html

Financial Support

The Physics Department has several small scholarship funds available for physics majors with excellent academic records. In addition, there are a number of Get Away Special (GAS) scholarships for students interested in designing and constructing experiments to be flown in space and in participating in other GAS activities. Inquiries should be made with the Physics advisor in SER 250.

Additional Information

Information concerning degree programs, recommended schedules of courses, career opportunities, and opportunities to participate in the Get Away Special activities and in other areas of undergraduate research may be obtained by consulting the Physics advisor in SER 250. Also see the department's website at:
http://www.physics.usu.edu/

Major requirement sheets, which provide details of undergraduate programs in physics, can be obtained from the department, or online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Admission Requirements

In addition to the general requirements for admission established by the School of Graduate Studies (see pages 93-94), the department admission committee bases its decisions for offering admission on the following criteria: review of applicants' undergraduate records, letters of recommendation, performance in graduate courses (if any), performance in research (if any), and scores on the General portion of the Graduate Record Examination. Students whose native language is not English are strongly encouraged to submit to the School of Graduate Studies results of the Test of Spoken English (TSE). Regardless, nonnative English speakers must submit a score for the Test of English as a Foreign Language (TOEFL). If a satisfactory score on the TSE is not provided, such students will be required to take a test given by the Intensive English Language Institute (IELI) at USU. The purpose of this test is to guide the selection of remedial language

courses, if needed, to help with physics coursework comprehension. (See also *Financial Assistance*, page 387.)

Placement

Prior to registering for graduate courses for the first time, each student will consult with the Graduate Student Tracking Committee and the departmental advisor. Based on these discussions, the student will be advised to register for courses in either the Physics Department standard curriculum or advanced curriculum. Continuing advisement concerning courses will be provided by the Graduate Student Tracking Committee, the departmental advisor, and the student's graduate supervisory committee.

Qualification Requirements

Each student enrolled in the PhD program will be evaluated for qualification for PhD work. Consideration of qualification will occur no later than the end of the second semester after the student has been admitted for study in the PhD program and has taken a first graduate course in physics. Evaluation will be based on whatever relevant information the student wishes to have presented on his or her behalf (coursework, research, TA performance, subject GRE, etc.), but must include a faculty evaluation of coursework in physics for courses taken at USU. Normally, the student should present the results of at least four physics courses. Students admitted to the PhD program with considerable coursework from another institution, who have not taken at least four courses in physics at USU, must present a qualification seminar to the Department of Physics on research he or she has done during the preceding year at USU. Based on the various pieces of information presented on behalf of the student, the department will judge whether or not the student is qualified to continue in the PhD program. If not, a student already having an MS in physics from USU will be asked to leave. A student without an MS in physics from USU will be invited to finish his or her MS degree. Upon completion, the student can reapply to the PhD program, but acceptance will be contingent on the evaluation of the student's graduate work to that point.

Degree Programs

Master of Science

In addition to the above general requirements, students completing a Plan A MS degree must complete four of the nine required PhD courses listed below (see Doctor of Philosophy). Plan B MS students must complete five of the nine courses, and Plan C MS students must complete six of the nine courses. Each student is required to pass PHYX 5800 (Physics Colloquium) for four consecutive semesters, beginning with the first semester after matriculation. The student must also submit and orally defend either a thesis (Plan A) or a research report (Plan B) at the discretion of the student's supervisory committee. Plan A and Plan B MS candidates must present a colloquium to the department on the research topic during the time the thesis or research report is being written. The department also accepts Plan C, which has no research component. For Plan C, the student must complete 33 credits of graduate-level classwork, the composition of which shall include the required courses listed above. In addition, the student must present a seminar and a paper to his or her supervisory committee on a topic related to educational or managerial aspects of physics graduate education, which is chosen by his or her supervisory committee.

Master of Science (Upper Atmospheric Physics Specialization)

The department offers a specialization in Upper Atmospheric Physics for MS students. This degree is a Plan A MS. In consultation with his or her advisor, the student selects a minimum of 18 credits of classwork from the following courses:

PHYX 4600 Advanced Electromagnetism 3
PHYX 6240 Space Environment and Engineering (F) 3
PHYX 6310 Solar-terrestrial Physics I 3
PHYX 6320 Solar-terrestrial Physics II 3
PHYX 6330 Plasma Physics I 3
PHYX 6340 Plasma Physics II 3
PHYX 7210 Spacecraft Instrumentation (Sp) 3
PHYX 7500 Advanced Topics in Physics (Topic) 3

Three to six additional credits may be chosen from courses in electrical engineering, computer science, mathematics, and biometeorology. The student may gain from 6 to 12 credits by research, to be written up as a thesis that must be defended orally. In addition, the student must present a colloquium on the topic of his or her research.

Doctor of Philosophy

In addition to the general requirements, a total of nine courses (27 credits) are required for all PhD students. The required courses are:

PHYX 5340 Methods of Theoretical Physics I 3
PHYX 5350 Methods of Theoretical Physics II 3
PHYX 6010 Classical Mechanics I 3
PHYX 6110 Electrodynamics I 3
PHYX 6210 Quantum Mechanics I 3
PHYX 6410 Statistical Mechanics I 3
One State of Matter course 3
Two courses in Advanced Topics 6

The State of Matter requirement can be fulfilled by taking any one of PHYX 6330 (Plasma Physics I), 6530 (Solid State Physics I), or 6930 (Quantum Field Theory I). These courses must be completed no more than one year after PhD qualification. Each student is required to pass PHYX 5800 (Physics Colloquium) for four consecutive semesters, beginning with the first semester after matriculation. The student must also take an oral candidacy examination, consisting of a presentation made by the student, then followed by questions from departmental faculty. The presentation and questions will be based upon a research topic set by the student's supervisory committee. The candidacy oral examination will normally occur no later than the fifth semester after the student begins graduate coursework. The student will have at least two months to prepare for the examination.

The student must also complete a research dissertation and give an oral defense of the dissertation. Furthermore, the PhD candidate is expected to give two colloquia to the department. The first of these will normally be given at the time of submission of the research proposal, with the other given at the time the dissertation is completed.

Research

Space Science

The Physics Department is active in the field of atmospheric and space science, in close association with the interdisciplinary Center for Atmospheric and Space Sciences and the Space Dynamics Laboratory. Atmospheric and space science involves many areas of physics, in addition to such disciplines as engineering, chemistry, and meteorology. At USU, these groups enjoy a strong cooperative relationship and, as a result, the atmospheric and space science program has flourished for many years. Once the departmental requirements have been met, students may select courses from the

offerings of the associated departments suited for their particular interests and needs while they gain research experience on challenging problems in atmospheric and space science. Opportunities are available for students in both experimental and theoretical projects. These include participation in instrument development and data analysis related to rocket, satellite, and space shuttle projects and projects in experimental design and data analysis related to incoherent-scatter and coherent radars, ground-based magnetometer, and ground-based optical instruments including a LIDAR system. Opportunities also exist in theoretical modeling of physical processes occurring in both the neutral atmosphere and in the plasma in the solar-terrestrial environment.

Plasma Theory and Confinement

Research in the field of magnetic confinement fusion at Utah State University includes the theoretical development and experimental realization of minimum-energy confinement configurations possessing substantial electric fields. These configurations hold promise as neutron and energy sources and are being developed as a collaborative effort between Dr. Farrell Edwards and Dr. Eric Held. In addition, Dr. Held is involved in developing improved hybrid fluid/kinetic models for terrestrial and astrophysical plasmas. This work provides theoretical support for next-step fusion experiments such as the International Thermonuclear Experimental Reactor (ITER).

Surface Physics

The surface physics group has an active experimental research program studying the structure, growth, dynamics, electronic properties, and optical properties of surfaces, interfaces, and adsorbed layers. The group has expertise in the interactions of electrons, ions, and photons with materials. Experimental techniques used within the group include atomic force microscopy (AFM), Auger electron spectroscopy (AES), infrared spectroscopy, ion scattering spectroscopy, ion implantation, low-energy electron diffraction (LEED), photoemission spectroscopy, scanning electron microscopy (SEM), scanning tunneling microscopy (STM), secondary ion mass spectroscopy (SIMS), thermal deflection spectroscopy, ultrafast femtosecond laser spectroscopy, vapor pressure adsorption isotherms, and x-ray diffraction. This interdisciplinary research brings together the fields of solid-state physics, surface physics and chemistry, optics, physical chemistry, and electrochemistry through active collaborations between Physics, Chemistry and Biochemistry, Mechanical and Aerospace Engineering, and other departments. It includes both basic and applied research.

Physics of Quantum Devices

The rapid advance of technology has made quantum physics an indispensable foundation of the nanoscale devices. The Physics Department is positioned to explore this new field with two complementary research themes. The first theme is to study the growth of novel electronic/photonic materials involving group III-V elements using a commericial, state-of-the-art molecular beam epitaxy machine. Also, novel semiconductor quantum nanostructures are studied using an *in-situ* scanning tunneling microscope directly attached to the machine. The second theme is to use the most advanced surface science techniques to fabricate nanoscale structures on semiconductor surfaces. The interdisciplinary nature of this field provides a stimulating research environment for faculty and students with backgrounds in physics, electrical engineering, material sciences, and chemistry.

Theoretical Physics

The department maintains an active research program in theoretical physics via its Field Theory Group. The principal focus of this group is on unified field theories, gravitational theory, classical and quantum field theory, and geometric methods in mathematical physics. Current research projects include: conformal and scale invariant gravity theories and unified field theories, Weyl-geometric quantization, exact solutions in Gauss-Bonnet extended gravity, classical and quantum dynamics of the gravitational field, symmetries and conservation laws in relativistic field theories, Lagrangian and Hamiltonian formulation of field theory, and application of geometrical methods in physics. Weekly seminars and ongoing collaborations with members of the USU Mathematics and Statistics Department and the University of Utah Physics Department provide an active research environment that allows for substantial interaction between students and faculty.

Physics Education

The USU Physics Department is engaged in the study of how to improve the teaching and learning of physics. The program currently emphasizes introductory and general education courses and involves development of hands-on, inquiry-based curricula for lecture and laboratory, development of associated laboratory and multimedia equipment and modules, preparation of new texts and workbooks, sponsorship of undergraduate research, and outreach to the pre-college community.

Complex Materials and Dynamics

Current work at USU in the interdisciplinary area of complex systems includes theoretical and experimental studies of the physical properties of granular materials, liquid flow in fractured media, and development of new data analysis techniques for uncovering evidence for determinism and computation in biological systems.

Financial Assistance

Financial assistance in the form of teaching assistantships and fellowships is awarded by the department. Research assistantships are available from research groups or individuals. Some support for teaching laboratory sections or grading papers is available. To be eligible for a teaching assistantship (TA), a student must successfully complete a graduate TA workshop. Nonnative English-speaking students must pass a test of spoken English (or submit a satisfactory TSE score) administered by the Intensive English Language Institute before being admitted to the TA workshop. The MS specialization in Upper Atmospheric Physics is a Western Regional Graduate Program (see page 92).

Career Opportunities

Master's degree holders in physics are generally employed by industrial or government laboratories as either physicists or engineers. Some are hired as teachers by high schools and by two-year colleges. Holders of the PhD in physics will generally be hired as research and development physicists by industrial or government laboratories and as professors in universities (though usually only following an appointment as a postdoctoral fellow for one to three years).

Additional Information

Regularly updated information about Physics Department activities and programs may be obtained via the Web at:
http://www.physics.usu.edu/

Department of Physics

Physics Faculty

Professors
J. R. Dennison, surface physics
W. Farrell Edwards, electromagnetic and plasma theory
Bela G. Fejer, space plasma physics
David Peak, nonlinear dynamics, complex materials
W. John Raitt, space plasma physics
Robert W. Schunk, space plasma physics
Jan J. Sojka, atmospheric and space physics
Charles G. Torre, mathematical physics and general relativity
Vincent B. Wickwar, atmospheric and space physics

Research Professors
F. Tom Berkey, atmospheric and space physics
Kent L. Miller, atmospheric physics
Thomas D. Wilkerson, atmospheric and space physics

Adjunct Professors
Stephen E. Bialkowski, nonlinear optics and laser spectroscopy
Yeaton H. Clifton, mathematical physics
Raymond DeVito, medical physics
Leonard F. Hall, structure forming systems
Allen Q. Howard, electromagnetic theory
R. Gilbert Moore, space physics
David Rees, atmospheric physics
Ray W. Russell, astronomy
Neal D. Shinn, surface interface physics
John R. Tucker, device physics and superconductivity

Professors Emeriti
Wilford N. Hansen, reflection spectroscopy, surface physics
Eastman N. Hatch, nuclear physics
Don L. Lind, space physics
V. Gordon Lind, medium energy nuclear physics
William R. Pendleton, Jr., atomic and molecular physics
John K. Wood, spectroscopy

Associate Professors
D. Mark Riffe, surface physics
Tsung-Cheng Shen, surface physics, nanotechnology
Michael J. Taylor, atmospheric and space physics
James T. Wheeler, mathematical physics and general relativity

Research Associate Professors
Abdallah R. Barakat, space plasma physics
Howard G. Demars, space physics
Timothy E. Doyle, random and disordered systems
J. Steven Hansen, image processing
Lie Zhu, space physics

Adjunct Associate Professors
K. S. Balasubramanian, solar physics
I. Lee Davis, condensed matter physics
Hugo deGaris, artificial intelligence
James S. Dyer, space contamination and outgassing
Jill A. Marshall, physics education
David J. Vieira, nuclear physics
Vladimir Zavyalov, condensed matter physics

Associate Professor Emeritus
Robert E. McAdams, nuclear physics

Assistant Professors
Eric D. Held, plasma physics
Haeyeon Yang, surface physics, nanotechnology

Adjunct Assistant Professor
Jeremy R. King, astrophysics

Lecturer
Tonya B. Triplett, physics education

Course Descriptions

Physics (PHYX), pages 577-580

Department of Plants, Soils, and Biometeorology

Department Head: Larry A. Rupp
Location: Agricultural Science 322C
Phone: (435) 797-2233
FAX: (435) 797-3376
E-mail: larry.rupp@usu.edu
WWW: http://www.psb.usu.edu

Undergraduate Advisor:
M. Cathryn Myers-Roche, Agricultural Science 322, (435) 797-5560, cmyers@mendel.usu.edu

Undergraduate Off-Campus Advisor:
Donna B. Minch, Farmington, (801) 451-4604, minch@sisna.com

Graduate Program Coordinator:
Paul G. Johnson, Agricultural Science 304, (435) 797-7039, paul.johnson@usu.edu

Degrees Offered: Bachelor of Science (BS) and Bachelor of Arts (BA) in Crop Science, Horticulture, Environmental Soil/Water Science; Master of Science (MS), and Doctor of Philosophy (PhD) in Biometeorology, Plant Science, Soil Science, and Ecology; Master of Professional Studies in Horticulture (MPSH)

Undergraduate emphases: *Crop Science BS*, *BA*—Agronomy, Research/Biotechnology; *Horticulture BS, BA*—Ornamental Horticulture, Landscape Maintenance and Construction, Turfgrass Management, Business, Science; *Environmental Soil/Water Science* BS, BA—Soil, Water, Plant

Graduate specializations: *Biometeorology MS, PhD*—Agricultural Meteorology, Climatology, Micrometeorology, Remote Sensing, Turbulence in Plant Canopies; *Plant Science MS, PhD*—Crop Physiology, Crop Production and Management, Molecular Biology, Plant Breeding and Cytology, Plant Biotechnology and Tissue Culture, Plant Nutrition, Space Biology, Weed Science; *Soil Science MS, PhD*—Molecular Biology, Soil and Water Chemistry, Soil Biochemistry and Ecology, Soil Conservation Systems, Soil Fertility and Plant Nutrition, Soil Physics, Soil-Plant-Water Relations, Soil Taxonomy and Genesis, Soils and Irrigation; *Master of Professional Studies in Horticulture (MPSH)*—Water Efficient Landscaping

Certificate and Associate Degree Program: Ornamental Horticulture

Undergraduate Programs

Objectives

The departmental curricula emphasize understanding the physical, chemical, and biological mechanisms that operate in the continuum of the soil, plants, and the atmosphere; and how they impact management of a wide range of agricultural and natural systems.

The undergraduate teaching program facilitates the acquisition and application of knowledge, understanding, and skills by students within their chosen field of study. The program also prepares students to develop lifelong learning skills, understand and appreciate diversity, be productive citizens of the world, and be professionals in their vocations.

The department also provides training of undergraduates for graduate school and maintains a strong graduate program in biometeorology, plant science, and soil science. The research that underlies the graduate program is conducted in biometeorology (micro- and meso-scale), crop biotechnology, crop ecology, crop physiology, crop science, horticulture (general and ornamental), plant breeding, soil microbiology, pedology, soil chemistry, soil physics, soil fertility, environmental soil and water science, and arid landscaping.

A major effort is directed at extending research and teaching programs to all citizens of the State of Utah.

Departmental Facilities

To support these objectives, departmental facilities include well-equipped laboratories and greenhouses on campus. The University has significant acreage for field research at strategic locations throughout the state. In addition, the University is developing a botanical garden, which will offer opportunities to a broad spectra of clientele. The department maintains state-of-the-art analytical equipment for the measurement of critical soil, plant, and climatic variables.

Requirements

Departmental Admission Requirements

Persons meeting the admission requirements for the University (see pages 16-19) are admitted to the Department of Plants, Soils, and Biometeorology by listing the department major code on the University admission application form. A change of major form is used when students in good standing wish to transfer from another department to the Department of Plants, Soils, and Biometeorology.

ARCPACS Certification

Students who meet specific requirements are eligible, after five years of work experience, for professional certification as an Agronomist, Crop Scientist, Crop Specialist, Horticulturist, Soil Scientist, Soil Specialist, Soil Classifier, or Weed Scientist through the American Registry of Certified Professionals in Agronomy, Crops, and Soils (ARCPACS). General information about ARCPACS certifications can be found at **http://www.agronomy.org/certification**. Students interested in becoming certified should inform their advisor of their intent. This certification is granted *in addition* to the bachelor's degree.

Applied Ornamental Horticulture Certificates and AAS Degree

This program provides practical training in greenhouse and nursery management, turf production, floral design, and maintenance of home and commercial grounds. Coursework encompasses pest control, plant identification, construction of landscapes, small business management, and the operation and maintenance of equipment, including small engines. As an integral part of their training, students are required to complete an internship in the industry. Students may work toward a **one-year certificate** or an **Associate of Applied Science Degree**.

Bachelor of Science Degree

The department offers the Bachelor of Science Degree in three areas: (1) **Crop Science**, which deals with agronomic (commonly called field) crops, such as forages, grains, corn, pasture, etc.; (2) **Horticulture**, which deals with tree fruits, berries, vine fruits, vegetables, and ornamental plants (**ornamental** includes all aspects of floriculture and landscape plant production and use); and (3) **Environmental Soil/Water Science**, which deals with soil and water in relation to plant growth and environmental quality. In all three majors, there are science-oriented emphases intended to prepare students for research or professional studies, and degree emphases that emphasize a practical, applied approach to application of information. All courses used to fill major requirements must be taken on an *A-B-C-D-F* basis. A minimum 2.5 GPA is required for courses used for the major. Transfer students are required to take at least 18 credits of major subject

courses in residence at USU. A minor may be earned in Agronomy, Crop Biotechnology, Horticulture, Ornamental Horticulture, and Soil Science. A minimum of 16 approved credits are required (see lists below). All courses must be taken on an *A-B-C-D-F* basis and passed with a grade of *C-* or better. For information about receiving a Bachelor of Arts degree, consult the departmental undergraduate advisor.

The course requirements for the **Crop Science Major** are designed to prepare students for a career related to the production of agronomic crops. These courses allow students to function well in a rapidly changing technological environment and to acquire new skills and understanding as their career evolves. Each of the emphases within this major has been designed to allow students the flexibility to add courses or a minor to meet their own goals. The **Agronomy Emphasis** is designed for students interested in learning more about the applied aspects of crop production. Some courses emphasize production techniques and systems, while others provide the student with an understanding of the principles underlying crop production. The **Research/Biotechnology Emphasis** is designed for students who wish to participate in the development of plant-oriented technologies at any level of employment, and for those who intend to pursue a career in private or public research requiring graduate degrees. Courses provide the fundamental tools for a twenty-first century career in agriculture.

The **Horticulture Major** prepares students for production of fruits, vegetables, turf, or ornamentals and for landscape construction and maintenance. Course topics include biology, chemistry, and control of insects, diseases, and weeds. The **Ornamental Horticulture Emphasis** adds courses in production management techniques, such as pruning, spraying, and landscaping (materials, design, and maintenance); and greenhouse management. In the **Landscape Maintenance and Construction Emphasis**, students learn design, construction, and maintenance through a joint program with the Landscape Architecture and Environmental Planning Department. In the **Turfgrass Management Emphasis**, students complete courses in turfgrass management to prepare them for careers in golf course, park, athletic field, and landscaping management. The **Science Emphasis** prepares students for graduate study and for employment in technical occupations. The **Business Emphasis** joins courses necessary for a minor in Business with those necessary for obtaining expertise in horticulture.

The **Environmental Soil/Water Science Major** is intended to provide each student with a fundamental understanding of the basic sciences and mathematics, as well as a strong background in both soil and water sciences. Preparatory requirements include chemistry, physics, mathematics, biology, geology, and statistics. The core courses for Environmental Soil/Water Science emphasize the interactive soil/water processes in the soil's plant-rooting zone—from the microscopic to the landscape perspective. From this base, each student can design his or her own program of specialization in one of the many aspects of soil science, water science, or the integration of both soil and water sciences. Students may choose complementary classes in the **Soil Emphasis**, **Water Emphasis**, or **Plant Emphasis** in preparation for a variety of career opportunities. The Environmental Soil/Water Science Major is complementary to existing undergraduate programs at Utah State University in Geology, Environmental Studies, Watershed and Earth Systems, and Environmental Engineering.

Course Requirements

Crop Science Major

Crop Science Major Core Courses (30 credits)

All Crop Science majors must complete the following courses:

BIOL 1210 Biology I (F)....4
BIOL 1220 (BLS) Biology II (Sp)....4
BIOL 4400 (QI) Plant Physiology (F)....4
ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles (F,Sp)....3
MATH 1050 (QL) College Algebra (F,Sp,Su)....4
PHYX 1200 (BPS) Introduction to Physics by Hands-on Exploration....4
PSB 1050 Plants, Soils, and Biometeorology Orientation (F)....1
PSB 4890 (CI) Senior Seminar (F,Sp) (take one credit per semester)....2
SOIL 3000 Fundamentals of Soil Science (F,Sp)....4

In addition to the courses listed above, students must complete the course requirements for *either* Emphasis A (Agronomy) *or* B (Research/Biotechnology).

A. Agronomy Emphasis (56 credits)

Students must complete *all* of the following courses for the Agronomy Emphasis (9 credits).

CHEM 1110 (BPS) General Chemistry I (F,Sp)....4
CHEM 1120 (BPS) General Chemistry II (Sp)....4
CHEM 1130 General Chemistry Laboratory (Sp)....1

Additional Crop-related Courses:

Students must complete at least 36 credits chosen from the following crop-related courses, including 9 credits from pest management courses identified with an asterisk (*):

BIOL 3200 (QI) Principles of Genetics (F,Sp,Su)....4
BIOL 4410 Plant Structure (Sp)....3
BIOL 4500* Applied Entomology (Sp)....3
BIOL 5410* Introduction to Plant Pathology (F)....4
PLSC 2650 Identification and Selection of Plants in Production Agriculture (F)....1
PLSC 3500 The Structure and Function of Economic Crop Plants (Sp)....3
PLSC 3700 Plant Propagation (F)....4
PLSC 3800 Turfgrass Management (F)....3
PLSC 4280 Field Crops (F)....3
PLSC 4300 World Food Crops and Cropping Systems: The Plants That Feed Us (Sp)....3
PLSC 4320 Forage Production and Pasture Ecology (F)....3
PLSC 4600 (QI) Cereal Science (Sp, even years)....3
PLSC 5200 Crop Physiology (Sp)....2
PLSC 5210 Crop Physiology Laboratory (Sp)....1
PLSC 5550* Weed Biology and Control (F)....4
PLSC 5700 Principles of Plant Breeding (Sp, odd years)....3
PLSC 5750 Crop Biotechnology (Sp)....2
PSB 4250 Internship in Plants, Soils, and/or Biometeorology (F,Sp,Su)....1-4
PSB 5200 Site-Specific Agriculture and Landscape/Horticultural Management (Sp, half semester)....3

Additional Soils-related Courses:

Students must complete at least 11 credits chosen from the following soils-related courses:

SOIL 4000 Soil and Water Conservation (F)....4
SOIL 4700 Irrigated Soils (Sp, half semester)....3
SOIL 5050 Principles of Environmental Soil Chemistry (Sp)....3
SOIL 5130 Soil Genesis, Morphology, and Classification (F)....4
SOIL 5310 Soil Microbiology (F, even years)....3
SOIL 5320 Soil Microbiology Laboratory (F, even years)....2
SOIL 5550 (QI) Soils and Plant Nutrient Bioavailability (Sp)....3
SOIL 5560 Analytical Techniques for the Soil Environment (Sp)....2
SOIL 5650 Applied Soil Physics (F)....3

B. Research/Biotechnology Emphasis (58 credits)

Students must complete *all* of the following courses for the Research/Biotechnology Emphasis (38 credits).

BIOL 3200 (QI) Principles of Genetics (F,Sp,Su) 4
CHEM 1210 Principles of Chemistry I (F,Sp) 4
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) 4
CHEM 1230 Chemical Principles Laboratory I (F,Sp) 1
CHEM 1240 Chemical Principles Laboratory II (F,Sp) 1
CHEM 2310 Organic Chemistry I (F) 4
CHEM 2320 Organic Chemistry II (Sp) 4
CHEM 2330 Organic Chemistry Laboratory I (F,Sp) 1
CHEM 2340 Organic Chemistry Laboratory II (Sp, blocks 1 & 2) 1
CHEM 3700 Introductory Biochemistry (Sp) 3
CHEM 3710 Introductory Biochemistry Laboratory (Sp) 1
MATH 1060 Trigonometry (F,Sp,Su) 2
PLSC 5200 Crop Physiology (Sp) 2
PLSC 5210 Crop Physiology Laboratory (Sp) 1
PLSC 5750 Crop Biotechnology (Sp) 2
SOIL 5550 (QI) Soils and Plant Nutrient Bioavailability (Sp) 3

Additional Crop-related Courses:
Students must complete at least 18 credits chosen from the following crop-related courses:
PLSC 2650 Identification and Selection of Plants in Production Agriculture (F) 1
PLSC 3700 Plant Propagation (F) 4
PLSC 4280 Field Crops (F) 3
PLSC 4300 World Food Crops and Cropping Systems: The Plants That Feed Us (Sp) 3
PLSC 4320 Forage Production and Pasture Ecology (F) 3
PLSC 4600 (QI) Cereal Science (Sp, even years) 3
PLSC 5550 Weed Biology and Control (F) 4
PLSC 5700 Principles of Plant Breeding (Sp, odd years) 3
PSB 5160 Methods in Biotechnology: Cell Culture (Sp) 3
PSB 5240 Methods in Biotechnology: Protein Purification Techniques (Sp) 3
PSB 5260 Methods in Biotechnology: Molecular Cloning (F) 3
SOIL 5560 Analytical Techniques for the Soil Environment (Sp) 2

The following courses are also recommended:
BIOL 4410 Plant Structure (Sp) 3
BIOL 4500 Applied Entomology (Sp) 3
BIOL 5210 Cell Biology (F) 3
BIOL 5230 Developmental Biology (Sp) 3
BIOL 5410 Introduction to Plant Pathology (F) 4
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
PHYX 2110 The Physics of Living Systems I 4
PLSC 5440 Plant Molecular, Cellular, and Developmental Biology I (Sp) 3
PLSC 5450 Plant Molecular, Cellular, and Developmental Biology II (Sp) 3

Sample Curriculum for Crop Science Major—Agronomy Emphasis

The sample curriculum shows most lower-division courses selected freshman and sophomore years, and most upper-division courses selected junior and senior years.

Freshman Year (30 credits)

Fall Semester (15 credits)
BIOL 1210[1] Biology I 4
MATH 1050 (QL)[1] College Algebra 4
PSB 1050[1] Plants, Soils, and Biometeorology Orientation 1
CHEM 1110 (BPS)[2] General Chemistry I 4
Elective[6] 2

Spring Semester (15 credits)
BIOL 1220 (BLS)[1] Biology II 4
CHEM 1120 (BPS)[2] General Chemistry II 4
CHEM 1130[2] General Chemistry Laboratory 1
ECON 1500 (BAI)[1] Introduction to Economic Institutions, History, and Principles 3
PSB 2040[6] Introduction to Biotechnology 1
Elective[6] 2

Sophomore Year (32 credits)

Fall Semester (16 credits)
PLSC 4280[3] Field Crops 3
PLSC 4320[3] Forage Production and Pasture Ecology 3
USU 1320 (BHU) Civilization: Humanities 3
USU 1330 (BCA) Civilization: Creative Arts 3
ENGL 2010 (CL)[5] Intermediate Writing: Research Writing in a Persuasive Mode 3
PLSC 2650[3] Identification and Selection of Plants in Production Agriculture 1

Spring Semester (16 credits)
PLSC 3500[3] The Structure and Function of Economic Crop Plants 3
PLSC 4300[3] World Food Crops and Cropping Systems: The Plants That Feed Us 3
PHYX 1200 (BPS)[1] Introduction to Physics by Hands-on Exploration 4
BIS 3100 (DSS)[5] Business Information Systems 3
BIOL 4500[7] Applied Entomology 3

Junior Year (31 credits)

Fall Semester (15 credits)
BIOL 3200 (QI)[3] Principles of Genetics 4
BIOL 5410[7] Introduction to Plant Pathology 4
SOIL 3000[1] Fundamentals of Soil Science 4
HIST 3850 (DHA/CI)[5] History of Utah 3

Spring Semester (16 credits)
PLSC 4600 (QI)[3] Cereal Science (taught even years *only*) 3
PLSC 5700[3] Principles of Plant Breeding (taught odd years *only*) 3
SOIL 4700[4] Irrigated Soils (half semester) 3
STAT 3000 (QI)[6] Statistics for Scientists 3
Elective[6] 4

Senior Year (30 credits)

Fall Semester (15 credits)
BIOL 4400 (QI)[1] Plant Physiology 4
PLSC 5550[7] Weed Biology and Control 4
PSB 4250[3] Internship in Plants, Soils, and/or Biometeorology 2
PSB 4890 (CI)[1] Senior Seminar 1
SOIL 4000[4] Soil and Water Conservation 4

Spring Semester (15 credits)
BIOL 4410[3] Plant Structure 3
PLSC 5200[3] Crop Physiology 2
PLSC 5210[3] Crop Physiology Laboratory 1
SOIL 5550 (QI)[4] Soils and Plant Nutrient Bioavailability 3
SOIL 5560[4] Analytical Techniques for the Soil Environment 2
Elective[6] 4

Sample Curriculum for Crop Science Major—Research/Biotechnology Emphasis

The sample curriculum shows most lower-division courses selected freshman and sophomore years, and most upper-division courses selected junior and senior years.

Freshman Year (28 credits)
Fall Semester (15 credits)
BIOL 1210[1] Biology I 4
MATH 1050 (QL)[1] College Algebra 4
PSB 1050[1] Plants, Soils, and Biometeorology Orientation 1
CHEM 1210[8] Principles of Chemistry I 4
CHEM 1230[8] Chemical Principles Laboratory I 1
Elective[11] 1

Spring Semester (13 credits)
BIOL 1220 (BLS)[1] Biology II 4
CHEM 1220 (BPS)[8] Principles of Chemistry II 4
CHEM 1240[8] Chemical Principles Laboratory II 1
ECON 1500 (BAI)[1] Introduction to Economic Institutions, History, and Principles 3
PSB 2040[11] Introduction to Biotechnology 1

Sophomore Year (31 credits)
Fall Semester (15 credits)
CHEM 2310[8] Organic Chemistry I 4
CHEM 2330[8] Organic Chemistry Laboratory I 1
USU 1320 (BHU) Civilization: Humanities 3
USU 1330 (BCA) Civilization: Creative Arts 3
ENGL 2010 (CL)[5] Intermediate Writing: Research Writing in a Persuasive Mode 3
PLSC 2650[9] Identification and Selection of Plants in Production Agriculture 1

Spring Semester (16 credits)
CHEM 2320[8] Organic Chemistry II 4
CHEM 2340[8] Organic Chemistry Laboratory II (blocks 1 & 2) 1
PHYX 1200 (BPS)[1] Introduction to Physics by Hands-on Exploration 4
BIS 3100 (DSS)[5] Business Information Systems 3
MATH 1210 (QL)[10] Calculus I 4

Junior Year (28 credits)
Fall Semester (15 credits)
BIOL 3200 (QI)[8] Principles of Genetics 4
SOIL 3000[1] Fundamentals of Soil Science 4
PLSC 3700[9] Plant Propagation 4
HIST 3850 (DHA/CI)[5] History of Utah 3

Spring Semester (13 credits)
CHEM 3700[8] Introductory Biochemistry 3
CHEM 3710[8] Introductory Biochemistry Laboratory 1
PLSC 4600 (QI)[9] Cereal Science (taught even years *only*) 3
STAT 3000 (QI)[11] Statistics for Scientists 3
Elective[11] 3

Senior Year (32 credits)
Fall Semester (15 credits)
BIOL 4400 (QI)[1] Plant Physiology 4
BIOL 5210[10] Cell Biology 3
PLSC 5550[9] Weed Biology and Control 4
PSB 4890 (CI)[1] Senior Seminar 1
Elective[11] 3

Spring Semester (17 credits)
BIOL 5230[10] Developmental Biology 3
PLSC 5200[8] Crop Physiology 2
PLSC 5210[8] Crop Physiology Laboratory 1
PLSC 5750[8] Crop Biotechnology 2
SOIL 5550 (QI)[8] Soils and Plant Nutrient Bioavailability 3
Elective[11] 5

[1]This course is required as part of the Crop Science Major Core.
[2]This course is required for the Agronomy Emphasis.
[3]This course is included in the Additional Crop-related Courses for the Agronomy Emphasis.
[4]This course is included in the Additional Soils-related Courses for the Agronomy Emphasis.
[5]This course is a restricted elective. Other courses may be used to satisfy this requirement.
[6]This course is an unrestricted elective.
[7]Students must complete at least 9 credits selected from these Agronomy Emphasis courses.
[8]This course is required for the Research/Biotechnology Emphasis.
[9]This course is included in the Additional Crop-related Courses for the Research/Biotechnology Emphasis.
[10]This course is a recommended elective for the Research/Biotechnology Emphasis.
[11]This course is an unrestricted elective. Some suggested courses are indicated.

ARCPACS Certification

For more information, students should refer to the American Society of Agronomy website at: **http://www.agronomy.org** *or* **http://www.agronomy.org/certification**

ARCPACS Requirements

Certified Professional Agronomist (84 credits)
Certified Professional Crop Scientist (84 credits)
Certified Professional Weed Scientist (82 credits)

Students wishing to obtain ARCPACS certification must satisfy the requirements for the Bachelor of Science degree, as well as complete any additional courses.

For **Certified Agronomist** or **Certified Weed Scientist**, take 9 credits chosen from the following courses. For **Certified Crop Scientist**, take 15 credits chosen from the following courses.
PLSC 3800 Turfgrass Management (F) 3
PLSC 4280 Field Crops (F) 3
PLSC 4300 World Food Crops and Cropping Systems: The Plants That Feed Us (Sp) 3
PLSC 4320 Forage Production and Pasture Ecology (F) 3
PLSC 4600 (QI) Cereal Science (Sp, even years) 3
PLSC 5200 Crop Physiology (Sp) 2
PLSC 5210 Crop Physiology Laboratory (Sp) 1
PLSC 5700 Principles of Plant Breeding (Sp, odd years) 3

All ARCPACS categories (Agronomy, Crop Science, and Weed Science) require the following course:
SOIL 5550 (QI) Soils and Plant Nutrient Bioavailability (Sp) 3

For **Certified Agronomist**, take at least 6 credits from the following list:
SOIL 4000 Soil and Water Conservation (F) 4
SOIL 4700 Irrigated Soils (Sp, half semester) 3
SOIL 5050 Principles of Environmental Soil Chemistry (Sp) 3
SOIL 5130 Soil Genesis, Morphology, and Classification (F) 4

For **Certified Agronomist** or **Certified Crop Scientist**, take at least two of the following four courses:
BIOL 4500 Applied Entomology (Sp) 3
BIOL 5410 Introduction to Plant Pathology (F) 4
FRWS 5100 Wildlife Management Laboratory (F) 3
PLSC 5550 Weed Biology and Control (F) 4

For **Certified Agronomist** or **Certified Crop Scientist**, take *all* of these courses:
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp) 3
SPCH 1050 (CI) Public Speaking (F,Sp) 3
CS 1010 (BPS) Foundations of Computer Science, and the Application of Computer Science to the Investigation of Physical Systems and Phenomena (F,Sp,Su) 3

ECON 2010 (BSS) Introduction to Microeconomics (F,Sp,Su) 3
STAT 1040 (QL) Introduction to Statistics (F,Sp,Su) 3
CHEM 3650 Environmental Chemistry (Sp) 3

For **Certified Weed Scientist**, choose 9 credits from the above list. In addition, take at least 19 credits from the following, including the four courses identified with an asterisk (*):
BIOL 4410* Plant Structure (Sp) 3
BIOL 4420* Plant Taxonomy (Sp) 3
BIOL 4500 Applied Entomology (Sp) 3
BIOL 5410 Introduction to Plant Pathology (F) 4
FRWS 5100 Wildlife Management Laboratory (F) 3
PLSC 2200* Pest Management Principles and Practices (Sp) 3
PLSC 5550* Weed Biology and Control (F) 4

Horticulture Major

Students must complete the core courses and courses for one of the four emphases to fulfill the requirements for a Horticulture Degree.

Core Courses (26-29 credits)
BIS 1400 Microcomputer Applications in Business (F,Sp,Su) 3
CHEM 1110 (BPS) General Chemistry I (F,Sp) (4 cr) **or**
CHEM 1210 Principles of Chemistry I (F,Sp) (4 cr) 4
FRWS 2200 (BLS) Ecology of Our Changing World (F,Sp) 3
MATH 1050 (QL) College Algebra (F,Sp,Su) 4
PLSC 2250 Occupational Experience in Agronomy and Horticulture (F,Sp) (1-4 cr) **or**
PSB 4250 Internship in Plants, Soils, and/or Biometeorology (F,Sp) (1-4 cr) 1-4
PLSC 2650 Identification and Selection of Plants in Production Agriculture (F) 1
PSB 1050 Plants, Soils, and Biometeorology Orientation (F) 1
PSB 4890 (CI) Senior Seminar (take one credit per semester) (F,Sp) .. 2
SOIL 3000 Fundamentals of Soil Science (F,Sp) 4
Advisor-approved PSB upper-division course 3

A. Ornamental Horticulture Emphasis (44 credits minimum)

In addition to the Core Courses, select 36 credits from the following courses. Those marked with an asterisk (*) are required.
ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp) 3
BIOL 1210* Biology I (F) 4
BIOL 1220 (BLS)* Biology II (Sp) 4
PLSC 2100 (BLS) Introduction to Horticulture (F) 3
PLSC 2600* Annual and Perennial Plant Materials (F) 1.5
PLSC 2610 Indoor Plants and Interiorscaping (F) 1.5
PLSC 2620* Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
PLSC 3050 Greenhouse Management and Crop Production (Sp) 4
PLSC 3300 Residential Landscapes (Sp) 3
PLSC 3400 Landscape Management Principles and Practices (F) 3
PLSC 3700 Plant Propagation (F) 4
PLSC 3800 Turfgrass Management (F) 3
PLSC 4400* Modern Vegetable Production (F) 3
PLSC 4500* Fruit Production (Sp) 4
PLSC 4800 Professional Turfgrass Management (Sp, even years) 2
SOIL 5550 (QI)* Soils and Plant Nutrient Bioavailability (Sp) 3

Select two of the following courses:
BIOL 4500 Applied Entomology (Sp) 3
BIOL 5410 Introduction to Plant Pathology (F) 4
PLSC 5550 Weed Biology and Control (F) 4

Select two of the following courses (not including CHEM 1130):
BIOL 4400 (QI) Plant Physiology (F) 4
BIOL 4410 Plant Structure (Sp) 3
CHEM 1120 (BPS) General Chemistry II (Sp) 4
CHEM 1130 General Chemistry Laboratory (Sp) 1
PLSC 3500 The Structure and Function of Economic Crop Plants (Sp) 3
PLSC 5200 Crop Physiology (Sp, half semester) 2
PLSC 5210 Crop Physiology Laboratory (Sp) 1

B. Landscape Maintenance and Construction Emphasis (44.5-45.5 credits)

In addition to the Core Courses, students must complete the following courses for the Landscape Maintenance and Construction Emphasis. All courses are required.
BIOL 1210 Biology I (F) 4
LAEP 1200 Basic Graphics in Landscape Architecture (F) 4
LAEP 2600 (QI) Landscape Construction I (F) 4
LAEP 3500 Planting Design (F) 2
LAEP 3610 Landscape Construction II (Sp) 4
PLSC 2200 Pest Management Principles and Practices (Sp) 3
PLSC 2600 Annual and Perennial Plant Materials (F) 1.5
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
PLSC 3400 Landscape Management Principles and Practices (F) 3
PLSC 3500 The Structure and Function of Economic Crop Plants (Sp) 3
PLSC 3800 Turfgrass Management (F) 3
PLSC 4400 Modern Vegetable Production (F) (3 cr) **or**
PLSC 4500 Fruit Production (Sp) (4 cr) ..... 3 or 4
PLSC 5550 Weed Biology and Control (F) 4
SOIL 4700 Irrigated Soils (Sp, half semester) 3

The following courses are suggested as electives:
ASTE 3200 Irrigation Principles and Practices (Sp) 3
PLSC 2100 (BLS) Introduction to Horticulture (F) 3
PLSC 2610 Indoor Plants and Interiorscaping (F) 1.5
PLSC 3700 Plant Propagation (F) 4
PLSC 4800 Professional Turfgrass Management (Sp, even years) 2
PSB 5200 Site-Specific Agriculture and Landscape/Horticultural Management (Sp, half semester) 3
SOIL 5550 (QI) Soils and Plant Nutrient Bioavailability (Sp) 3

C. Turfgrass Management Emphasis (44-49 credits)

In addition to the Core Courses, students must complete the following courses for the Turfgrass Management Emphasis.
BIOL 1210 Biology I (F) 4
BIOL 1220 (BLS) Biology II (Sp) 4
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
PLSC 3400 Landscape Management Principles and Practices (F) 3
PLSC 3800 Turfgrass Management (F) 3
PLSC 4400 Modern Vegetable Production (F) (3 cr) **or**
PLSC 4500 Fruit Production (Sp) (4 cr) ..... 3 or 4
PLSC 4800 Professional Turfgrass Management (Sp, even years) 2

The following courses are suggested as electives. Select a minimum of two courses from each category:
Horticulture
ASTE 3080 Compact Power Units for Agricultural and Turfgrass Applications (Sp) 3
ASTE 3200 Irrigation Principles and Practices (Sp) 3
FRWS 5300 Wildlife Damage Management Principles (Sp) 3
PLSC 2200 Pest Management Principles and Practices (Sp) 3
PLSC 3300 Residential Landscapes (Sp) 3
PLSC 3700 Plant Propagation (F) 4
PLSC 5100 Landscape Irrigation Management (Sp) 3
PLSC 5550 Weed Biology and Control (F) 4
SOIL 4700 Irrigated Soils (Sp, half semester) 3

Science
BIOL 2220 General Ecology (F,Sp) 3
BIOL 3040 Plants and Civilization (F) 3
BIOL 4400 (QI) Plant Physiology (F) 4
BIOL 4410 Plant Structure (Sp) 3
BIOL 4420 Plant Taxonomy (Sp) 3
BIOL 4500 Applied Entomology (Sp) 3
BIOL 5410 Introduction to Plant Pathology (F) 4
CHEM 1120 (BPS) General Chemistry II (Sp) 4
CHEM 1230 General Chemistry Laboratory (F,Sp) 1
PLSC 3500 The Structure and Function of Economic Crop Plants (Sp) 3
PLSC 5200 Crop Physiology (Sp) 2
PLSC 5210 Crop Physiology Laboratory (Sp) 1
PLSC 5430 Plant Nutrition (F) 2
SOIL 4000 Soil and Water Conservation (F) 4
SOIL 5550 (QI) Soils and Plant Nutrient Bioavailability (Sp) 3
STAT 2000 (QI) Statistical Methods (F,Sp) 3

Business
ACCT 2010 Survey of Accounting I (F,Sp,Su) 3
ASTE 3050 (CI) Technical and Professional Communication Principles in Agriculture (F,Sp) 3
BA 3500 Fundamentals of Marketing (F,Sp,Su) 3
ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles (F,Sp) 3
MHR 2990 Legal and Ethical Environment of Business (F,Sp,Su) 3
MHR 3110 (DSS) Managing Organizations and People (F,Sp) 3
MHR 3710 Developing Team and Interpersonal Skills (F,Sp) 3

D. Business Emphasis (45 credits)
In addition to the Core Courses, select 30 credits from the following courses. Those marked with an asterisk (*) are required.
BIOL 1210* Biology I (F) 4
PLSC 2100 (BLS) Introduction to Horticulture (F) 3
PLSC 2200* Pest Management Principles and Practices (Sp) 3
PLSC 2600 Annual and Perennial Plant Materials (F) 1.5
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
PLSC 3050 Greenhouse Management and Crop Production (Sp) 4
PLSC 3300 Residential Landscapes (Sp) 3
PLSC 3400 Landscape Management Principles and Practices (F) 3
PLSC 3500* The Structure and Function of Economic Crop Plants (Sp) 3
PLSC 3700 Plant Propagation (F) 4
PLSC 3800 Turfgrass Management (F) 3
PLSC 4400* Modern Vegetable Production (F) 3
PLSC 4500* Fruit Production (Sp) 4
PLSC 5200 Crop Physiology (Sp) 2
PLSC 5210 Crop Physiology Laboratory (Sp) 1
PLSC 5550* Weed Biology and Control (F) 4
SOIL 4700 Irrigated Soils (Sp, half semester) 3
SOIL 5550 (QI)* Soils and Plant Nutrient Bioavailability (Sp) 3

The following courses are required for a Business Minor and the Business Emphasis:
ACCT 2010 Survey of Accounting I (F,Sp,Su) 3
BA 3460 Fundamentals of Personal Investing 3
BA 3500 Fundamentals of Marketing (F,Sp,Su) 3
MHR 2990 Legal and Ethical Environment of Business (F,Sp,Su) (3 cr) **or**
BIS 3100 (DSS) Business Information Systems (F,Sp,Su) (3 cr) 3
MHR 3110 (DSS) Managing Organizations and People (F,Sp) 3

E. Science Emphasis (44 credits minimum)
In addition to the Core Courses, students must select 41 credits from the following courses for the Science Emphasis. Those marked with an asterisk (*) are required.
BIOL 1210* Biology I (F) 4
BIOL 1220 (BLS)* Biology II (Sp) 4
BIOL 3200 (QI) Principles of Genetics (F,Sp) 4
BIOL 4400 (QI)* Plant Physiology (F) 4
BIOL 4410 Plant Structure (Sp) 3
CHEM 1120 (BPS) General Chemistry II (Sp) 4
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp) 4
CHEM 1230 Chemical Principles Laboratory I (F,Sp) 1
CHEM 1240 Chemical Principles Laboratory II (F,Sp) 1
CHEM 2310 Organic Chemistry I (F) 4
CHEM 2320 Organic Chemistry II (Sp) 4
CHEM 3700 Introductory Biochemistry (Sp) 3
CHEM 3710 Introductory Biochemistry Laboratory (Sp) 1
MATH 1060 Trigonometry (F,Sp,Su) 2
MATH 1100 (QL)* Calculus Techniques (F,Sp,Su) 3
PHYX 1200 (BPS) Introduction to Physics by Hands-on Exploration 4
PLSC 3700 Plant Propagation (F) 4
PLSC 4400* Modern Vegetable Production (F) 3
PLSC 4500* Fruit Production (Sp) 4
PLSC 5200* Crop Physiology (Sp) 2
PLSC 5210 Crop Physiology Laboratory (Sp) 1
PLSC 5760 Crop Ecology (Sp) 2
SOIL 5550 (QI)* Soils and Plant Nutrient Bioavailability (Sp) 3
STAT 3000 (QI) Statistics for Scientists (F,Sp) 3
Select any Ornamental Horticulture class* 2-3

Select one of the following:
BIOL 4500 Applied Entomology (Sp) 3
BIOL 5410 Introduction to Plant Pathology (F) 4
FRWS 5100 Wildlife Management Laboratory (F) 3
PLSC 5550 Weed Biology and Control (F) 4

Environmental Soil/Water Science Major
Preparatory Core Courses (43-49 credits)
Required Courses (18 credits)
BIOL 1210 Biology I (F) 4
BIOL 1220 (BLS) Biology II (Sp) 4
GEOL 1150 (BPS) The Dynamic Earth: Physical Geology (F,Sp) 4
FRWS 2200 (BLS) Ecology of Our Changing World (F,Su) (3 cr) **or**
BIOL 2220 General Ecology (F,Sp) (3 cr) 3
STAT 2000 (QI) Statistical Methods (F,Sp,Su) (3 cr) **or**
STAT 3000 (QI) Statistics for Scientists (F,Sp) (3 cr) 3

Chemistry Courses (9 or 13 credits)
Complete *one* of the two following blocks of Chemistry courses:
Block 1 (9 credits)
CHEM 1110 (BPS) General Chemistry I (F,Sp) 4
CHEM 1120 (BPS) General Chemistry II (Sp) 4
CHEM 1130 General Chemistry Laboratory (Sp) 1

Block 2 (13 credits)[12]
CHEM 1210 Principles of Chemistry I (F,Sp) 4
CHEM 1220 (BPS) Principles of Chemistry II (F,Sp,Su) 4
CHEM 1230 Chemical Principles Laboratory I (F,Sp) 1
CHEM 1240 Chemical Principles Laboratory II (F,Sp) 1
CHEM 2300 Principles of Organic Chemistry (F) 3

Mathematics Courses (10 or 8 credits)
Complete *one* of the two following blocks of Mathematics courses:
Block 1 (10 credits)
MATH 1050 (QL) College Algebra (F,Sp,Su) 4

MATH 1060 Trigonometry (F,Sp,Su) 2
MATH 1210 (QL) Calculus I (F,Sp,Su) 4

Block 2 (8 credits)[12]
MATH 1210 (QL) Calculus I (F,Sp,Su) 4
MATH 1220 (QL) Calculus II (F,Sp,Su) 4

Physics Courses (8 credits)
Complete *one* of the two following blocks of Physics courses:
Block 1 (8 credits)
PHYX 2110 The Physics of Living Systems I 4
PHYX 2120 (BPS) The Physics of Living Systems II 4

Block 2 (8 credits)[12]
PHYX 2210 (QI) General Physics—Science and Engineering I 4
PHYX 2220 (BPS/QI) General Physics—Science and Engineering II .. 4

Professional Core Courses (26 credits)
SOIL 3000 Fundamentals of Soil Science (F,Sp) 4
SOIL 5050 Principles of Environmental Soil Chemistry (Sp) 3
SOIL 5130 Soil Genesis, Morphology, and Classification (F) 4
SOIL 5310 Soil Microbiology (F, even years) (3 cr) **or**
SOIL 5550 (QI)[13] Soils and Plant Nutrient Bioavailability (Sp) (3 cr) 3
SOIL 5560 Analytical Techniques for the Soil Environment (Sp) 2
SOIL 5600 Surface Hydrologic Field Methods (Sp) 3
SOIL 5650 Applied Soil Physics (F) 3
SOIL 5750 Environmental Quality: Soil and Water (Sp) 2
PSB 4890 (CI) Senior Seminar (F,Sp) (take 1 credit per semester) 2

[12]Students in the **Water Emphasis** should take the **Block 2** courses in Chemistry, Mathematics, and Physics.
[13]Students in the **Plant Emphasis** must select **SOIL 5550**.

Emphases
Students must select 12 credits from one or a combination of the following three emphases.

Soil Emphasis
AWER 4750[14] Fundamentals of Remote Sensing Science (F) 3
AWER 4930 Geographic Information Systems (F) 4
AWER 5930 Geographic Information Analysis (Sp) 4
BMET 5250 Remote Sensing of Land Surfaces (Sp) 4
CEE 5190 Geographic Information Systems for Civil Engineers (Sp) ... 3
CHEM 3600 (QI) Quantitative Analysis (F) 3
FRWS 5750 Applied Remote Sensing (Sp) 3
GEOL 3500 Mineralogy and Crystallography (Sp) 4
GEOL 3550 (CI) Sedimentation and Stratigraphy (F) 4
GEOL 3600 Geomorphology (F) 4
GEOL 5410[14] Introduction to Clay Mineralogy (Sp) 2
GEOL 5600 Geochemistry (F) 3
GEOL 5630 Photogeology 2
PSB 5200 Site-Specific Agriculture and Landscape/Horticultural Management (Sp, half semester) 3
SOIL 3100 Soils and Civilization (Sp) 3
SOIL 4000 Soil and Water Conservation (F) 4
SOIL 5310 Soil Microbiology (F) 3
SOIL 5320 Soil Microbiology Laboratory (F, even years) 2
SOIL 5350 Wildland Soils (Sp) 3
SOIL 5550 (QI) Soils and Plant Nutrient Bioavailability (Sp) 3

Water Emphasis
ASTE 5260 (CI) Environmental Impacts of Agricultural Systems (F) 3
AWER 3700 (CI) Fundamentals of Watershed Science (Sp) 3
AWER 4500 Freshwater Ecology (Sp) 3
AWER 4510 Aquatic Ecology Practicum (F) 3
AWER 4530 Water Quality and Pollution (Sp) 3
AWER 5640[14] Riparian Ecology and Management (Sp) 3
BIE 5010[14] Principles of Irrigation Engineering (F) 3
BIE 5110[14] Sprinkle and Trickle Irrigation (F) 4
BIE 5150[14] Surface Irrigation Design (Sp) 3
BMET 4300 General Meteorology (F) (not taught Fall 2005) 3
BMET 5250 Remote Sensing of Land Surfaces (Sp) 4
BMET 5500 Land-Atmosphere Interactions (Sp) 3
BMET 5700 Environmental Measurements (Sp) (not taught Spring 2006) 3
CEE 3430 Engineering Hydrology (Sp) 3
CHEM 3600 (QI) Quantitative Analysis (F) 3
GEOL 5150[14] Fluvial Geomorphology (F) 3
GEOL 5510 (QI) Groundwater Geology (F) 3
GEOL 5520 (CI)[14] Techniques of Groundwater Investigations (Sp) 3
PLSC 5200 Crop Physiology (Sp) 2
PLSC 5210 Crop Physiology Laboratory (Sp) 1
SOIL 4000 Soil and Water Conservation (F) 4
SOIL 4700 Irrigated Soils (Sp, half semester) 3

Plant Emphasis
BIOL 2410 Plants and Fungi in the Field (Su) 2
BIOL 4400 (QI) Plant Physiology (F) 4
BIOL 4410 Plant Structure (Sp) 3
BIOL 4420 Plant Taxonomy (Sp) 3
BMET 5500 Land-Atmosphere Interactions (Sp) 3
FRWS 3600 Wildland Plant Ecology and Identification (F) 4
FRWS 3700 (CI) Inventory and Assessment in Natural Resource and Environmental Management (F) 3
FRWS 3710 Monitoring and Assessment in Natural Resource and Environmental Management (Sp) 3
PLSC 2100 (BLS) Introduction to Horticulture (F) 3
PLSC 2600 Annual and Perennial Plant Materials (F) 1.5
PLSC 2610 Indoor Plants and Interiorscaping (F) 1.5
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
PLSC 3400 Landscape Management Principles and Practices (F) 3
PLSC 3800 Turfgrass Management (F) 3
PLSC 4280 Field Crops (F) 3
PLSC 4300 World Food Crops and Cropping Systems: The Plants That Feed Us (Sp) 3
PLSC 4320 Forage Production and Pasture Ecology (F) 3
PLSC 4400 Modern Vegetable Production (F) 3
PLSC 4500 Fruit Production (Sp) 4
PLSC 5200[14] Crop Physiology (Sp) 2
PLSC 5210[14] Crop Physiology Laboratory (Sp) 1
PLSC 5430[14] Plant Nutrition (F, odd years) 2
PLSC 5550 Weed Biology and Control (F) 4
PLSC 5760[14] Crop Ecology (Sp) 2
SOIL 4700 Irrigated Soils (Sp, half semester) 3

[14]Prerequisites are required for this course.

Ornamental Horticulture Program
One-year Certificate (27 credits)

The 27 credits are distributed as follows:
PLSC 2600 Annual and Perennial Plant Materials (F) 1.5
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
Additional PLSC courses selected from Associate of Applied Science Core Classes** 18.5-20
Courses selected from Approved Electives 3-5

**Students should choose courses that emphasize either Floriculture or Landscape Horticulture.

Department of Plants, Soils, and Biometeorology

Ornamental Horticulture Program Associate of Applied Science Degree (60 credits)

The 60 credits are distributed as follows:

University Studies Requirements (15 credits)

ENGL 1010 (CL) Introduction to Writing: Academic Prose (F,Sp,Su) ...3
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode (F,Sp,Su)....3
Social Sciences/Humanities Breadth Courses 6
Life Sciences/Physical Sciences Breadth Course....3

Professional Requirement

All of the Core Courses 35-38
Courses selected from Approved Electives....7-10

Core Courses (35-38 credits)

BIS 1400 Microcomputer Applications in Business (F,Sp,Su) 3
PSB 1050 Plants, Soils, and Biometeorology Orientation (F) 1
PLSC 2100 (BLS) Introduction to Horticulture (F) 3
PLSC 2200 Pest Management Principles and Practices (Sp) 3
PLSC 2250 Occupational Experience in Agronomy and Horticulture (F,Sp,Su) 1-4
PLSC 2600 Annual and Perennial Plant Materials (F) 1.5
PLSC 2610 Indoor Plants and Interiorscaping (F) 1.5
PLSC 2620 Woody Plant Materials: Trees and Shrubs for the Landscape (F) 3
PLSC 2650 Identification and Selection of Plants in Production Agriculture (F)....1
PLSC 3050 Greenhouse Management and Crop Production (Sp) 4
PLSC 3300 Residential Landscapes (Sp)....3
PLSC 3400 Landscape Management Principles and Practices (F) 3
PLSC 3700 Plant Propagation (F)....4
PLSC 3800 Turfgrass Management (F) 3

Approved Electives (10-14 credits)

Choose electives from the following courses or choose from any courses that are part of a BS Degree in Horticulture.

PLSC 2900 Special Problems in Plant Science (F,Sp,Su) 1-4
PLSC 3010 Basic Flower Arranging (F) 2
PLSC 3020 Floral Crops Judging and Contemporary Design (Sp)....2
PLSC 3500 The Structure and Function of Economic Crop Plants (Sp)....3
PLSC 4400 Modern Vegetable Production (F)....3
PLSC 4500 Fruit Production (Sp)....4
SOIL 3000 Fundamentals of Soil Science (F,Sp)....4

Minors

Crop Biotechnology Minor (16 credits required)

The following courses are required. PLSC 3700, 5750. Select the balance of credits from the following courses. At least one of the production courses, marked with an asterisk, (*) is required. PLSC 3500, 4280*, 4300*, 4320*, 4400*, 4500*, 5200, 5550, 5700, PSB 5160, 5240, 5260.

Agronomy Minor (16 credits required)

A minimum of 6 credits of Soil Science courses must be taken, including SOIL 3000. A minimum of 6 credits of Plant Science courses must be taken, including at least two of the following three courses: PLSC 4280, 4300, 4320. Select the balance of credits from the following courses: SOIL 4000, 4700, 5130, 5310, 5550, 5560, 5650, PLSC 2200, 3800, 4400, 5200, 5550, 5700.

Soil Science Minor (16 credits required)

The following course is required: SOIL 3000. Select 12 credits from the following courses: SOIL 4000, 4700, 5050, 5130, 5310, 5350, 5550, 5560, 5650, 5750.

Ornamental Horticulture Minor (16 credits required)

The following courses are required: SOIL 2000, PLSC 2200. Select the balance of credits from the following courses: PLSC 2100, 2600, 2610, 3050, 3300, 3400, 3700, 3800, 4400, 4500.

Horticulture Minor (16 credits required)

SOIL 2000 is required. Select 6 credits from the following courses: PLSC 2100, 2200, 4400, 4500, one ornamental horticulture course. Select the remaining credits from the following: PLSC 2650, 3050, 3300, 3800, SOIL 3000.

Undergraduate Research Opportunities

The Plants, Soils, and Biometeorology Department is dedicated to providing undergraduate students with opportunities to participate with faculty members in research and creative activities. Examples of recent research include salt cedar control, pasture growth dynamics, gene sequencing, and essential oils from native plants. In addition to faculty mentorship of such activities, students may obtain grants of up to $1,000 for support of their projects. For further information, students may contact any departmental faculty member, or view the undergraduate research section of the Vice President for Research website at: **http://www.usu.edu/vpr/students/**

Departmental Assessment

Review and assessment of departmental programs is a commitment of the Plants, Soils, and Biometeorology Department. In 2002, the department completed a USDA-Cooperative State Research, Education, and Extension Service review. On an ongoing basis, the department evaluates all academic programs. More information about departmental assessment can be found at:
http://www.psb.usu.edu/about/assessment/

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information

For more information about requirements for undergraduate programs and the sequence in which courses should be taken, see major requirement sheets available from the Plants, Soils, and Biometeorology Department, or accessed online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Admission Requirements

See general admission requirements, pages 93-94. Departmental admission committees and potential graduate student advisors (major professors) consider previous work experience, undergraduate and graduate records and curriculum, and formal recommendations in their decisions concerning acceptance of applicants. Students without an undergraduate or graduate degree in plants, soils, biometeorology, or a closely related field may be required to complete selected undergraduate courses prior to admission as fully matriculated graduate students in the Plants, Soils, and Biometeorology Department. Qualified applicants are occasionally denied admission because faculty members in the applicant's area of interest do not have the time or funds to advise additional students. The serious applicant is encouraged to discuss his or her goals with appropriate members of the graduate faculty prior to preparing an application.

Graduate student candidates must have scores on the verbal and quantitative portions of the Graduate Record Examination (GRE) at or above the 40th percentile. TOEFL scores of 550 or higher are required for candidates from abroad. International students with a prior degree from an English-speaking university are exempted from the TOEFL exam.

Degree Programs and Specializations

The Master of Science and Doctor of Philosophy degrees are offered as follows: (1) **Plant Science** with specializations in crop physiology, crop production and management, molecular biology, plant breeding and cytology, plant biotechnology and tissue culture, plant nutrition, space biology, and weed science; (2) **Soil Science** with specializations in molecular biology (interdepartmental program), soil and water chemistry, soil biochemistry and ecology, soil conservation systems, soil fertility and plant nutrition, soil physics, soil-plant-water relations, soil taxonomy and genesis, and soils and irrigation; (3) **Biometeorology** with specializations in agricultural meteorology, climatology, micrometeorology, remote sensing, and turbulence in plant canopies; and (4) **Ecology**. A **Master of Professional Studies in Horticulture (MPSH)** is also offered.

Course Requirements

Course requirements leading to MS or PhD degrees are developed jointly by the student and the student's advisory committee. Course selections reflect areas of specialization. There are, however, specific departmental requirements regarding physical sciences, biological sciences, and mathematics courses, which differ depending on the area of specialization.

Research

Research projects vary over time, depending on funding and other factors. Students are encouraged to visit the home page websites of the graduate faculty to determine research interests and lists of recent publications. Some of the research interests in the department include (1) the control of diseases, nematodes, weeds, and other hazards to fruit, vegetable, ornamental, and field crops; (2) physiological and genetic improvement of fruit, vegetable, ornamental, and field crops (breeding and biotechnology); (3) the evolution, genetic regulation, and utilization of apomixis and other developmental phenomena of higher plants; (4) management of agronomic and horticultural production systems; (5) horticultural landscape water management; (6) soil formation and landscape evolution; (7) soil, plant, water, and nutrient relationships; (8) management of saline and sodic soils; (9) alternative land uses; (10) improved management of animal wastes and biosolids; (11) management of soil microbial processes; (12) drainage and irrigation systems; (13) adaptations to weather and weather modification; (14) analyses and modification of large-scale surface evaporation from atmospheric boundary layer measurements; (15) spatial and temporal properties of sun flecks in plant canopies; and (16) spatial variation in surface fluxes of heat and water vapor in semiarid regions.

Financial Assistance and Assistantships

The financial awards provided by the School of Graduate Studies are listed on pages 92-93 of this catalog. The Department of Plants, Soils, and Biometeorology does not have a formal application form for financial assistance. Most monies used to assist students in the department come from research grants controlled by individual faculty members. Negotiations for financial assistance (research assistantships or part-time employment) are made between faculty members and students. The department provides a few part-time teaching assistantships (a semester at a time). Graduate teaching assistants are responsible to their major professor and to the instructor whom they assist. The MS and PhD in Biometeorology are Western Regional Graduate Programs (see page 92).

Career Opportunities

A broad range of career opportunities exists for students completing the MS or PhD degree from the Department of Plants, Soils, and Biometeorology. Graduate students specializing in the plant sciences may expect to find employment as consulting scientists, or in the private sector as plant breeders, weed scientists, etc. Graduate students specializing in the soil sciences may expect to find employment as soil scientists with government agencies or in the private sector, where they may pursue careers in environmental consulting, fertilizer retail, irrigation system design, waste management, mineland reclamation, or related environmental or agricultural pursuits. Graduate students specializing in biometeorology may expect to find employment with government agencies, as consulting scientists, or with the private sector. Graduate students specializing in ecology may expect to find employment as research scientists, as consulting ecologists, or with environmental agencies. Graduate students completing the PhD may also find career opportunities in academia.

Additional Information and Updates

Additional information and updates concerning graduate faculty and graduate student opportunities can be obtained from the web at: **http://www.psb.usu.edu**

Department of Plants, Soils, and Biometeorology

Plants, Soils, and Biometeorology Faculty

Professors
Bruce G. Bugbee, crop physiology
John G. Carman, plant reproduction and development
Steven A. Dewey, weed science
Lynn M. Dudley, soil physical chemistry
Lawrence E. Hipps, biometeorology
David J. Hole, cereal breeding
H. Paul Rasmussen, horticulture
V. Philip Rasmussen, sustainable agriculture
Larry A. Rupp, ornamental horticulture
Schuyler D. Seeley, pomology
Ralph E. Whitesides, agronomy

Research Professor
Stanford A. Young, seed production

Adjunct Professors
Michael C. Amacher, soil chemistry
Gail E. Bingham, micrometeorology
N. Jerry Chatterton, forage/range physiology/biochemistry
Wilford R. Gardner, soil physics
Henry F. Mayland, soil science
Charles W. Robbins, soil science
Edward J. Souza, plant breeding and genetics
Dale R. Westermann, soil science
Raymond M. Wheeler, plant physiology
James L. Wright, soil science

Professors Emeriti
Rulon S. Albrechtsen, plant breeding
Keith R. Allred, forage physiology
J. LaMar Anderson, pomology
Gaylen L. Ashcroft, biometeorology
William F. Campbell, crop stress physiology
Paul D. Christensen, soil science
Wade G. Dewey, plant breeding
John O. Evans, weed science
Alvin R. Hamson, horticulture
R. John Hanks, soil physics
Anthony H. Hatch, horticulture
David W. James, soil fertility
Donald T. Jensen, climatology
Jerome J. Jurinak, soil chemistry
R. Paul Larsen, horticulture
DeVere McAllister, plant breeding
Frank B. Salisbury, plant physiology
John J. Skujins, soil microbiology
R. L. Smith, soil science
Alvin R. Southard, soil classification
James H. Thomas, international agronomy
H. Grant Vest, Jr., vegetable breeding
David R. Walker, pomology

Associate Professors
Janis L. Boettinger, soil genesis, classification and mineralogy
Grant E. Cardon, soil science
Daniel T. Drost, vegetable production
Robert R. Gillies, biometeorology
Paul R. Grossl, biogeochemist
Paul G. Johnson, turfgrass science
Roger K. Kjelgren, urban horticulture
Jennifer W. MacAdam, forage production and physiology
Jeanette M. Norton, soil microbiology

Research Associate Professor
Esmaiel Malek, biometeorology

Adjunct Associate Professors
Ari M. Ferro, phytoremediation
Kevin B. Jensen, forage breeding
John M. Stark, microbial ecology and biogeochemistry
Helga Van Miegroet, forest soils

Assistant Professors
David G. Chandler, surface hydrology
Thomas C. Griggs, agronomy
Scott B. Jones, soil physics
Kelly L. Kopp, water conservation/turfgrass science
Heidi A. Kratsch, ornamental horticulture
Dominique J. P. Roche, small grains, breeding/genetics
Yajun Wu, plant stress physiology, cell wall proteins

Research Assistant Professor
Raymond L. Cartee, soils and irrigation

Adjunct Assistant Professors
Jayne Belnap, biological soil crusts
Richard T. Lamar, environmental microbiology
Steven R. Larson, research geneticist
Michael Peel, plant breeding
Blair L. Waldron, research geneticist

Senior Lecturer
D. Craig Aston, ornamental horticulture

Lecturer
M. Cathryn Myers-Roche

Research Associates
Shyrl M. Clawson, plant breeding
Robert L. Newhall, soil conservation and sustainable agriculture

Director, Utah Botanical Gardens
William A. Varga, ornamental horticulture

Director, Soil Testing Lab
Janice Kotuby-Amacher, soil chemistry

Course Descriptions

Plant Science (PLSC), pages 580-582

Soil Science (SOIL), pages 599-600

Biometeorology (BMET), pages 470-471

Plants, Soils, and Biometeorology (PSB), pages 582-583

Department of Political Science

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Phone: (435) 797-1310
FAX: (435) 797-3751
E-mail: rsimmons@hass.usu.edu
WWW: http://websites.usu.edu/politicalscience

Assistant Head:
Patria D. Julnes, Main 320B, (435) 797-3889, pjulnes@hass.usu.edu

Graduate Program Director:
Veronica Ward, Main 324E, (435) 797-1319, vward@hass.usu.edu

Undergraduate Advisors:
Political Science:
Randy T. Simmons, Main 320C, (435) 797-1310, rsimmons@hass.usu.edu
Political Science Teaching:
Peter F. Galderisi, Main 324D, (435) 797-1313, peterg@hass.usu.edu
Law and Constitutional Studies:
Anthony A. Peacock, Main 341, (435) 797-1314, apeacock@hass.usu.edu
International Studies:
Veronica Ward, Main 324E, (435) 797-1319, vward@hass.usu.edu

Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), Master of Science (MS), and Master of Arts (MA) in Political Science; BS and BA in Law and Constitutional Studies; Administers BA in International Studies; Participates in a pilot program of Master of Social Sciences (MSS), with an emphasis in Public Administration, administered through Continuing Education.

Undergraduate Programs

Objectives

The Department of Political Science offers a flexible program to accomplish the following objectives:

1. to provide students with theoretical and factual understanding of government, politics, and political philosophy, nationally and internationally;

2. to develop students' analytic ability, communication skills, and facility with political research methods;

3. to prepare students for effective participation in civic affairs, careers in government and the teaching of government, and graduate study in political science, law, and other fields related to the public sector; and

4. to further the liberal arts education mission of the University and to enrich the educational experiences of students in all programs of study.

Admission and Prerequisite Requirements

Departmental Admission Requirements

Admission requirements for the Department of Political Science include a minimum 2.5 GPA for Political Science majors and a minimum 3.0 GPA for Law and Constitutional Studies majors. Students in good standing may apply for admission to the department.

Prerequisites

It is assumed that students registered for upper-division political science courses have acquired the basic knowledge and information taught in the lower-division courses required for the major. Anyone who wishes to take an upper-division course, but has not had the appropriate prerequisites, should consult with the instructor before registering. Faculty members reserve the right to drop from upper-division courses students who do not meet these requirements.

Graduation Requirements

Political Science Major

A. Total credits in Political Science Courses: 36

B. Overall GPA: 2.00

C. Average GPA in Political Science Courses: 2.50

D. Required Courses (15 credits)
POLS 1100 (BAI) U.S. Government and Politics (F, Sp) 3
POLS 2100 Introduction to International Politics (F, Sp) (3 cr) **or**
POLS 2200 (BSS) Comparative Politics (F, Sp) (3 cr) 3
POLS 2350 Introduction to Political Theory (F, Sp) 3
POLS 3000 (QI)[1] Introduction to Political Research (F, Sp) 3
POLS 4990 (CI)[2] Senior Research Seminar (F, Sp) 3

E. Area Requirements (15 credits minimum)
Select **two** of the following four areas: U.S. Government and Policy, International Relations, Comparative Politics, and Political Theory. Complete **nine upper-division credits** in one of the selected areas and **six upper-division credits** in the other. Even though a course may be listed under more than one area, it can be applied to *only one area*. Prior to taking the upper-division courses in a particular area, students must take the introductory course corresponding to that specific area.

1. U.S. Government and Policy
POLS 1100, U.S. Government and Politics, must be taken prior to taking any of the upper-division coursework listed below.
POLS 3110 Parties and Elections (Sp) 3
POLS 3120 Law and Politics (F) 3
POLS 3130 United States Legislative Politics (Sp) 3
POLS 3140 The Presidency (F) 3
POLS 3150 State and Local Government (Sp) 3
POLS 3170 Law and Economics (F) 3
POLS 3810 Introduction to Public Policy (F) 3
POLS 4120 American Constitutional Law (F) 3
POLS 4140 Political Organizations 3
POLS 4810 Politics and Public Policy (F) 3
POLS 4820 Natural Resources and Environmental Policy (Sp) 3
POLS 4890[3] Special Topics (F, Sp) 3
POLS 5110 Social Policy (F) 3
POLS 5130 Law and Policy (Sp) 3
POLS 5180 Natural Resource Policy (Sp) 3

2. International Relations
POLS 2100, Introduction to International Politics, *or* **POLS 2200**, Comparative Politics, must be taken prior to taking any of the upper-division coursework listed below.
POLS 3100 Global Issues (F) 3
POLS 3400 United States Foreign Policy (F, Sp) 3
POLS 4210 European Union Politics (Sp) 3

POLS 4280 Politics and War (Sp) 3
POLS 4410 Global Negotiations (Sp) 3
POLS 4450 (CI) United States and Latin America (Sp) 3
POLS 4460 National Security Policy (Sp) 3
POLS 4470 Foreign Policy in the Pacific (Sp) 3
POLS 4480 International Trade Policy (Sp) 3
POLS 4890[3] Special Topics (F, Sp) 3
POLS 5200 Global Environment (F) 3
POLS 5210 Comparative Political Change/Development (F) 3
POLS 5270 Latin American Politics and Development (Sp) 3
POLS 5290 Development in Europe (Sp) 3

3. Comparative Politics
POLS 2200, Comparative Politics, *or* **POLS 2100**, Introduction to International Politics, must be taken prior to taking any of the upper-division coursework listed below.
POLS 3190 Gender, Power, and Politics (F) 3
POLS 3210 Western European Government and Politics (F) 3
POLS 3220 Russian and East European Government and Politics (F) 3
POLS 3230 Middle Eastern Government and Politics (F) 3
POLS 3250 Chinese Government and Politics (F) 3
POLS 3270 Latin American Government and Politics (F) 3
POLS 3430 Political Geography (Sp) 3
POLS 4210 European Union Politics (Sp) 3
POLS 4220 (CI) Ethnic Conflict and Cooperation (Sp) 3
POLS 4230 Issues in Middle East Politics (Sp) 3
POLS 4260 Southeast Asian Government and Politics (Sp) 3
POLS 4410 Global Negotiations (Sp) 3
POLS 4450 (CI) United States and Latin America (Sp) 3
POLS 4890[3] Special Topics (F, Sp) 3
POLS 5120 Economics of Russia and Eastern Europe, 9th Century to 21st Century (F) 3
POLS 5210 Comparative Political Change/Development (F) 3
POLS 5230 Development in the Middle East (Sp) 3
POLS 5270 Latin American Politics and Development (Sp) 3
POLS 5290 Development in Europe (Sp) 3
POLS 5350 Evolution, Conflict, and Cooperation (Sp) 3
POLS 5440 Gender and World Politics (Sp) 3

4. Political Theory
POLS 2350, Introduction to Political Theory, must be taken prior to taking any of the upper-division coursework listed below.
POLS 3310 American Political Thought (F) 3
POLS 3320 The Foundations of American Constitutionalism 3
POLS 4130 Constitutional Theory (Sp) 3
POLS 4310 History of Political Thought I (Sp) 3
POLS 4320 History of Political Thought II (Sp) 3
POLS 4890[3] Special Topics (F, Sp) 3

F. Electives (6 credits)
In addition to the 15 credits of required prerequisite courses and the 15 credits of area courses, students must complete six upper-division elective credits. Any upper-division Political Science courses may be used to fulfill this requirement, with **two exceptions**:

1. Not more than **three** credits in Directed Readings courses (POLS 4910) can apply to this requirement.

2. Not more than **three** credits in the following courses can apply to this requirement:
   POLS 5910 Campaign Internship 2-15
   POLS 5920 Washington Internship 2-15
   POLS 5930 State Government Internship 1-15
   POLS 5940 Administrative Internship 1-12

[1]Prerequisite: STAT 1040 or MATH 1030.
[2]POLS 3000 must be taken before POLS 4990.
[3]The subject matter of POLS 4890 determines the area to which it applies.

Law and Constitutional Studies Major

This is a rigorous program designed for students interested in leadership roles in business, public communications, government, education, or the study or practice of law.

A. Total Credits in Political Science Courses: 36
Please note that none of the courses can be taken *Pass/Fail*; all Political Science courses must be taken for a letter grade. Also, all courses must be attended in their entirety. One must not take these courses during an internship.

B. Career Total and USU Cumulative GPAs: 3.00

C. Average GPA in Political Science Courses: 3.00

D. Required Courses (21 credits)
POLS 1100 (BAI) U.S. Government and Politics (F, Sp) 3
POLS 2350 Introduction to Political Theory (F, Sp) 3
POLS 3120 Law and Politics (F) 3
POLS 3170 Law and Economics (F) 3
POLS 4120 American Constitutional Law (F) 3
POLS 5130 Law and Policy (Sp) 3
POLS 3320 The Foundations of American Constitutionalism (3 cr) **or**
POLS 4130 Constitutional Theory (Sp) (3 cr) **or**
POLS 4140 Political Organizations (3 cr) 3

E. Course Sequencing
Law and Constitutional Studies majors are **required** to complete POLS 1100 (U.S. Government and Politics) as a prerequisite to all 3000- and 4000-level Political Science courses. It is **advised** that Law and Constitutional Studies majors take POLS 3120 (Law and Politics) prior to POLS 4120 (American Constitutional Law), 4130 (Constitutional Theory), or 5130 (Law and Policy).

F. Area Requirements (6 credits minimum)
Students must take a minimum of **six upper-division credits** in U.S. Government and Policy in addition to courses required for this major.

G. Electives (9 credits)
Any Political Science upper-division courses can be used to complete the major and fulfill this requirement, with **two exceptions**:

1. Not more than **three** credits in Directed Readings courses (POLS 4910) can apply to this requirement.

2. Not more than **three** credits in the following courses can apply to this requirement:
   POLS 5910 Campaign Internship 2-15
   POLS 5920 Washington Internship 2-15
   POLS 5930 State Government Internship 1-15
   POLS 5940 Administrative Internship 1-12

Minor

Students can obtain a minor in political science by completing a total of 18 credits in the field. The following courses must be included:
POLS 1100 (BAI) U.S. Government and Politics (F, Sp) 3
POLS 2100 Introduction to International Politics (F, Sp) (3 cr) **or**
POLS 2200 (BSS) Comparative Politics (F, Sp) (3 cr) 3
POLS 2350 Introduction to Political Theory (F, Sp) 3

The remaining credits must be from upper-division courses.

Teaching Major

This program is intended exclusively for students seeking careers in *secondary* education. Students must have at least 36 credits in political science courses chosen from a list available from the department and in the *Guide to the Undergraduate Program in Secondary Education at USU*, available at the USU Bookstore. A minimum 2.5 GPA in political science courses and a minimum 2.75 overall GPA are required.

Teaching Minor

This minor is designed specifically for students seeking careers in *secondary* education. Students must have at least 18 credits in political science chosen from a list available from the department and in the *Guide to the Undergraduate Program in Secondary Education at USU*, available at the USU Bookstore.

International Studies Major

The Political Science Department administers the International Studies Major. Students enrolled in this major select *either* a **Breadth Option** *or* a **Depth Option**. The **Breadth Option** is intended for students who want to have a broad exposure to international studies. Students must take 24 credits of core and elective international studies courses, complete a departmental minor, complete three years of foreign language study, spend at least eight weeks living in a foreign country or countries, and complete a 3-credit senior thesis or project. The **Depth Option** is intended for students who want to tie their disciplinary skills to an in-depth study of a particular area of the world. This track of the International Studies major would be pursued as a dual major. The student's disciplinary program (first major) must be an approved major at USU other than the International Studies major. Courses may ***not*** be double-counted between the primary major and the International Studies major. Further information about this major is on pages 308-310. For assistance with course selection, program planning, and meeting graduation requirements, contact the Political Science Department (Main 320A, 797-1306).

Internships

The department places approximately 40-45 students in government or related internships each year. Most of these interns work with a member of the Utah delegation to the U.S. Congress in Washington, D.C., a member of the Utah Legislature in Salt Lake City, a political campaign, a state or local administrative agency, or a lobbying group. Students in any major, of at least junior class standing, and having a minimum GPA of 3.0 are eligible to apply.

Pi Sigma Alpha

Pi Sigma Alpha is the national honorary political science society. A member must have earned at least 15 credits in political science courses with a minimum 3.0 GPA and a minimum 3.0 GPA overall.

Financial Support

The Political Science Department offers a number of scholarships yearly to students. Contact the College of Humanities, Arts and Social Sciences dean's office for applications (usually available around the first week of January and due back the first week of March) at (435) 797-1195 or visit the college office in Main 338.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Additional Information

For detailed information about requirements for the majors and minors within the Political Science Department, see the major requirement sheets, which can be obtained from the department, or online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Departmental Admission Requirements

Applicants must have a BS or BA degree. An undergraduate GPA of 3.0 or better, or a GPA of 3.5 or better over the last 90 semester credits of undergraduate coursework is required. Students must have quantitative, verbal, and analytical GRE scores at or above the 50th percentile. Applicants with very high GPAs and other exceptional supporting materials may petition for admission with deficient GRE scores. The graduate admissions committee will review petitions individually.

International students must receive a score of 550 or better on the TOEFL exam.

Due to limited space, acceptance into Political Science graduate programs is not guaranteed, even for students who meet admission requirements. Moreover, all students are expected to perform at high levels throughout their program. Any student receiving a *C* grade or lower for any course at any level or a grade point average below 3.0 for a given semester will be placed on academic probation. Receipt of two grades of *C* or lower or a grade point average below 3.0 for two semesters will result in termination from the program. In addition, students must meet the requirements of the School of Graduate Studies. Applicants not meeting minimum requirements may be allowed to correct deficiencies concurrently with graduate coursework.

Applications will be considered throughout the year. However, students who wish to be considered for financial aid outside of the department must submit applications by **March 15** for the coming academic year.

No application will be considered until all required information arrives in the office of the School of Graduate Studies.

Department of Political Science

Assistantships

The department appoints a number of teaching assistants, each with a $7,000 annual stipend. Appointments are for one year, but are renewable for a second year. Research assistantships and government internships are sometimes available as well. Applications are available from the Political Science Department and are due on March 1.

Course Requirements

Students must choose between two tracks: (1) **Public Choice and Public Policy** or (2) **Comparative and International Change**. Course requirements differ according to the track chosen. All students, however, must take POLS 6010 (Scope and Methods of Political Science), which is the foundation course for the program.

Public Choice and Public Policy

Students in this track must complete the following courses:
POLS 6030 Political Theory, Political Economy, and Capitalism (Sp)...3
POLS 6040 Public Choice (F).....3

In addition, students must complete 3 credits chosen from the following list:
POLS 5110 Social Policy (F).....3
POLS 5130 Law and Policy (Sp).....3
POLS 5180 Natural Resource Policy (Sp).....3
ECON 5500 Public Finance (F).....3
Students must also take at least one course from the **Comparative and International Change** track.

Comparative and International Change

Students in this track must complete:
POLS 6220 International Relations Theory (F).....3

In addition, students must complete 6 credits chosen from the following list:
POLS 5200 Global Environment (F).....3
POLS 5210 Comparative Political Change/Development (F).....3
POLS 5230 Development in the Middle East (Sp).....3
POLS 5270 Latin American Politics and Development (Sp).....3
POLS 5290 Development in Europe (Sp).....3
POLS 5350 (DSS) Evolution, Conflict, and Cooperation (Sp).....3
POLS 6030 Political Theory, Political Economy, and Capitalism (Sp)...3
Students must also take at least one course from the **Public Choice and Public Policy track**.

For both tracks, the remaining 15 credits needed for the graduate degree may be comprised of: (1) up to 6 credits of POLS 6910 (subject to approval); (2) up to 3 credits of POLS 6920 (subject to approval); (3) up to 3 credits of approved graduate courses outside of Political Science; and (4) other Political Science graduate courses. No more than 15 semester credits of 5000-5990 coursework may be used for a graduate degree.

Political Science Faculty

Professors
William L. Furlong, Latin America, Central America, democratization, development
Carolyn Rhodes, international relations, comparative politics, European union, trade
Randy T. Simmons, environmental politics and policy, public choice

Adjunct Professors
Larry Boothe, national security policy
James L. Waite, European policy, comparative European government, methodology, public opinion

Professor Emeritus
Stanford Cazier, U.S. government, public law

Associate Professors
Peter F. Galderisi, parties, elections, interest groups, research methods, statistics
David B. Goetze, human cooperation and conflict, ethnic conflict, evolutionary theory
Roberta Q. Herzberg, public choice, health policy, public policy
Patria D. Julnes, public administration, organization theory, information technology management, quantitative and statistical methods
Michael S. Lyons, U.S. government, Congress, public policy, elections
Peter McNamara, political theory
Anthony A. Peacock, public law
Veronica Ward, international relations, social choice, global environmental issues, conflict and cooperation

Adjunct Associate Professor
Charles E. Kay, environmental policy ecology

Senior Lecturer
Carol L. McNamara, political theory, presidency

Lecturers
Jeannie L. Johnson, international relations, comparative cultures
Shannon Peterson, international relations, foreign policy

Course Descriptions

Political Science (POLS), pages 583-585

Department Head: David M. Stein
Location: Emma Eccles Jones Education 487E
Phone: (435) 797-1460
Department Mailing Address:
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Utah State University, 2810 Old Main Hill,
Logan UT 84322-2810
FAX: (435) 797-1448
E-mail: psydept@cc.usu.edu
WWW: http://www.coe.usu.edu/psyc/

Graduate Program Coordinators:

Combined Clinical/Counseling/School PhD:
Susan L. Crowley, Education 479, (435) 797-1251,
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Research and Evaluation Methodology PhD:
Karl R. White, Education 430, (435) 797-3013,
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School Counseling MS:
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Undergraduate Program Faculty Coordinator:
Tamara J. Ferguson, Education 499, (435) 797-3272,
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Undergraduate Advisors:
Karen R. Ranson, Education 475, (435) 797-1456,
karen.ranson@usu.edu

Tressa M. Haderlie, Education 477, (435) 797-0097,
thaderlie@cc.usu.edu

Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), Master of Science (MS), and Doctor of Philosophy (PhD) in Psychology

Graduate specializations: *MS*—School Psychology, School Counseling; *PhD*—Combined Clinical/Counseling/School Psychology, Research and Evaluation Methodology

Undergraduate Programs

Objectives

Psychologists endeavor to scientifically understand the thought processes, emotions, and behavior of both humans and animals. Psychologists specialize in diverse areas. Some psychologists seek to better understand the interactions among genetic, biological, social, and psychological determinants of behavior. Other psychologists are concerned with how the body and brain create emotions, memories, and sensory experiences, and how these are perceived and interpreted. Still others are concerned with how we learn observable responses and how we process, store, and retrieve information. Additionally, psychologists focus their careers on the causes, assessment, and/or treatment of emotional and behavioral disorders. Psychologists utilize research methods to understand the causes of behavior, emotion, and thought processes.

The Department of Psychology at USU offers a rich undergraduate program in psychology with the primary objectives being:

1. To provide students with substantive knowledge in the basic discipline of psychology, such as history/systems, basic behavior processes, biological bases of behavior, development, personality, learning and cognition, social influences on individuals, research methods, and psychological disorders and treatment.

2. Teaching students how to critically analyze and solve problems pertaining to human interaction, communication, and relationships.

3. Student mastery of principles relating to the causes of behavior, basic learning processes, and the measurement and analysis of behavior.

4. Training students to use scientific and quantitative methods to better understand and apply social science research.

5. Preparing students to compete successfully for entry into nationally and internationally recognized graduate programs in the social sciences.

6. Preparing majors and minors to compete successfully for postbachelor employment opportunities in private/public education, human services, government, and corporations.

Assessment of Learning Objectives

Didactic, Laboratory, Tutorial, and Independent Coursework

All required, primary elective, and secondary elective courses in psychology address the programmatic learning objectives 1 through 6. Syllabi and ancillary course materials specify detailed learning objects in these six areas that are correlated with each unit of each course. Students complete a pre-test assessment in each of the courses pertaining to their knowledge, critical thinking and problem solving skills, principle mastery, and understanding of the scientific and quantitative methods encompassed by the discipline of psychology on which the course focuses. Their achievement of objectives in these areas is assessed periodically throughout the semester in the form of unit exams, written literature reviews or original research proposals, laboratory experiments and written exercises, or homework assignments. Post-tests are administered at the close of the semester. Records are kept of the students' performance in each area, and final course grades are determined based on mastery of the objectives.

Successful preparation and mastery of the programmatic objectives 5 and 6 are intensively addressed and assessed via the applied and research service-learning experiences that faculty offer to students via independent apprenticeship; independent research; independent applied service-learning coursework (PSY 2250, 4250, 4910, 4920, 5500, 5720, 5900, 5910, 5930, 5950, and 5960); supervision of honors' coursework in any of the required, primary elective, and secondary elective courses in psychology; active student engagement in professional psychological organizations that model the standards and expectations of each employment career or post-baccalaureate graduate education opportunity in psychology (Psi Chi, American Psychological Association, American Psychological Society, and Student Analysis of Behavior Association); student poster or paper presentations at professional societies; and student submissions to competitive undergraduate journals dedicated to teaching or research in psychology. Students prepare a detailed set of learning objectives tailored to the goals of their independently supervised teaching,

applied projects, and/or research projects. These objectives and goals form the basis for a contract to be fulfilled by the end of semester. In collaboration with the faculty or the appointed field supervisor, student progress and the final grade are assessed based on the students' successful and productive efforts toward mastering the objectives and meeting their goals. Students are expected to demonstrate mastery of the requirements of the American Psychological Association Style Manual (5th edition) in their required courses and selected coursework from the primary electives.

PSY 5950 and 5960 additionally provide students with the presentation and documentation skills needed to achieve objectives 5 and 6 (e.g., to prepare and successfully complete applications for employment, employment interviews, graduate school admission materials, letters of intent, candidate interviews, a resume, and a curriculum vita). Because PSY 5950 provides specific information that students need to document their competency and achievement of learning objectives 5 and 6, the department *strongly* advises students to enroll in PSY 5950 *very early* in their undergraduate careers. Students should take this course as soon as they know they wish to major in psychology. PSY 5950 should be taken *no later* than the semester immediately following admission to the major. (Because this course should be taken as early as is feasible, plans are underway to renumber PSY 5950 to the undergraduate level to promote earlier enrollment.) Students are also strongly advised to affiliate themselves with a faculty mentor *early* in their careers and to participate actively in the teaching and research experiences that will help them document continued achievements and mastery of objectives 5 and 6. Students should thus also enroll early in the independent research study or applied courses (PSY 4910, 5900, 5910, and 5930).

Departmental-level Competency Assessments

Students are required to complete a pre-test, as well as two post-tests, and to submit written documentation of their progress and program accomplishments. Students should make arrangements with the Psychology Advising Office to complete the pre-test and the two post-tests, and they should submit all written documentation to this office.

Student completion of the departmental competency pre-test in psychology is a formal requirement for admission to the psychology major. The pre-test is a web-based, multiple-choice assessment of students' incoming knowledge and mastery of required and elective coursework, and is correlated with the programmatic learning objectives 1-4. The Psychology Advising Office *will not* initiate the graduation application process until students have additionally completed two formal *post-test* assessments of their progress through the program, which are correlated with learning objectives 1-4. Specifically, students must take the departmental competency *post-test* in psychology, which is similar but not identical to the pre-test, as well as a departmentally prepared and administered analogue of the Graduate Record Examination subject test in psychology. Students' performance in each content area of the three tests is recorded and maintained in a confidential, password-protected file accompanied by students' pre-test and post-test scores from assessments administered in each USU-affiliated course in psychology. Graduation is not currently contingent upon the level of performance on these tests. Test performance is used, however, as a formative assessment of programmatic achievement. Students may sign an electronic release form that grants permission only to USU faculty or USU-affiliated and approved supervisors to inspect students' test performance. The performance data may be used to inform and shape the content of any letters of recommendation that faculty prepare in support of students' applications for post-baccalaureate employment or graduate school admission.

Final approval of each student's application for graduation is additionally contingent upon the student's submission of three documents to the advising office. The student must submit a professionally prepared curriculum vita in APA style, in both hard copy and electronic (PDF) format. The vita must reflect the culmination of the student's research, applied, and service-learning experiences and accomplishments in, or related to, the field of psychology. The vita must be current, must reflect all of the student's work (up to two weeks prior to graduation), and may include his or her scores on standardized national tests (e.g., the GRE, MCAT, LSAT, and/or MAT, where applicable). It should also include a reliable e-mail address and phone number that will allow the student to be contacted after graduation to volunteer information regarding his or her post-graduation successes. Along with the vita, each student must submit an accompanying approval form that has been signed by his or her faculty mentor, or USU-affiliated and approved sponsor. The student must additionally complete a departmental exit survey that compiles information regarding the student's perception of the program and his or her success in securing employment or admission to graduate programs. The vita and survey documents are used to assess program objectives 5 and 6.

The assessment procedures and stipulations for the *2005-2006 General Catalog* will be posted at:
http://www.coe.usu.edu/psyc/assessmnt_main.html

The courses in Psychology and the electives available in related departments allow students to tailor their education to meet specific career goals. Some students who major in psychology may qualify for admission to unique specialty tracks: (1) **the (secondary education) Teaching Major**; (2) **Behavior Analysis Skill Track**; (3) **Interpersonal Relationships Skill Track**; and (4) **Graduate School Preparation Track**. A human services/caseworker training option may also be available to majors.

Students can complete the major or minor in psychology either on-campus (Logan), or through the USU Distance Education system (all required courses and selected electives are offered every 1-2 years) available throughout the State of Utah. The specific requirements for the skill tracks, the Apprenticeship, the on- and off-campus (distance education) options, and for how psychology electives can be used to advance students' career goals can be obtained from the **Psychology Advisement Office, Eccles-Jones Education Building, Room 475, (435) 797-1456.**

Requirements

Departmental Admission Requirements

Students are admitted to the Department of Psychology as Prepsychology majors by meeting the Utah State University admission requirements (see pages 16-19). To be a Psychology major, a student must make written application to the department, after meeting the following prerequisites: (1) completion of at least 40 semester credits with a cumulative GPA of 2.75 or higher; (2) completion of at least 18 credits of the University Studies requirement with a GPA of 2.75 or higher; and (3) completion of PSY 1010, 1100, 1400, 1410, and 2800 with a GPA of 3.0 or higher. Application to the department should be made during the semester in which these prerequisites will be completed.

A student who wishes to be officially recognized as a psychology major or psychology teaching major must submit a formal application to the Department of Psychology Undergraduate Advising Office at Utah State University. The formal application will be reviewed and approved by the USU Psychology Department advisorial staff

only. This contingency applies to all students, including those in the on-campus programs and in any of the USU Distance Education, Continuing Education, or Extension programs. Applications that have been reviewed by a USU Psychology Department advisor and meet all requirements will be processed in a timely fashion.

Students who wish to fulfill the major requirements via any of the USU Distance Education, Continuing Education, or Extension programs or sites must contact the Psychology Department Advising Office on the Logan campus to be informed of the contingencies regarding timely progression through the program. Students need to carefully review their program of study with the Psychology Department Advising Office. Students should be aware that their program of study will be delayed when either (1) they fail to contact advisors at the Logan campus or (2) Continuing Education deviates from the published schedule of courses.

General Undergraduate Psychology Major:

Required Courses (22 credits), plus
Primary Electives (16 credits),
Secondary Electives (3 credits), and
Apprenticeship (6 credits)

Requirements for a psychology major consist of a broad preparation of 22 credits of specified coursework, plus a minimum of 19 credits of approved Psychology elective courses, and 6 credits of an apprenticeship, which allows for integration of coursework knowledge (theory) through application, for a total of 47 credits. At least 20 Psychology credits must be upper-division, 12 of which must be taken at USU.

A. Required Courses (22 credits)

PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
PSY 1100 Developmental Psychology: Infancy and Childhood (F,Sp) .. 3
PSY 1400 Analysis of Behavior: Basic Principles (F,Sp,Su) 3
PSY 1410 Analysis of Behavior: Basic Principles Lab (F,Sp,Su) 1
PSY 2800 (QI) Psychological Statistics (F,Sp) 3
PSY 3500 Scientific Thinking and Methods in Psychology (F,Sp) 3
PSY 5100 History and Systems of Psychology (Sp) 3
PSY 5330 Psychometrics (F) 3

B. Primary Elective Courses (16 credits)

Select 3 credits from the following:
PSY 3510 Social Psychology (F,Su) 3
PSY 4210 Personality Theory (Sp) 3

Select 3 credits from the following:
PSY 3450 Perception and Psychophysics (F) 3
PSY 3460 Physiological Psychology (Sp) 3

Select 4 credits from the following:
PSY 3400 Analysis of Behavior: Advanced (F,Sp) 4
PSY 4420 Cognitive Psychology (Sp) (3 cr) **and**
PSY 4430 Cognitive Psychology Laboratory (Sp) (1 cr) 4

Select 6 credits from the following:
PSY 3110 Health Psychology (Sp) 3
PSY 3120 Abuse, Neglect, and the Psychological Dimensions of Intimate Violence (F,Su) 3
PSY 3210 Abnormal Psychology (F,Sp) 3
PSY 5200 (CI) Introduction to Interviewing and Counseling (F) 3
Behavior Pharmacology course (under development) 3

C. Secondary Elective Courses (3 credits minimum)

Select at least 3 credits from the following. (A course from the Primary Electives list may count as fulfilling the Secondary Elective requirement *if and only* if it has not been counted as a Primary Elective requirement.)

PSY 1210 Psychology of Human Adjustment (F,Sp) 3
PSY 2100 Developmental Psychology: Adolescence (Sp) 3
PSY 3660 Educational Psychology for Teachers (F,Sp) 2
PSY 3720 Behavior Modification (Sp) 3
PSY 4230 Psychology of Gender (Sp) 3
PSY 4240 Multicultural Psychology (F) 3
PSY 4510 (CI) Effective Social Skills Interventions (Sp) 3
PSY/PEP 4000 Mental Aspects of Sports Performance (F,Sp,Su) (3 cr) **or**
PSY/PEP 5050 Psychological Aspects of Sports Performance (Sp) (3 cr) 3
PSY/COMD 4790 Psychological Principles and Individuals who are Deaf and Hard of Hearing (Sp) 3
PSY/SPED 5720 Behavior Analysis Practicum (F) 3
SPED 1010 (BSS) Disability in the American Experience 3

D. Required Apprenticeship Courses (6 credits)

PSY 5950 (CI) Undergraduate Apprenticeship I (F,Sp) 3
PSY 5960 (CI) Undergraduate Apprenticeship II (F,Sp) 3

A minor in another area is required. A minimum overall USU GPA of 2.75 is required for graduation, with a minimum GPA of 3.0 in Psychology. Students must receive a grade of *C-* or better in all psychology courses (USU and transfer) in order to have them counted toward major requirements. (Students desiring licensure for teaching in secondary schools must also meet the requirements of the Secondary Education Department.)

Students must meet the above minimum requirements in order to graduate with a major in psychology. These requirements include completing all of the required assessments and providing the supporting documentation (see *Assessment of Learning Objectives* on pages 403-404).

Meeting these minimum requirements alone is *insufficient* to prepare for competitive employment opportunities or to secure admission to graduate school. Students who are planning to secure optimal employment or graduate admissions need to first affiliate with a faculty mentor, as well as become involved in research or applied experiences with the faculty member, *as soon* as they know they will pursue a major in psychology. These students should enroll in one of PSY 5900, 5910, or 5930 *as soon as* they have identified a mentor and have met Utah State University's admission requirements for the Department of Psychology Pre-psychology Major designation. They should pursue PSY 5950 *early* in their undergraduate career and *no later* than the semester following admission to the psychology major. They should pursue their own creative research opportunity experience with the faculty member and enroll in PSY 4910 during the second semester of their junior year and absolutely *no later* than the first semester of their senior year. They should plan to enroll in an additional section of PSY 5900, 5910, or 5930 during their senior year.

Undergraduate Psychology Minor:

Required Courses (10 credits), plus
Elective Courses (8 credits minimum)

A. Required Courses (10 credits)

PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
PSY 1100 Developmental Psychology: Infancy and Childhood (F,Sp) .. 3
PSY 1400 Analysis of Behavior: Basic Principles (F,Sp,Su) 3
PSY 1410 Analysis of Behavior: Basic Principles Lab (F,Sp,Su) 1

B. Electives (8 credits)
Choose course(s) from required or primary elective courses listed for the Psychology Major to total 18 credits.

The student's grade point average for all psychology courses, USU or transfer, must average 3.0 or above to qualify for credit toward the minor. At least 12 credits of the 18 required credits must be completed at USU. Students must receive a grade of *C-* or higher in all psychology courses (USU and transfer) in order to have them counted toward minor requirements.

Psychology Teaching Major:

Required Psychology Courses (27 credits), plus
Elective Psychology Courses (16 credits)

Requirements for a Teaching Major in Psychology broadly consist of 27 credits of specified psychology coursework and 16 credits of elective psychology coursework, for a total of 43 credits in psychology. Only 16 of these 43 psychology credits may be taken in lower-division courses. The remaining 27 credits must be received in 3000- or 4000-level psychology courses. At least 12 of the upper-division credits must have been earned in courses completed at USU. A minor in another field of study is also required. Prospective teachers must complete 35 credits of the Secondary Teacher Education Program (STEP) in the Department of Secondary Education. Required GPA for psychology courses is 3.0. Students must receive a grade of *C-* or better in all psychology courses (USU and transfer) in order to have them counted toward major requirements.

A. Required Courses (27 credits)
PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
PSY 1100 Developmental Psychology: Infancy and Childhood (F,Sp).. 3
PSY 1400 Analysis of Behavior: Basic Principles (F,Sp,Su)..... 3
PSY 1410 Analysis of Behavior: Basic Principles Lab (F,Sp,Su)..... 1
PSY 2100 Developmental Psychology: Adolescence (Sp)..... 3
PSY 2800 (QI) Psychological Statistics (F,Sp) 3
PSY 3500 Scientific Thinking and Methods in Psychology (F,Sp)..... 3
PSY 3660 Educational Psychology for Teachers (F,Sp)..... 2
PSY 5100 History and Systems of Psychology (Sp) 3
PSY 5330 Psychometrics (F) 3

B. Elective Courses (16 credits)
Select 3 credits from the following:
PSY 3510 Social Psychology (F,Su)..... 3
PSY 4210 Personality Theory (Sp)..... 3

Select 3 credits from the following:
PSY 3450 Perception and Psychophysics (F)..... 3
PSY 3460 Physiological Psychology (Sp) 3

Select 4 credits from the following:
PSY 3400 Analysis of Behavior: Advanced (F,Sp)..... 4
PSY 4420 Cognitive Psychology (Sp) (3 cr) **and**
PSY 4430 Cognitive Psychology Laboratory (Sp) (1 cr)..... 4

Select 6 credits from the following:
PSY 3110 Health Psychology (Sp)..... 3
PSY 3120 Abuse, Neglect, and the Psychological Dimensions of Intimate Violence (F,Su) 3
PSY 3210 Abnormal Psychology (F,Sp) 3
PSY 5200 (CI) Introduction to Interviewing and Counseling (F)..... 3
Behavior Pharmacology course (under development) 3

C. Secondary Teacher Education Program (STEP) (35 credits)
Admission to Secondary Education must be completed approximately one semester before the following courses may be taken.

Level 1 (15-week courses) (11 credits)
Students at Level 1 must complete the following courses:
INST 3500 Technology Tools for Secondary Teachers (F,Sp,Su)..... 1
SCED 3100 Motivation and Classroom Management (F,Sp) 3
SCED 3210 (CI) Educational and Multicultural Foundations (F,Sp) 3
Special Methods Course (major or minor)[1] 3
Clinical Experience I Course (major or minor)[1] 1

Level 2 (15-week courses) (12 credits)
Students at Level 2 must complete the following courses:
SPED 4000 Education of Exceptional Individuals (may be taken anytime) (F,Sp,Su)..... 2
SCED 4200 (CI) Reading, Writing, and Technology (F,Sp) 3
SCED 4210 Cognition and Evaluation of Student Learning (F,Sp) 3
Special Methods Course (major or minor)[1] 3
Clinical Experience II Course (major or minor)[1] 1

Level 3
(includes 13 weeks of student teaching and 2 weeks of Student Teaching Seminar) (12 credits)

SCED 5500 Student Teaching Seminar (2 weeks) (F,Sp) 2
SCED 5630 Student Teaching in Secondary Schools (13 weeks, full-time) (F,Sp)..... 10

[1]Students must complete a methods course and a clinical experience course for each of their teaching subjects. Students should check with the department offering their other teaching subject for methods and clinical experience course numbers in that subject. Students electing Psychology at Level 1 should register for SCED 3500 (methods course) and SCED 3300 (clinical course). Students electing Psychology at Level 2 should register for SCED 3500 (methods course) and SCED 4300 (clinical course).

Undergraduate Psychology Teaching Minor:

Required Psychology Courses (15 credits), plus
Elective Psychology Courses (3 credits)

At least 12 credits of the 18 required credits must be completed at USU. In addition, they must select at least one 3-credit class from the list of courses required for or serving as primary electives for the psychology major. Required GPA for psychology courses is 3.0. Students must receive a grade of *C-* or better in all psychology courses (USU and transfer) in order to have them counted toward minor requirements. Finally, they need to fulfill the 35-credit requirement for the Secondary Teacher Education Program (STEP) in the Department of Secondary Education.

A. Required Courses (15 credits)
PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
PSY 1100 Developmental Psychology: Infancy and Childhood (F,Sp).. 3
PSY 1400 Analysis of Behavior: Basic Principles (F,Sp,Su)..... 3
PSY 1410 Analysis of Behavior: Basic Principles Lab (F,Sp,Su)..... 1
PSY 2100 Developmental Psychology: Adolescence (Sp)..... 3
PSY 3660 Educational Psychology for Teachers (F,Sp)..... 2

B. Electives (3 credits minimum)
Choose course(s) from required or primary elective courses listed for the Psychology Major to total 18 credits.

Note: The Psychology Teaching Minor also requires the completion of the Secondary Teacher Education Program (STEP) (35 credits). See section *C* under Psychology Teaching Major.

Skill Tracks for Undergraduate Majors in Psychology

The following skill tracks can be completed as part of a student's major in Psychology. A skill track represents a cluster of courses that help provide more comprehensive knowledge and practical skill in particular areas. After admission as a major in Psychology, students may apply for admission to a skill track. Completing a skill track requires careful planning, so that skill track courses and all other required and elective courses for the major are fulfilled. Enrollment in a skill track is entirely optional for majors.

Behavior Analysis Skill Track

The following cluster of courses will provide psychology majors with a basic foundation in experimental and applied behavior analysis: PSY 1400, 1410, 3400, 4910, 5720; SPED 5010, 5050; BIOL 3010; and PHIL 4320 or 4900.

Interpersonal Relationships Skill Track

The following cluster of courses will assist psychology majors in systematically developing a broad range of interpersonal relationship skills, such as listening, assertiveness, negotiation, conflict resolution, anger management, etc.: PSY 1210, 3210, 3510, 4210, 4510, 5200; MHR 3710.

Graduate School Preparation Track

The major in Psychology has been designed so that students take classes that will help them compete in applying for graduate school. Students completing the graduate school track need to become actively involved with faculty research, form an association with Psi Chi, and enroll in independent research and readings courses. Students should also take a course covering use of statistical software (e.g., SPSS), offered through FCHD or Sociology. Furthermore, it is recommended that students take at least one upper-division course in statistics from Psychology, FCHD, or Sociology.

Students who pursue the skills tracks in Psychology are encouraged to become involved with the faculty in independent research or applied experiences. Involvement in these experiences is associated with greater chances of successful graduate school admission and/or competitive post-baccalaureate employment, especially for students who pursue this involvement early in their undergraduate careers.

The faculty who teach courses satisfying the skills track requirements are committed to working closely with students to hone their experiences and accomplishments in research methodology and applied fields of psychology.

These faculty have a solid track record in mentoring students. Their students have achieved remarkable success in procuring funding to support student-initiated research projects via Utah State University's competitive University Research Cooperative Opportunity (URCO) mechanism and the national honor society of psychology (Psi Chi).

Their students have been first authors or co-authors on numerous scholarly presentations at regional, national, and international conferences in psychology (e.g., *Association of Behavior Analysis, American Psychological Association, European Conference of Developmental Psychology, International Society for the Study of Behavioral Development, Society for Personality and Social Psychology, Society for Research in Adolescence,* and *Society for Research in Human Development*). Their students have competed successfully each year for awards that recognize their achievements. Together with the faculty, the students have published in premier research journals in psychology (e.g., *Developmental Psychology, Journal of Applied Psychology, Journal of Clinical Psychology, Journal of Experimental Psychology,* and *Sex Roles*) and books in psychology.

The Department of Psychology and Utah State University actively supports students' efforts by awarding matching funding to support the attendance of conferences at which they can present their accepted conference presentations.

Psychology Courses Fulfilling University Studies Requirements

The following Psychology courses may be used to fulfill University Studies requirements, in the areas indicated:

Breadth Social Sciences (BSS): PSY 1010.

Depth Social Sciences (DSS): PSY 3120, 3210, 3400, 3500, 3510, 4210, 4230, 4240, 4420.

Communications Intensive (CI): PSY 4510, 5200, 5950, 5960.

Quantitative Intensive (QI): PSY 2800.

Although these courses may be applied toward fulfilling the University Studies breadth, depth, communications intensive, and quantitative intensive requirements, students must be prepared to complete additional writing or library assignments, as required for University Studies.

Important Contingencies for Psychology Courses

Prerequisites for Psychology courses are *strictly enforced*. The prerequisites are indicated, at the end of course descriptions, within the Psychology course listings (see pages 586-590).

A student must be admitted as a psychology major or must complete *at least* 45 semester credits with a GPA of 3.0 or higher prior to taking psychology courses numbered 3000 or above. However, students who have been admitted to the Teacher Education program may take PSY 3660, provided they have met the prerequisites. A student must be admitted as a psychology major or must complete *at least* 60 semester credits with a GPA of 3.0 or higher prior to taking psychology courses numbered 4000 or above.

Students desiring to receive credit for courses taken previously at other institutions will need to assure the Undergraduate Advising Office that the substitute class contained the requisite laboratory experience (where applicable).

Students who can complete a baccalaureate degree within seven years of enrollment at USU can qualify for graduation by meeting (1) the General Education/University Studies requirements in effect when they initially enrolled and (2) the major requirements in effect when they officially declared their major, even though there may have been changes in General Education/University Studies and major requirements since that time. Students who have not completed the baccalaureate requirements within seven years of their initial enrollment at USU must have their General Education/University Studies and major requirements evaluated and approved by their department head and dean. However, exceptions to this seven-year policy may be necessary for mandated changes in degree requirements.

Department of Psychology

Undergraduate psychology coursework (USU or transfer) that is *more than eight years old* may *not* be used toward meeting the specific psychology coursework requirements for a psychology major or psychology minor. However, the Psychology Department Undergraduate Committee may allow revalidation through testing. Testing arrangements may be made by contacting Karen Ranson at karen.ranson@usu.edu.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school.

In the Psychology Department, students may complete an *Honors in University Studies with Department Honors* or a *Department Honors* only program. The requirements for departmental honors are as follows:

Honors Coursework

Honors students must complete 12 credits in courses designated as Honors courses. These courses are selected by students, and are approved by the Department Honors Coordinator and individual faculty members. Any upper-division (3000-level or higher) course may be taken as Honors. Additional courses which will meet the criteria for an Honors designation are determined, in conjuction with the student, by the faculty members teaching the courses.

GPA Requirements

To qualify for departmental honors, students must maintain a cumulative GPA of 3.3 and a GPA of 3.5 within upper-division major requirements and Honors coursework.

Senior Thesis

In order to obtain departmental honors, students are required to design, conduct, and present a senior thesis/project under the supervision of a faculty mentor. The senior thesis/project can be built from the research component of PSY 5950 and 5960.

Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Additional Information

For detailed information about course requirements for majors and minors within the Psychology Department, see the major requirement sheet, which is available from the department, or which can be accessed online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Admission Requirements

Admissions requirements vary somewhat across Psychology graduate programs. However, applications submitted to the School of Graduate Studies must include the following: (1) transcript showing completion of undergraduate course prerequisites, plus any recommended coursework; (2) report of (GRE) test scores from ETS; (3) GPA of at least 3.2, covering the last 60 semester credits; (4) three letters of recommendation; and (5) a statement of professional goals and intent. The department requires a minimum GRE combined (Verbal and Quantitative) score of at least 1,100 for all programs.

The deadline for submitting applications for the Combined Clinical/Counseling/School Psychology PhD program is **January 15**. Applications for the Research and Evaluation Methodology PhD program are reviewed throughout the year. The application deadline for the MS School Psychology program is **March 1**. Applications for the MS program in School Counseling must be submitted by **June 1** during odd-numbered alternate years (e.g., 2003, 2005, etc.). With the exception of the PhD program in Combined Clinical/Counseling/School, applications for programs may be accepted after these dates if openings still exist.

Students are admitted to Psychology master's degree programs, including School Psychology and School Counseling, following completion of a bachelor's degree. Prospective PhD program students can compete for admission to the Combined Clinical/Counseling/School program or the Research and Evaluation Methodology program if they possess either a bachelor's or a master's degree.

Prerequisites for Admission to Graduate Programs

Applicants to the Master of Science (MS) and Doctor of Philosophy (PhD) program are advised that they should possess a broad base of knowledge at the undergraduate level in a *substantive subgroup* of the following: general psychology, human development, learning theory, cognition, personality theory research, psychometrics, elementary statistics, history and systems, physiological, sensation and perception, and social psychology. The absolute prerequisites for each graduate program are outlined below, along with a listing of graduate program course requirements for each program.

Psychology MS Programs

School Psychology, NASP-accredited

USU's nationally accredited program in school psychology emphasizes child development issues, assessment and treatment of emotional and behavioral disorders, and traditional psychoeducational assessment and consultation activities appropriate to school settings. The program is approved by the Utah State Office of Education for licensure of school psychologists. Students are required to complete either a research thesis (Graduate School Plan A option), or a major literature review/synthesis paper (Plan B).

Absolute undergraduate course prerequisites for admission to the MS in School Psychology are as follows: (1) *Elementary Statistics*; (2) *Theories/Research in Learning or Applied Behavior Analysis*; (3) *Abnormal Psychology*; and (4) *Theories/Research in Personality*. The MS in School Psychology requires a **minimum of 60 semester credits**.

The following courses are required:

PSY 6150 Empirically Supported Treatments for Psychological Disorders of Children and Adolescents (Sp) 3
PSY 6220 Group Counseling (F) 3
PSY 6270 Child Psychopathology (F) 3
PSY 6290 Diversity Issues in Treatment and Assessment (Sp) 3

PSY 6310 Intellectual Assessment (F) 3
PSY 6330 Psychometrics (F) (3 cr) **or**
PSY 6600 Measurement, Design, and Analysis I (F,Sp,Su) (3 cr)..... 3
PSY 6340 Psychological and Educational Consultation (F)..... 3
PSY 6350 Introduction to Theory and Practicum in Counseling (F)..... 3
PSY 6360 Practicum in Counseling and Psychotherapy (Sp,Su)..... 3
PSY 6380 Practicum in School Psychology (F,Sp,Su) 3
PSY 6410 Psychoeducational Assessment (Sp)..... 3
PSY 6450 Introduction to School Psychology (F)..... 1
PSY 6460 Professional Issues in School Counseling and School Psychology (Sp) 3
PSY 6530 Developmental Psychology (F) 3
PSY 6570 Introduction to Educational and Psychological Research (F,Sp,Su) 3
PSY 6660 Cognition and Instruction (Sp)..... 3
PSY 6880 Transcultural Assessment Lab (Sp)..... 1
PSY 6890 Assessment of Child and Adolescent Psychopathology and Personality (Su)..... 3
PSY 6950 Internship in School Psychology (F,Sp,Su) 3
PSY 6970 Thesis (F,Sp,Su)..... 2-6

School Counselor Education (NCATE-accredited)

Completion of this program qualifies graduates for professional licensure in School Guidance Counseling. Coursework is formulated to train students in a broad range of skills, including individual and group counseling for diverse populations; behavior and educational assessment and intervention; research and methodological foundations; and ethical, legal, and professional standards. Experiential learning in the form of practicum and internship placements is a critical component of the program. The program is approved by the Utah State Office of Education and most other states. It is offered on campus and via a live, satellite distance education system (EDNET) to sites within Utah's boundaries.

Absolute undergraduate course prerequisites for admission to the MS in School Counseling are as follows: (1) *Theories of Personality*, (2) *Abnormal Psychology*, and (3) *Psychological Statistics* (or equivalent).

The MS in School Counseling requires a minimum of 48 semester credits. The following courses are required:

PSY 6010 Introduction to Program Evaluation: Evaluation Models and Practical Guidelines (F,Su) 3
PSY 6150 Empirically Supported Treatments for Psychological Disorders of Children and Adolescents (Sp) 3
PSY 6220 Group Counseling (F)..... 3
PSY 6240 Introduction to School Counseling and Guidance (F)..... 3
PSY 6250 Internship in School Counseling and Guidance (F,Sp,Su) . 10
PSY 6260 Career Development: Theory and Practice (Sp) 3
PSY 6290 Diversity Issues in Treatment and Assessment (Sp)..... 3
PSY 6330 Psychometrics (F) 3
PSY 6340 Psychological and Educational Consultation (F)..... 3
PSY 6350 Introduction to Theory and Practicum in Counseling (F)..... 3
PSY 6370 Practicum in School Counseling (F,Sp,Su)..... 3
PSY 6460 Professional Issues in School Counseling and School Psychology (Sp) 3
PSY 6530 Developmental Psychology (F) 3
PSY 6810 Seminar (Grant Writing) (Su)..... 2

PhD Programs

Combined and Integrated (C-I) Clinical/ Counseling/School Psychology, (APA-accredited)

This program integrates the theory and practice of psychology common to the disciplines traditionally denoted as clinical, counseling, and school psychology. It subscribes to the scientist-practitioner model, and students completing the program will commonly enter professional practice in VA hospitals, mental health centers, hospitals, clinics, and academic settings. The program provides an excellent balance of research and practitioner skill training. Entering BS students can opt to earn an MS degree in either counseling psychology or school psychology prior to the PhD. A research thesis and dissertation are required of all students. The combined program provides generalized training, along with three areas of specialization. The emphasis areas are designed for students to begin systematically developing a specialty area in line with their future career goals. The three areas of specialization, which mirror faculty interest and expertise, are health psychology/neuropsychology, child clinical (with or without a school psychology emphasis), and rural and minority psychology. The program is also affiliated with the American Indian Support Project, one of the nation's most successful programs for training and mentoring American Indian PhD psychologists.

Complete information on accreditation guidelines and principles is available through the Committee on Accreditation (CoA) at Education Directorate, American Psychological Association, 750 First Street NE, Washington DC 20002-4242, (202) 336-5979, or on the web at: **http://www.apa.org/ed/accreditation/**

Absolute undergraduate prerequisites for admission to the PhD program in Combined Clinical/Counseling/School are as follows: (1) *Elementary Statistics*; (2) *Theories/Research in Learning*; (3) *Abnormal Psychology*; and (4) *Theories/Research in Personality*.

The Combined Clinical/Counseling/School Psychology PhD requires **107 total semester credits**, including the following:

A. MS Counseling Psychology Degree Curriculum

PSY 6290 Diversity Issues in Treatment and Assessment (Sp)..... 3
PSY 6310 Intellectual Assessment (F) 3
PSY 6320 Objective Assessment of Personality and Affect (Sp) 3
PSY 6350 Introduction to Theory and Practicum in Counseling (F)..... 3
PSY 6360 Practicum in Counseling and Psychotherapy (Sp,Su)..... 3
PSY 6570 Introduction to Educational and Psychological Research (F,Sp,Su) 3
PSY 6600 Measurement, Design, and Analysis I (F,Sp,Su)..... 3
PSY 6880 Transcultural Assessment Lab (Sp)..... 1
PSY 6970 Thesis (F,Sp,Su)..... 1-6

B. PhD Program Courses

PSY 6220 Group Counseling (F)..... 3
PSY 6510 Social Psychology (Sp) 3
PSY 6530 Developmental Psychology (F) 3
PSY 6650 Theories of Learning: The Behavioral Perspective (F) (3 cr) **or**
PSY 6660 Cognition and Instruction (Sp) (3 cr) 3
PSY 7100 Biological Basis of Behavior (Sp) 3
PSY 7250 Professional Ethics and Standards (F)..... 1-3
PSY 7270 Psychopathology (F) 3
PSY 7350 Practicum in School Psychology (F,Sp,Su) 3
PSY 7360 Practicum in Counseling Psychology (F,Sp,Su) 3
PSY 7370 Practicum in Clinical Psychology (F,Sp,Su)..... 3

PSY 7610 Measurement, Design, and Analysis II (Sp,Su).....3
PSY 7670 Literature Reviews in Education and Psychology 1
PSY 7910 Independent Research (F,Sp,Su).....1-3
PSY 7950 Internship in Professional Psychology (F,Sp,Su).....1
PSY 7970 Dissertation (F,Sp,Su) 1-18
Electives 6

Note: The MS counseling psychology degree is available *only* to students matriculated into the PhD Clinical/Counseling/School program.

Research and Evaluation Methodology (REM)

The department offers a PhD program in research and evaluation methodology. The program is designed to produce specialists capable of contributing to the knowledge base in psychology and education utilizing experimental and evaluation methods. While satisfying the department's general requirements, students may design their programs to become specialists in a variety of areas, such as program evaluation, experimental health psychology, analysis of behavior, statistics, or similar areas. A research thesis and/or dissertation are required of all students.

Absolute undergraduate prerequisites for admission to the PhD program in Research and Evaluation Methodology are as follows: (1) *Elementary Statistics*, (2) *Psychometrics*, and (3) *History and Systems of Psychology*.

The Research and Evaluation Methodology PhD requires a **minimum of 63 total credits** past the MS degree (total of 40 credits):

A. MS Degree Curriculum

PSY 6010 Introduction to Program Evaluation: Evaluation Models and Practical Guidelines (F,Su) 3
PSY 6570 Introduction to Educational and Psychological Research (F,Sp,Su) 3
PSY 6600 Measurement, Design, and Analysis I (F,Sp,Su).....3

Content Requirements (12 credits):
PSY 6910 Independent Research (F,Sp,Su).....1-3
PSY 7250 Professional Ethics and Standards (F).....1-3
PSY 6970 Thesis (F,Sp,Su).....8

B. PhD Degree Curriculum

PSY 7090 Research and Evaluation Methodology Program Seminar (F,Sp).....1
PSY 7670 Literature Reviews in Education and Psychology 1
PSY 7700 Grant Writing (Sp) 3
PSY 7780 Multivariate Methods in Psychology and Education (F) 3

Specialty Area Electives (21 credits):
PSY 6930 University Teaching Apprenticeship (F,Sp,Su).....1-3
PSY 7050 Internship in Program Evaluation (F,Sp,Su) 1-9
PSY 7060 Internship in Research (F,Sp,Su) 1-9
PSY 7810 Seminar (F,Sp,Su).....1-3
PSY 7900 Independent Study (F,Sp,Su) 1-3
PSY 7910 Independent Research (F,Sp,Su).....5
PSY 7970 Dissertation (F,Sp,Su) 12

Additional Requirements for Psychology PhD Programs

All PhD candidates must meet the following general core requirements, regardless of specialty emphasis: (1) submission of an article for publication in a recognized journal; (2) presentation of research findings at a regional or national convention or professional meeting; (3) completion of the doctoral dissertation; (4) a comprehensive literature review; (5) completion of the research core; and (6) completion of an apprenticeship or internship. Students in the combined PhD program must also complete a formal case presentation, and compete nationally for admission to an APA-approved, 2,000-hour predoctoral internship. The Research and Evaluation Methodology program has an additional requirement of a grant proposal.

Research Opportunities for Students

Departmental faculty are heavily involved in basic and/or full-time applied research. A sampling of the diverse research interests of tenured and tenure-track faculty available to students includes: *Ascione*—prosocial, moral development, domestic violence, relation between cruelty to animals and psychopathology; *Bates*—adolescent problem behavior prevention, community-level prevention, higher education teaching and learning; *Cheney*—behavioral pharmacology, basic operant learning; *Crowley*—anxiety, depression, supervision and training; *DeBerard*—health psychology, behavioral medicine, spinal surgery outcome and technique efficacy; *Domenech Rodríguez*—Latino family dynamics, parent training programs; *Fargo*—statistical methods, quantitative neuropsychology, seizure disorders, classification statistics; *Ferguson*—social skills, guilt/shame development, social cognition; *Field*—adolescent behavior disorders, rural mental health issues, school psychology; *Franco*—student services, minority health issues, multicultural psychology; *Galliher*—social and dating relationship processes and dymanics in adolescence and rural mental health service delivery; *Gilbertson*—early intervention and prevention of behavior problems, school psychology; *Gimpel Peacock*—ADHD, behavioral disorders of children; *Julnes*—evaluation theory, human service delivery, family; *Lehman*—Web/Internet learning variables and efficacy, educational psychology; *Odum*—experimental analysis of behavior, behavior pharmacology; *Roberts*—early intervention with families of young children, community-based systems of services; *Schroder*—sexual risk behavior, models of health behavior, stress and coping; *Shahan*— experimental analysis of behavior, drug self-administration, behavior momentum, conditioned reinforcement, behavior economics; *Sinex*—processing of central auditory system, neuropsychology of sound discrimination; *Stein*—addictive behaviors and models, drug and alcohol prevention/treatment; *J. Tschanz*—neuropsychology of Alzheimer's disease and other dimentias; *White*—educational research, hearing loss detection in infancy, and program evaluation.

Graduate Student Financial Assistance

Financial support for students enrolled in terminal MS programs is limited. MS students should meet with their academic advisor for information about possible assistantship opportunities.

PhD students are guaranteed an assistantship for at least their first year. However, for at least the last 15 years, 100 percent of PhD students have continued to enjoy assistantship support beyond their first year, if they desired it. The department has available a number of teaching assistantships. Though these are generally awarded to students matriculated in psychology PhD programs, they are occasionally given to exceptional MS students. Also, faculty in the department and college regularly offer research assistantships to graduate students, as does the Counseling Center and a variety of on- and off-campus facilities (e.g., Center for Persons with Disabilities, Bear River Mental Health Center, Head Start, and Early Head Start). Additionally, first-year psychology PhD students typically compete extremely well for several University Fellowships, which were

established to attract top student scholars to USU. Furthermore, the department has some scholarship support specifically available to psychology graduate students (e.g., Walter Borg and Elwin Nielsen scholarships). Finally, in accordance with current School of Graduate Studies policy, PhD students may qualify for full tuition remission for up to 70 credits within their program.

Psychology Faculty

Professors
Frank R. Ascione, developmental
Carl D. Cheney, physiological
Susan L. Crowley, counseling
Tamara J. Ferguson, social and developmental psychology
Juan N. Franco, Vice President for Student Services, counseling and educational psychology
Richard N. Roberts, developmental
Charles L. Salzberg, applied behavior analysis
Donal G. Sinex, processing of central auditory systems, relation between neurophysiological processing and discrimination of sounds
David M. Stein, clinical psychology
Karl R. White, research and evaluation

Research Professors
Byron R. Burnham, qualitative evaluation methods
Russell Snyder, cochlear implants

Professors Emeriti
Marvin G. Fifield, school and counseling
J. Grayson Osborne, behavior therapy, child

Associate Professors
George Julnes, evaluation methodology, research methodology
Gretchen Gimpel Peacock, school

Research Associate Professor
Mark S. Innocenti, school psychology

Assistant Professors
Scott C. Bates, social and community psychology
M. Scott DeBerard, health psychology
Jamison Fargo, neuropsychology, neuroepidemiology, taxometrics of seizure disorders
Clint Field, school psychology
Renee V. Galliher, clinical psychology
Donna M. Gilbertson, school psychology
Steve Lehman, educational psychology
Maria C. Norton, research and evaluation methodology
Amy I. Odum, behavior analysis
Melanie M. Domenech Rodríguez, counseling, child clinical
Timothy Shahan, behavior analysis
Kerstin E. E. Schroder, health psychology
JoAnn T. Tschanz, neuropsychology, abnormal psychology, physiological psychology

Research Assistant Professor
Susan G. Friedman, research

Adjunct and Clinical Faculty
Ann M. Berghout Austin, infancy through childhood
Carolyn G. Barcus, counseling
David W. Bush, clinical/counseling
Robert S. Cook, rural and family interventions
Gwenaelle C. Couillard, training
Mary E. Doty, clinical
Monique Frazier, child clinical
Eric J. Gee, research and evaluation
Richard D. Gordin, Jr., sport and exercise psychology
Randall M. Jones, family research management
Joan A. Kleinke, counseling and personnel services
J. Russell Mason, sensory evaluation, ethology
Kent E. Nabers, gero-psychology
Mark A. Nafziger, counseling psychology
D. Kim Openshaw, marriage and family therapy
Lori A. Roggman, developmental
Thomas R. Schenkenberg, neuropsychology
Patricia L. Truhn, neuropsychology, crisis intervention
Brian Tschanz, social psychology
Beth Walden, research and evaluation methodology
Leland J. Winger, Jr., clinical
Jean Wollam, educational psychology
Blaine R. Worthen, research and evaluation

Course Descriptions

Psychology (PSY), page 586-590

Department of Secondary Education

Interim Department Head: Gary L. Carlston
Location: Emma Eccles Jones Education 330
Phone: (435) 797-2222
FAX: (435) 797-1441
E-mail: seced@usu.edu
WWW: http://www.coe.usu.edu/seced/

Undergraduate Advisor:
Harold E. Heap, Education 330B, (435) 797-2224,
harold.heap@usu.edu

Degrees Offered: Second Bachelor of Science (BS), Second Bachelor of Arts (BA), Master of Science (MS), Master of Arts (MA), and Master of Education (MEd) in Secondary Education; BS and BA in Composite Teaching—Social Studies. The department participates in the Interdepartmental Doctor of Education (EdD) and Doctor of Philosophy (PhD) programs, focusing on the Curriculum and Instruction specialization.

Graduate Specializations: Educational Leadership, English as a Second Language (MEd only), English Education, Gifted and Talented, Mathematics Education, Middle Level Education, Reading Education, Social Studies Education, Science Education

Undergraduate Programs

Objectives

The Department of Secondary Education coordinates state-approved programs for secondary teacher licensure across campus. The department offers the Secondary Teacher Education Program (STEP), a sequence of courses and field experiences designed to prepare students for teaching careers in secondary schools. The STEP program is fully accredited by the Utah State Board of Education and by the National Council for Accreditation of Teacher Education. Students who successfully complete the program are recommended for secondary licensure in the State of Utah, enabling them to teach in grades 6-12.

Requirements

Departmental Entrance Requirements

In addition to meeting the admission requirements for the University, students in good standing must have a minimum entrance GPA of 2.75 and maintain that GPA in order to student teach. All students must be admitted to the teacher education program. See details below.

Admission to Teacher Education

Prior to enrolling in STEP courses, students must be admitted to the teacher education program. Criteria for admission include completion of a minimum of 60 semester credits, and (1) minimum ACT scores, (2) University Studies requirements, (3) a speech and hearing test, (4) successful completion of the Teacher Education Writing Exam, and (5) recommendations from advisors in major and minor fields. Application forms are available from advisors; from the Office of Teacher Education, Graduation, and Educator Licensing, Room 103, Emma Eccles Jones Education Building; and from the Department of Secondary Education, Room 330, Emma Eccles Jones Education Building.

Students must submit copies of University transcripts, including transfer coursework, verifying a minimum total GPA of 2.75. Criminal Background Check materials, required by the State of Utah, must also be submitted at this time. The fee for the Criminal Background Check is payable to the Utah State Office of Education. A money order must be provided as payment. Questions about the admission requirements may be directed to the Secondary Education advisor.

Bachelor's Degree in Social Studies Composite Teaching

Students who are accepted in good standing by the University and who have a minimum total GPA of 2.75 may be admitted to the Social Studies Composite Teaching Major. In order to graduate with the Social Studies Composite Teaching degree, students must (1) maintain a minimum 2.75 total GPA, (2) earn a grade of *C* or better in all courses in the major, (3) complete the Secondary Teacher Education Program (STEP), and (4) meet all requirements for the Secondary Teacher License (see below).

For the bachelor's degree, students must complete: (1) University Studies requirements, (2) courses required for the Social Studies Composite Teaching Major (see list below), (3) The Secondary Teacher Education Program (STEP), and (4) electives. Students must complete each course in the Social Studies Composite Teaching Major with a minimum grade of *C*. Upon completing all requirements for graduation, students are eligible for a secondary teaching license from the Utah State Office of Education (grades 6-12). Students with the Social Studies Composite Teaching Major graduate from the Department of Secondary Education. Courses in the Social Studies Composite Teaching Major are provided by various departments. Students should check regularly with these departments and the Secondary Education advisor for changes and substitutions.

Students must complete a total of 61 credits selected from various social science courses listed below. The number of credits and course choices are listed after the area in which they must be completed.

A. History (21 credits)
HIST 1030 (BHU) The Modern World (F,Sp,Su) 3
HIST 1040 (BHU) Foundations of Western Civilization: Ancient and Medieval (F,Sp,Su) 3
HIST 1050 (BHU) Foundations of Western Civilization: Modern (F,Sp,Su) 3
HIST 2700 (BAI) United States to 1877 (F,Sp,Su) 3
HIST 2710 (BAI) United States 1877-Present (F,Sp,Su) 3
HIST 3850 (DHA/CI) History of Utah (Sp) 3
Methods of Teaching History (course number varies) 3
Note: The Clinical Experience for this course will be deferred to SCED 3500, taken for Special Methods I during Level 1 of the STEP.

B. Geography (16 credits)
GEOG 1030 (BSS) World Regional Geography (F,Sp) 3
GEOG 1130 (BPS) Physical Geography (F,Sp,Su) 3
GEOG 2030 (BSS) Human Geography (F) 3
GEOG 3850 Map, Air Photo, and GIS Interpretation (F) 4
GEOG 4200 (CI) Regional Geography (Utah) (F,Sp,Su) 3

C. Economics (6 credits)
ECON 1500 (BAI) Introduction to Economic Institutions, History, and Principles (F,Sp) 3
ECON 2010 (BSS) Introduction to Microeconomics (F,Sp) 3

D. Political Science (9 credits)
POLS 1100 (BAI) United States Government and Politics (F,Sp) 3
POLS 2200 (BSS) Comparative Politics (F,Sp) (3 cr) **or**
POLS 3130 (DSS) United States Legislative Politics (Sp) (3 cr) 3
POLS 4120 American Constitutional Law (F) (3 cr) **or**
POLS 4130 Constitutional Theory (Sp) (3 cr) 3

E. Psychology/Sociology/Anthropology (9 credits)
PSY 1010 (BSS) General Psychology (F,Sp,Su) 3
SOC 1010 (BSS) Introductory Sociology (F,Sp) 3
ANTH 1010 (BSS) Cultural Anthropology (F,Sp) 3

Secondary Teaching License (grades 6-12)

To obtain a teaching license, undergraduate students must complete (1) 30 credits of University Studies requirements, including written communications, (2) an approved composite teaching major or approved teaching major and teaching minor (see below), and (3) the Secondary Teacher Education Program (STEP). The Secondary Education advisor will assist returning students who already have an undergraduate degree with program planning for licensure. These students occupy "Second BS" or "Second BA" status while pursuing licensure. They also may apply for a second bachelor's degree in conjunction with teacher licensure. Consult the Admissions Office for details.

All students should note that secondary teacher licensure is not automatic upon completion of the program. In order to receive Utah licensure, students must apply for the Basic Teaching License. Applications are available in the Office of Teacher Education, Graduation, and Educator Licensing, Emma Eccles Jones Education Building, Room 103.

Special Education Dual Licensure

Students can be licensed in both special education and in a secondary subject area through a dual licensure program offered jointly by two departments. Early in their programs, students should consult with undergraduate advisors in Secondary Education and the Department of Special Education and Rehabilitation.

Optional Middle Level Endorsement (grades 6-9)

The Department of Secondary Education has joined with the Department of Elementary Education to offer a Middle Level Endorsement for students seeking initial teacher licensure and for persons who already have an elementary or secondary teaching license. Students pursing this endorsement must take additional coursework that specifically focuses on middle level curriculum and instruction. To be recommended for the Middle Level Endorsement, students must student teach (SCED 5630) in the middle grades. Information about this program is available from the Secondary Education Advisor and the Department of Elementary Education.

ESL Teaching Minor or Endorsement

The USU Elementary Education Department and the Secondary Education Department jointly offer a K-12 English as a Second Language (ESL) endorsement. Undergraduate students seeking initial teacher licensure can obtain an ESL Teaching Minor (24 credits) and the ESL endorsement. Students pursuing the minor must complete the following courses: LING 4100, 4400, 4900; SCED 3300 or 4300; SCED 4710, 4770, 5630.

Composite Majors, Teaching Majors, and Teaching Minors

Secondary Teacher Licensure requires that students complete a composite teaching major *or* a combination of a single-subject teaching major and teaching minor. Students are strongly encouraged to meet as soon as possible with advisors in their declared teaching major and minor. The following composite teaching majors, single-subject teaching majors, and teaching minors are approved for Utah State University.

Composite Teaching Majors (46 credits minimum)

Agricultural Education, Art Education, Biological Science, Business Information Technology and Education, Earth Science, Engineering and Technology Education, Family and Consumer Sciences Education, Marketing Education, Music Education, and Social Studies Education.

Teaching Majors (30 credits minimum)

Chemistry, English, Geography, Health Education, History, Mathematics, Modern Languages, Physical Education (K-12), Physics, Political Science, Psychology, Sociology, and Theatre Arts.

Teaching Minors (16 credits minimum)

Business Computer and Information Systems, Business Information Technology and Education, Chemistry, Economics, English, Geography, Health Education, History, Marketing Education, Mathematics, Modern Languages, Physical Education Coaching, Physics, Political Science, Psychology, Sociology, Speech Communication, and Theatre Arts.

Secondary Teacher Education Program (STEP)

Three-Level Program (35 credits)

Secondary Education coordinates a state-approved program to complement the teaching majors and minors in 21 departments. The framework is organized into three sequential levels, each taken during a different semester. Students should plan to complete the STEP Program during their junior and senior years after most or all of the major and minor coursework has been completed. *All three levels of the STEP are offered during fall and spring semesters, but not during summers. Levels of the STEP are taken as a package, not piecemeal. Each level must be satisfactorily completed before students advance to the next level.* All courses in the STEP Program must be completed with a minimum grade of *C*-.

As outlined below, Level 1 and Level 2 courses are offered by the Department of Secondary Education and other cooperating departments. Teaching Methods courses are offered by many departments across campus. Students should refer to the requirement sheets of their composite teaching major, or their teaching major and minor, to determine which methods courses they are required to complete on Levels 1 and 2 to prepare for student teaching at Level 3. Student teaching in a composite teaching major, or in at least one teaching major and one teaching minor, is required.

A. Level 1 (15-week courses)
INST 3500 Technology Tools for Secondary Teachers (F, Sp, Su) 1
SCED 3100 Motivation and Classroom Management (F, Sp) 3
SCED 3210 (CI/DSS) Educational and Multicultural Foundations (F, Sp) 3
Clinical Experience I[1] (40 hours minimum) 1
Special Methods I[2] (major or minor) 3

B. Level 2 (15-week courses)
SPED 4000 Education of Exceptional Individuals (F, Sp, Su) (may be taken anytime) 2
SCED 4200 (CI) Reading, Writing, and Technology (F, Sp) 3
SCED 4210 Cognition and Evaluation of Student Learning (F, Sp) 3
Clinical Experience II[3] (40 hours minimum) 1
Special Methods II[4] (major or minor) 3

C. Level 3 (includes 13 weeks of student teaching and 2 weeks of Student Teaching Seminar)

Student Teaching Seminar[5] (2 weeks) 2
Student Teaching[6] (13 weeks, full-time) 10

[1]The Clinical Experience I course is taught under course number 3300 in various departments. Course title varies among departments.
[2]The Special Methods I course is taught by various departments under various course numbers. Course title varies among departments.
[3]The Clinical Experience II course is taught under course number 4300 in various departments. Course title varies among departments.
[4]The Special Methods II course is taught by various departments under various course numbers. Course title varies among departments.
[5]The Student Teaching Seminar course is taught under course number 5500 in various departments. Course title varies among departments.
[6]The Student Teaching course is taught under course number 5630 in various departments. Course title varies among departments.

Clinical Experience

Students must enroll for either Clinical Experience I or Clinical Experience II concurrent with their methods courses. Methods instructors, in concert with the Office of Field Experiences, set up and monitor these field activities in middle and high school settings. The clinical experiences provide a classroom context for understanding STEP and methods courses. A clinical experience fee of $50 is assessed at each of the two levels. This fee provides a stipend to classroom teachers who work with clinical experience students in the public schools. Students should refer to the requirement sheet for their composite teaching major or their teaching minor to determine which methods courses they should take.

Background Check and Student Teaching

As a result of legislative mandate, all applicants for student teaching must undergo a criminal background check prior to student teaching placement. The Office of Field Experiences, Emma Eccles Jones Education Building, room 330, will assist students in complying with this mandate. The fee for the background check is payable only by money order to the Utah State Office of Education.

Applications for student teaching must be submitted to the Office of Field Experiences, Emma Eccles Jones Education Building, room 330, one year in advance. The application deadline for student teaching during the following spring semester is February 1. The application deadline for student teaching during the following fall semester is September 15. *Students must have completed 80 percent of their teaching major/minor (or composite major) requirements prior to student teaching.* The Portfolio Interview is part of the application process.

Students should be financially prepared to stay off campus, if necessary, during the 13-week block of student teaching. Because student teaching requires a major commitment of time and energy, it should be planned with care. Students are urged to forego outside employment, if possible, during the student teaching experience.

Assessment

The Department of Secondary Education is committed to principles and practices of continual assessment of its programs and its students. Information about current assessment tools that are being used by the department can be found at:
http://www.coe.usu.edu/seced/assessment/index.html

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at:
http://www.usu.edu/honors/

Additional Information

For detailed information about requirements for teaching majors and minors, students should see the major requirement sheet(s) for the subject area(s) in which they plan to seek licensure or receive a teaching minor. These requirement sheets can be found online at:
http://www.usu.edu/ats/majorsheets/

Graduate Programs

Admission Requirements

The Department of Secondary Education assists in the preparation of graduate students seeking the MEd, MA, and MS degrees, as well as the EdD and PhD degrees. Students desiring information concerning the various graduate programs should contact the department head. The application for admission to a graduate program is made through the School of Graduate Studies. See *Graduate Admission Procedures* (pages 93-94).

Students applying to a master's degree program may take either the Miller Analogy Test (MAT) or the Graduate Record Exam (GRE). Students applying to a doctoral degree program should take the GRE. Scores at the 40th percentile or above are required for admission. In addition, students must have at least one year of teaching experience (or comparable professional experience) and a valid secondary teaching license.

All students applying to the doctoral degree program (Curriculum and Instruction specialization) participate in oral interviews with the Curriculum and Instruction Management Committee. A sample of academic writing should be included as part of the doctoral-level admission folder.

Master's applications are considered on a rolling basis. Students applying for doctoral programs should consult the director of the Interdepartmental Doctoral Program for information about application deadlines. *Application folders will be not be considered until all required information is received by the School of Graduate Studies and sent to the department.*

Master's Degree Programs

Secondary Education master's degree programs provide coursework and professional experiences for those preparing to become master teachers, teacher-leaders, supervisors, or curriculum specialists. Each

program provides coursework in education, with associated work in a specialized subject matter, which is the teacher's area of concentration. Typically, the area of concentration derives from the teacher's ongoing work with middle school or high school students.

Areas of specialization in Secondary Education include the following: Educational Leadership, English as a Second Language (MEd only), English Education, Gifted and Talented, Mathematics Education, Middle Level Education, Reading Education, Social Studies Education, and Science Education. Two University departments—Art and Business Information Systems—also participate in master's degree programs sponsored by Secondary Education. Admission to these fields of study requires approval of the cooperating department. In planning areas of specialization, students work with a faculty advisor and select graduate courses from the University-wide curriculum.

MEd Degree Plan B (36 credits)

The MEd Plan B offers a Portfolio Project Option or Creative Project Option which culminates in the presentation of the project in a final exam setting. Students take a common core of courses from college and department curricula, then courses in areas of concentration in relation to their teaching specialities. The research course for the MEd focuses on issues of application as well as action research. Creative projects are diverse and range from action research to curriculum development. The professional portfolio project provides the context for a personal knowledge base. Although portfolios share certain structural features, each student's portfolio is unique.

MEd Degree Plan C (40 credits)

The MEd Plan C is a coursework-only program. Students take a common core of courses from college and department curricula, then courses in areas of concentration in relation to their teaching specialities; additional coursework is taken in the area of concentration. At the conclusion of the program, a culminating experience to meet the needs of the student is developed. Options for the experience can be an interview with the advisor, oral comprehensive examination under the supervision of the advisor, written comprehensive examination under the supervision of the advisor, or other culminating experience developed by the student and advisor and approved by the department head.

MS and MA Degrees Plan A (30 credits)

The MS/MA option culminates in a formal defense of a thesis. This option is for teachers whose long-term goals require a traditional, research-oriented degree. The MS thesis involves either an experimental or qualitative research study. The MA thesis involves development of a scholarly literature review. The MA degree also requires foreign language competency.

Doctoral Degree Programs

For students who have already completed a master's degree, Secondary Education participates in the interdepartmental doctoral program coordinated by the dean of the College of Education and Human Services. Both PhD and EdD degrees are offered in the Curriculum and Instruction specialization. For an overview of the program, including program requirements and admission procedures, see pages 223-224 of this catalog. As with any degree program, students interested in doctoral study are encouraged to contact the department head of Secondary Education.

Financial Assistance

Departmental support or grant support is available to doctoral-level and master's level students pursuing full-time study on campus. Such financial support typically is through assistantships, which carry half-time teaching, research, or supervisory obligations. Typical assistantships carry forward for three years. Awards are made on a competitive basis. Students who wish to be considered for financial aid should apply to the department no later than February 1 for the following academic year. Acceptance to graduate study does not guarantee financial assistance.

Secondary Education Faculty

Professor
Barry M. Franklin, curriculum policy, theory, and history

Professors Emeriti
Ross R. Allen, mathematics education, comparative education
Eldon M. Drake, journalism, general student teaching
Kenneth C. Farrer, curriculum development
Richard S. Knight, social studies specialist
Izar A. Martinez, administration, research methods, measurement/evaluation
Walter L. Saunders, science specialist
James P. Shaver, social studies, former School of Graduate Studies Dean
William J. Strong, content area reading, Utah Writing Project Director

Associate Professors
Kay Camperell, content area reading/writing, learning theory, literacy education
Gary L. Carlston, instructional leadership
Janice L. Hall, qualitative research, professional development, supervisor of student teaching
Grace C. Huerta, educational foundations, multi-cultural education

Adjunct Associate Professor
Michael K. Freeman, higher/adult education, educational leadership

Associate Professor Emeritus
Varnell A. Bench, extension, administration, supervision

Assistant Professors
George G. Hruby, literacy/reading
Carla C. Johnson, science
Sherry Marx, ESL/Bilingual
Thomas C. Pedroni, social studies, critical social theory, qualitative methods, critical pedagogy
L. Ruth Struyk, classroom assessment, classroom management, measurement, instructional supervision, program evaluation

Continuing Education Assistant Professors
Peggie Lee Clelland, literacy, reading
Laurie Culbreth, English education
Steven Laing, educational leadership

Lecturer
Barbara Cangelosi, classroom management

Adjunct Clinical Instructor
Loo Leong Guan Eddie, instructional technology

Undergraduate Advisor
Harold E. Heap, classroom management, adolescent development

Course Descriptions

Secondary Education (SCED), pages 593-596

Academic Service-Learning Program and Certificate

Coordinator: Robert H. Schmidt
Location: Student Center 316A
Phone: (435) 797-7947
FAX: (435) 797-2919
E-mail: rschmidt@cc.usu.edu

Vice President for Student Services:
Juan N. Franco, Student Center 220, (435) 797-1712, juan.franco@usu.edu

Vice Provost for Undergraduate Studies and Research:
Joyce Kinkead, Main 142, (435) 797-1706, joyce.kinkead@usu.edu

Assistant Director for Service and Leadership:
Nellene Howard, Student Center 326, (435) 797-7482, nellene@cc.usu.edu

Program Description

Utah State University has implemented an Academic Service-Learning Program that leads to a Certificate in Service-Learning. This program provides a much-needed and desired academic component complementing the extensive public service efforts of many USU students. It supports broader state and national movements promoting more civic engagement among college and university students. It also supports USU's undergraduate educational mission, which is to prepare citizen scholars "*...who participate and lead in local, regional, national, and global communities*."

Service-Learning is a well-researched and highly effective teaching pedagogy, which incorporates community service into the course curriculum. Academic Service-Learning is a credit-bearing educational experience where students: (1) gain a broader understanding of course content, (2) earn a deeper appreciation of the discipline, (3) help meet community needs, (4) reflect on service activities, and (5) develop an enhanced sense of civic responsibility. Many opportunities for service-learning are available for USU students. Course sections listed in the *Schedule of Classes* with the SL designation have been approved by the Service-Learning Steering Committee to meet the criteria listed above.

The program is housed organizationally within the Office of the Provost, with oversight by the Vice Provost for Undergraduate Studies and Research. The program's faculty and staff work very closely with the ASUSU Service Vice President, the Val R. Christensen Service Center program directors, and the Vice President for Student Services. The Service-Learning Coordinator is assisted by a steering committee consisting of faculty, students, and staff.

Certificate

Service-Learning Scholars are awarded a Service-Learning Certificate, which is recorded on a student's official transcript, enabling employers and graduate programs to see evidence of a student's determination to go the extra mile. As Service-Learning Scholars, students will also be recognized at graduation with a banquet in their honor, cords to wear during commencement, and their names in the graduation program.

Admission Requirements

Service-Learning Scholars at USU are an elite group of students dedicated to making a difference in their community. Each year, 25 students will be admitted to the program. Admission to the program is competitive and is limited to a maximum of 100 students at any one time. In order to gain admittance to the program, students must submit an application, have a 3.0 or higher grade point average, and submit a written essay detailing their interest in Service-Learning and their dedication to community engagement.

Certificate Requirements

To receive a Service-Learning Certificate, a student must:

1. Apply for and be accepted to the Service-Learning Scholars Program.
2. Earn a *minimum* of 9 SL designated credits (with a grade of *B* or better in each course).
3. Perform a *minimum* of 400 service hours.
4. Develop and complete an approved capstone project.
5. Maintain and present a reflective portfolio.

The 9 credits must come from an approved list of Service-Learning courses. Course adaptations will be considered by the Service-Learning Coordinator (for example, an instructor may work with one student in a non-SL course to complete the SL requirement). For answers to any questions, as well as an up-to-date list of approved SL courses and program applications, students should contact the Service-Learning Coordinator.

Interdepartmental Program in Social Sciences

Degree Coordinator:
Gary Kiger, Dean of College of Humanities, Arts, and Social Sciences
Location: Main 338
Phone: (435) 797-1195

Degree offered: Master of Social Sciences (MSS)

Primary Disciplines: History, Political Science, and Sociology

Secondary Disciplines: Anthropology; Business Administration; Instructional Technology; Environment and Society; Family, Consumer, and Human Development; History; Political Science; Psychology; Social Work; and Sociology

Graduate Program

Administration

The program is administered by a committee of the department heads (Management Committee) from the three primary disciplines or their designees. The committee is chaired by annual rotation by one of the members of the committee, and reports to the Degree Coordinator. The Management Committee reviews policy and develops recommendations which are submitted to the Degree Coordinator for approval.

Degree Description

The social sciences are disciplines that have as a common objective the understanding of human behavior and social relationships. The MSS offers multidisciplinary graduate training for candidates desiring in-depth applied understanding of human performance, human environments, and/or the structuring of social, political, and economic systems. Students in History and Sociology typically follow the Plan B option, which requires a minimum of 30 credits. A minimum of 15 credits are required in a primary discipline, plus a minimum of 15 credits from one of the following two tracks: *Track A*: a minimum of 15 credits from two approved primary disciplines, with at least two courses in each secondary discipline. *Track B*: a minimum of 15 credits from an approved secondary discipline and a cluster, with at least two courses in the secondary discipline and two courses in the cluster. Courses counted in a cluster must be outside the selected primary discipline and secondary discipline. Three of the 30 credits required for the Plan B option must be thesis credits, but no more than 3 credits of thesis can be counted toward a degree. Departments may impose more rigorous requirements. A maximum of 3 credits may be earned either from readings/conferences or from independent research.

The MSS degree is primarily intended to prepare degree recipients for employment or advancement in social science-related occupations. Students interested in pursuing doctoral work should consider a Plan A Master of Science program.

Admission Requirements

See general admission requirements, pages 93-94. In addition, the faculty of each discipline determines whether to recommend to the graduate dean the acceptance of applicants. For further information, contact the Graduate Coordinator in the department of the proposed primary discipline.

Degree Requirements

Student Supervision

For each student admitted, a supervisory committee is ordinarily appointed consisting of at least one faculty representative from the student's primary discipline and (a) one from each of the secondary disciplines, or (b) one from a secondary discipline and one from a discipline associated with the cluster. Policies governing student supervision may vary from specialization to specialization.

Plan B Research Paper

Each Plan B student must submit a research paper for thesis credit in accordance with School of Graduate Studies and departmental requirements. Ordinarily, the Plan B paper is written in the primary discipline, but in some cases, with the approval of the student's supervisory committee, it may be written in one of the secondary disciplines. Information specific to each primary discipline may be obtained by contacting the sponsoring department.

Further Information

Candidates interested in pursuing this degree program may obtain specific information by contacting the head of one of the participating departments, the School of Graduate Studies, or the dean of Humanities, Arts, and Social Sciences.

Department of Sociology, Social Work and Anthropology

Department Head: Richard S. Krannich
Location: Main 224
Phone: (435) 797-1230
FAX: (435) 797-1240
E-mail: ann.johns@usu.edu
WWW: http://www.usu.edu/sswa

Undergraduate Program Directors:
Sociology:
Peggy Petrzelka, Main 216E, (435) 797-0981, peggyp@hass.usu.edu
Social Work:
Terry L. Peak, Main 239D, (435) 797-4080, tpeak@hass.usu.edu
Anthropology:
Patricia M. Lambert, Main 245A, (435) 797-2603, plambert@hass.usu.edu

Sociology Graduate Program Director:
Douglas B. Jackson-Smith, Main 216H, (435) 797-0582, douglasj@hass.usu.edu

Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), Master of Science (MS), Master of Arts (MA), and Doctor of Philosophy (PhD) in Sociology; participates in Master of Social Sciences (MSS); BS and BA in Social Work; BS and BA in Anthropology

Graduate Specializations: *PhD*—Demography, Environmental Sociology/Sociology of Natural Resources, Social Problems, and Sociology of Development

Undergraduate Programs

Objectives

The department offers educational programs for students to prepare for positions in business, social welfare, teaching, research, personnel, government service, social services, law enforcement, and industry, as well as providing liberal and general education for all interested students. The department offers a wide range of courses for the study of social, cultural, and behavioral dynamics. The department also provides University Studies, Liberal Arts and Sciences, and other service courses for students from all majors.

Requirements

Departmental Admission Requirements

New freshmen admitted to USU in good standing qualify for admission to the sociology and anthropology majors, as well as to the pre-social work major. Undeclared and transfer students from other USU majors or other institutions must have a minimum 2.5 overall GPA.

For admission to the sociology major, students must additionally have earned a grade of *C* or better in SOC 1010 (effective Fall Semester 2005). For admission to the social work major, transfer students must have earned a minimum 2.75 GPA in all social work classes. Applicants to the social work major must have completed the basic social work core curriculum, must have a minimum 2.5 overall GPA and a minimum 2.75 GPA in social work classes, must have completed SW 1050 with a grade of *C+* or better, and must have completed an application form (available from the department).

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Additional Information

Major requirement sheets, which provide detailed information about requirements for majors and minors within the Sociology, Social Work and Anthropology Department, can be obtained from the department, or accessed online at: **http://www.usu.edu/ats/majorsheets/**

Sociology

Undergraduate Program Director: Peggy Petrzelka
Program Office: Main 224, (435) 797-1230

The study of the human individual and human groups is central to sociology. Sociology offers a broad foundation for understanding human behavior on an individual and group basis, and encourages the development of skills necessary for establishing favorable societal conditions for human development.

Students learn to systematically describe and explain group behavior, including the effects of one group on another and of groups upon individual behavior. Required sociology classes deal with how people in different societies organize and control their societies; critical issues, such as race, class, and gender, as they have developed through history; and research and statistical methods for analyzing sociological data.

Upon completion of the prescribed program for a major in sociology, the student should be able to:

1. Demonstrate knowledge essential for understanding society from a sociological perspective;
2. Identify and critically evaluate the contributions of sociologists, social scientists, and scholars;
3. Identify and critically evaluate the forces and institutions that influence his or her life as a member of society;
4. Identify, comprehend, and critically evaluate the influences of race, class, gender, age, and disability on a member of society;

5. Pursue careers in sociological areas, business, government, and/or graduate study; and

6. Apply the methods and concepts of sociology to the analysis of social issues, problems, and conflicts in preparation for participation as agents of creative social change.

Students select courses from three different areas. **Social Problems** classes focus on criminology and deviance, retirement and other aspects of aging, the causes and prevention of juvenile delinquency, and the cultural characteristics of various social groups. **Groups and Institutions** courses look at collective behavior, the organization of communities, and the development of gender roles, as well as economic systems, educational systems, and social inequality. **Population** and **Environment and Development** courses deal with the effects of the environment and human behavior and the consequences of different patterns of population growth and settlement. A Law and Society Area Studies Certificate is available. A teaching minor in sociology is available for students wishing to teach in secondary schools.

Surveys of graduates indicate that sociology majors pursue a wide range of occupations. About one-third are employed in the professional sector, while close to one-fourth are in service occupations. In addition, 26 percent are involved in sales or management/administration. In terms of specific job titles, social service is a popular option, as are retail sales and teaching. Other frequent job titles include: vocational rehabilitation counselor, research analyst, data coordinator, management analyst, district sales manager, parole officer, juvenile probation officer, social services director, civil service test examiner, personnel director, insurance salesman, and correctional service officer. A variety of government and business positions are also expanding for sociology majors with the new emphasis on a liberal arts education. The growing awareness of the value of sociological perspectives for problem-solving continues to provide an increasing range of opportunities for employment in a variety of work settings.

Departmental Graduation Requirements

Sociology majors must meet the following course requirements:

1. Complete the general requirements of the University. Majors are expected to take STAT 1040 (QL) Introduction to Statistics to fulfill the quantitative literacy requirement for University Studies.

2. Complete a minimum of 33 credits of sociology coursework. At least fifty percent of the sociology coursework must be completed in the USU Sociology program. Sociology majors must maintain a minimum GPA of 2.5 in sociology courses and earn a grade of *C* or better in SOC 1010 (BSS) Introductory Sociology (effective Fall Semester 2005) and a *C*- or better in all other courses to be counted toward the major.

3. A minor outside the program is encouraged but not required.

4. Complete the following required courses (15 credits):
   SOC 1010 (BSS) Introductory Sociology (F, Sp).....3
   SOC 3010 Race, Class, and Gender (F, Sp).....3
   SOC 3110 (CI)[1] Methods of Social Research (F, Sp).....3
   SOC 3120 (QI)[2] Social Statistics I (F, Sp).....3
   SOC 4010 Contemporary Sociological Theory (F).....3

5. Choose a minimum of 18 credits from the following sociology elective courses. At least 3 credits must come from each of the three specialty areas listed below.

a. Social Problems
SOC 1020 Social Problems (F, Sp).....3
SOC 3410 Juvenile Delinquency (F, Sp).....3
SOC 3420 Criminology (F, Sp).....3
SOC 3430 Social Deviance (F).....3
SOC 3750 Sociology of Aging (F).....3
SOC 4420 (CI) Criminal Law and Justice (Sp).....3
SOC 4800 Seminar in Sociology (F, Sp).....1-3

b. Groups and Institutions
SOC 2500 Sociology of Gender (F).....3
SOC 3320 Sociology of Work and Organization (Sp).....3
SOC 3330 Medical Sociology (F).....3
SOC 3500 Social Psychology (F, Sp).....3
SOC 4330 Sociology of Religion (F).....3
SOC 4800 Seminar in Sociology (F, Sp).....1-3

c. Population, Environment, and Development
SOC 3200 Population and Society (F, Sp).....3
SOC 3600 Sociology of Urban Places (F).....3
SOC 3610 Rural Sociology (F).....3
SOC 4620 Sociology of the Environment and Natural Resources (Sp).....3
SOC 4710 Asian Societies (Sp).....3
SOC 4730 Women in International Development (Sp).....3
SOC 4800 Seminar in Sociology (F, Sp).....1-3
SOC 5650/6650 Developing Societies (F).....3

[1]Prerequisites: Six credits of departmental courses.
[2]Prerequisites: Six credits of departmental courses; and STAT 1040 or equivalent

Sociology and Social Work Dual Major

Sociology majors desiring additional preparation for employment in the social services may complete a dual major in sociology and social work. With the help of advisors, students who will seek positions in other special areas could include appropriately related courses.

Minor

Students minoring in sociology must complete a minimum of 12 credits in sociology courses. Sociology minors must maintain a minimum GPA of 2.5 in sociology courses. They must also earn a grade of *C* or better in SOC 1010 (BSS) Introductory Sociology (effective Fall Semester 2005), and a grade of *C*- or better in all other courses to be counted toward the minor.
SOC 1010 (BSS) Introductory Sociology (F, Sp).....3
SOC 1020 Social Problems (F, Sp).....3
Additional credits with a SOC prefix.....6

Sociology Student Organization

Alpha Kappa Delta (AKD), the sociology honor society, provides sociology undergraduates with a sense of community and an opportunity to build strong friendships outside of the classroom. Students are encouraged to become involved with AKD. For further information, contact Peggy Petrzelka, **peggyp@hass.usu.edu**.

Teaching License

Sociology is defined as an approved teaching major in Utah secondary schools by the State Board of Education. The sociology major must complete a minor in a subject that is required in Utah high schools. In addition to completing the courses required for the sociology major, the sociology teaching major must also complete the required teaching licensure courses in education. Students can also elect sociology as an approved teaching minor.

Law and Society Area Studies Certificate

The Department of Sociology, Social Work and Anthropology sponsors an interdisciplinary program emphasizing the study of the relationship between law and society. Students must complete a minimum of 24 credits, chosen from a selected list of courses, in at least three disciplines. A minimum 3.0 GPA must be maintained in these courses.

The selected courses are:

FCHD 3100 Abuse and Neglect in Family Context (F, Sp) (prereq: Sophomore standing, FCHD 1500, 2400) (3 cr) **or**
PSY 3120 Abuse, Neglect, and the Psychological Dimensions of Intimate Violence (F, Su) (prereq: PSY 1100) (3 cr) 3
JCOM 4030 Mass Media Law (F, Sp) 3
MHR 2990 Legal and Ethical Environment of Business (F, Sp, Su) 3
MHR 3810 Employment Law and Policy Development (F, Sp) 3
MHR 5640 Selected Topics: International Business Law 3
PHIL 2500 (BHU) Social Ethics (F) 3
PHIL 4600 Philosophy of Law (F) 3
PHIL 4610 (DHA) Social and Political Philosophy (Sp) 3
PHIL 5600 Legal Ethics (F) (prereq: PHIL 4600) 3
POLS 3120 Law and Politics (F) 3
POLS 3130 United States Legislative Politics (Sp) 3
POLS 3170 Law and Economics (F) 3
POLS 3320 The Foundations of American Constitutionalism 3
POLS 3810 Introduction to Public Policy (F) 3
POLS 4120 American Constitutional Law (F) 3
POLS 4130 Constitutional Theory (Sp) 3
POLS 4810 Politics and Public Policy (F) 3
POLS 5130 Law and Policy (Sp) 3
SOC 1020 Social Problems (F, Sp) 3
SOC 3410 Juvenile Delinquency (F, Sp) 3
SOC 3420 Criminology (F, Sp) 3
SOC 3430 Social Deviance (F) 3
SOC 4420 (CI) Criminal Law and Justice (Sp) 3
SPED 5070 Policies and Procedures in Special Education (F) 1-3
SW 5350 (CI) Social Welfare Policy (F) 3

Only 12 credits may be selected from a single discipline. The Law and Society Area Studies certificate is pursued in conjunction with a major. Credits may be applied to the major, as well as to the area studies requirements. A student's transcript will reflect the Law and Society Area Studies certificate upon completion of requirements for a degree.

More information may be obtained from the department or from the College of HASS Advising Center, Student Center 302.

Gerontology Program

The Department of Sociology, Social Work and Anthropology is one of several departments sponsoring an interdisciplinary gerontology program, which prepares students for careers in the field of aging. Students may earn a certificate in gerontology by completing a selected list of course requirements, including supervised field practicum in a gerontological setting.

More information concerning the gerontology certification program may be obtained from the Department of Family, Consumer, and Human Development.

American Studies Major

The Department of Sociology, Social Work and Anthropology is one of several departments offering an area of concentration for the American Studies program. Students who wish to focus their work in American culture should refer to the American Studies program description (pages 250-251).

Social Work

Program Director: Terry L. Peak
Program Office:
Main 239, (435) 797-1286; or Main 224, (435) 797-1230

Utah State University's Social Work Program offers a baccalaureate degree in social work. The program is accredited by the Council on Social Work Education (CSWE) and meets requirements established by the State of Utah for licensure of social service workers.

The Social Work Program provides a learning environment for those who seek to acquire the knowledge and skills needed to bring about meaningful social change in individuals, groups, communities, organizations, and society. The program provides grounding in the fundamental generalist skills, knowledge, and values of social work, such as critical thinking, clarification of personal values, awareness of diversity, professional use of self, and communication and interpersonal relationship skills.

Social Work at Utah State University recognizes the historic importance of social welfare in balancing the country's economic and social structure. The program is committed to the resolution of contemporary human social problems, such as poverty, racism, discrimination, and economic injustice.

Program Goals

There are two fundamental goals that guide the Social Work Program:

1. **To prepare students for employment as generalist social workers through education in a professional foundation curriculum and selected liberal arts education coursework.**

2. **To prepare students for advanced education.**

The program is based on a generalist conception of social work and a problem-solving, empowerment, and strengths model of practice. The social work sequence stresses problem solving at the interface of person and environment, which requires that students develop a repertoire of generalist practice skills. The program inculcates in students the knowledge, skills, understanding, and values necessary to perform multi-level assessments and interventions utilizing a theoretical knowledge base. The program is committed to building a student's education on a solid base that includes a liberal arts perspective vital to the development of a social worker.

The program endeavors to prepare students for advanced standing in graduate professional programs and to provide a solid academic base for continuing education. To accomplish this, the program facilitates the development of the profession's knowledge, values, and skills; provides a well-rounded liberal arts educational foundation; and teaches good study habits, written and oral communication skills, and the ability to think critically.

The program also endeavors to maintain a campus environment that will foster a sense of community and social responsibility. To accomplish this, the program provides opportunities for service learning, social development, and educational research forums through the state-affiliated National Association of Social Workers student organization and the Social Work Phi Alpha Honor Society.

Department of Sociology, Social Work and Anthropology

Licensure

In the State of Utah, graduates with a bachelor's degree in Social Work are eligible to be licensed upon graduation as social service workers. Students may obtain further information on licensure from:

Department of Commerce
Division of Occupational and Professional Licensing
160 East 300 South
PO Box 146741
Salt Lake City UT 84114-6741
(801) 530-6628
http://www.dopl.utah.gov

Social Work Major

Liberal Arts Foundation

All students pursuing an undergraduate degree at Utah State University must meet requirements designed to assure a broad, liberal arts foundation. Cross-cultural and cross-disciplinary perspectives are vital to a student's development as a social worker. The University Studies program, which is described in detail in this catalog (see pages 46-54), is required of all majors. Majors are expected to take STAT 1040 (QL), Introduction to Statistics, to fulfill the quantitative literacy requirement for University Studies. In addition to fulfilling University Studies requirements, majors will need to complete specific liberal arts courses, listed in the Social Work Program requirements, some of which fulfill both University Studies and Social Work Program requirements. Social Work majors must complete STAT 1040 (Introduction to Statistics) and SOC 3120 (Social Statistics I) to graduate.

Program Admission Requirements

The following regulations apply for admission to the Social Work Program: (1) New freshmen admitted to USU in good standing qualify for admission to the Social Work Major. (2) Transfer students from other institutions must obtain a minimum overall GPA of 2.5 and a minimum overall GPA of 2.75 in social work classes. (Refer to the *USU Social Work Program Transfer of Credit Policy*.) (3) Students transferring from other USU majors must complete the Social Work Major course of study and must obtain a minimum overall GPA of 2.5 and a minimum overall GPA of 2.75 in social work classes. (4) Students must apply for and meet criteria for advanced standing, in order to continue on in upper-division social work practice courses and field practicum courses. (5) Students are responsible for reviewing and knowing the requirements for the Social Work degree. (6) All courses required for the Social Work degree must be taken for a letter grade.

Social Work Major

Students may declare Social Work as their major at any time. All course offerings in social work are open to all Social Work majors, with the exception of the practice courses (SW 3050 Practice I, SW 4150 Practice II, and SW 4160 Practice III) and the field practicum courses (SW 4870 Beginning Field Practicum and SW 5870 Advanced Field Practicum), which require admission to advanced standing. Social work students are expected to take courses in sequence, in order to have the professional foundation knowledge required for each class. Maintenance of a high grade point average is important as students progress through the major and continue on to graduate school. Requirements for the Social Work major are as follows:

First year:
SW 1050[3] Introduction to Social Welfare (F) 3
ANTH 1010 (BSS) Cultural Anthropology (F, Sp) 3
BIOL 1010 (BLS) Biology and the Citizen (F, Sp, Su) 3
ENGL 1010 (CL) Introduction to Writing: Academic Prose (F, Sp, Su) . 3
FCHD 1500 (BSS) Human Development Across the Lifespan (F, Sp) .. 3
PSY 1010 (BSS) General Psychology (F, Sp, Su) 3
SOC 1010 (BSS) Introductory Sociology (F, Sp) 3
STAT 1040 (QL)[4] Introduction to Statistics (F, Sp, Su) 3

[3]Students must take SW 1050 before taking SW 2400 and 2500.
[4]Students must complete STAT 1040 as a prerequisite to SOC 3120 and to fulfill Social Work major requirements.

Second year:
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode (F, Sp, Su) 3
SW 2400[5] Social Work with Diverse Populations (Sp) 3
SW 2500[5] Human Behavior in the Social Environment (Sp) 3
One elective enrichment course 3
Students should apply for advanced standing during their second year.

[5]Since SW2400 and 2500 are only offered during spring semester each year, students should plan accordingly.

Third year:
SW 3050[6] Practice I (F) 3
SW 4100 Social Work Research (F) 3
SW 4150 Practice II (Sp) 3
SW 4160 Practice III (Sp) 3
SOC 3120 (QI)[7] Social Statistics I (F, Sp) 3
Two elective enrichment courses 6
Students should apply for the practicum during their third year.

[6]Prior to taking SW 3050, students must apply for advanced standing, to qualify to enroll in practice courses.
[7]STAT 1040 (Introduction to Statistics), plus 6 credits in Social Work and/or Sociology courses, are prerequisites for this course. STAT 1040 and SOC 3120 must be completed in order to graduate with a social work degree.

Required Elective Enrichment Courses
Nine credits of electives are to be chosen during the second and third years, prior to the practicum year. At least two electives are to be taken in Social Work, and one upper-division elective can be taken outside of Social Work.
SW 3350 Child Welfare 3
SW 3360 Adolescents: Theories, Problems, and Issues 3
SW 3450 School Social Work 3
SW 3550 Social Gerontology 3
SW 3650 Mental Health 3
SW 3750 Medical Social Services 3
SW 3850 Spirituality and Social Work 3
SW 3950 Occupational and Environmental Health 3
SW 4900 Topical Issue Seminar (F, Sp) 3-6

Optional Elective
SW 4950[8] Directed Readings (F,Sp) 1-5

Fourth year:
SW 4870[9] Beginning Field Practicum (F) 6
SW 5350 (CI) Social Welfare Policy (F) 3
SW 5870 Advanced Field Practicum (Sp) 6

[8]SW 4950 requires a plan of study, approved by a social work faculty member, at least one semester prior to registration. This course is *not* considered to be a required elective.
[9]Prior to enrolling in Beginning Field Practicum, students must apply for admission to the Field Practicum and must have advanced standing status.

Procedures for Advanced Standing in the Social Work Major

In order to be considered for advanced standing, students must turn in a completed application form by March 1 of the academic year. Applications for admission can be obtained in the Social Work Office,

Main 239. At the end of spring semester, when the criteria for advanced standing have been met, eligible students will be ranked according to their grade point average, personal statement, performance on the advanced placement test, and faculty evaluation. The highest ranking students will receive advanced standing, which will allow them to enroll in upper-division practice courses. **Only those students who have completed first- and second-year requirements by the end of spring semester of the application year will be considered for advanced standing.** The primary reasons for this evaluation are: (1) to maintain a high-quality educational experience for students in upper-division practice courses, and (2) to maintain the status of full accreditation by the Council on Social Work Education. Students will receive notification of acceptance in June of the application year. Those students who do not receive advanced standing, and are therefore not allowed to enroll in upper-division practice courses, may retake courses to improve their GPA and reapply for advanced standing during the following year.

To be considered for advanced standing, students must meet the following minimum criteria:

1. Completion of the following courses with a *C* or better:
   ANTH 1010 (BSS) Cultural Anthropology (F, Sp).....3
   BIOL 1010 (BLS) Biology and the Citizen (F, Sp, Su) 3
   ENGL 1010 (CL) Introduction to Writing: Academic Prose (F, Sp, Su) 3
   ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode (F, Sp, Su).....3
   FCHD 1500 (BSS) Human Development Across the Lifespan (F, Sp).....3
   PSY 1010 (BSS) General Psychology (F, Sp, Su) 3
   SOC 1010 (BSS) Introductory Sociology (F, Sp).....3
   SW 2400 Social Work with Diverse Populations (Sp) 3
   SW 2500 Human Behavior in the Social Environment (Sp) 3

2. Completion of SW 1050 (Introduction to Social Welfare) with a grade of *C*+ or better.

3. Junior status (61-90 credits) upon application.

4. Maintenance of a minimum overall GPA of 2.5 and a minimum GPA of 2.75 in social work classes.

5. No *Pass-D-Fail* grades in courses required for the major.

6. A satisfactory grade (70 percent or better) on the Advanced Placement Test (APT), given during finals week of spring semester.

Students should also be aware that if there are any personal data, such as that included on the application for state licensure, which indicate a potential threat to the public safety and welfare, a student may be denied advanced standing in the program. Students turned down for advanced standing will be assisted in finding a more suitable major *or* may reapply during the following year.

To maintain advanced standing and eligibility for graduation as a Social Work Major, a student: (1) must obtain a *B*- or better in SW 3050 (Practice I), SW 4150 (Practice II), and SW 4160 (Practice III); (2) must have completed SW 1050 (Introduction to Social Welfare) with a *C*+ or better; (3) must maintain a minimum overall GPA of 2.5 or better and a minimum 2.75 GPA in the Social Work Major; (4) must receive a grade of *C* or better in all other courses required for the major; (5) must not repeat more than once, to improve a grade, any course required for the major; and (6) must not receive a *Pass-D-Fail* grade for any course required for the major.

Procedures for Admission to Field Practicum

Students must complete 480 clock hours of supervised field practicum and integrative seminar coursework. The field practicum courses are SW 4870 (Beginning Field Practicum) and SW 5870 (Advanced Field Practicum). Students may register for SW 4870 only after making application with the practicum director. Application must be made during the spring semester of the academic year prior to enrollment in the practicum, and is due by February 20. Applications are available in Main 239. No applications for the practicum will be accepted from students who will not complete all required coursework by the end of spring semester.

The following are eligibility criteria for admission to the field practicum:

1. Senior status (92-120 credits completed) by the end of the spring semester in which the student applies. Only those students who are candidates for the baccalaureate degree in social work may be admitted to the field practicum.

2. Completion of University Studies program (including Depth Education requirements) and all social work courses, with the exception of SW 5350 (Social Welfare Policy).

3. A grade of *B*- or better in SW 3050 (Practice I), SW 4150 (Practice II), and SW 4160 (Practice II).

4. A grade of *C* or better in all courses required for the major and a grade of *C*+ or better in SW 1050 (Introduction to Social Welfare).

5. No *Pass-D-Fail* grades received in courses required for the major.

6. Demonstration of appropriate professional, moral, and ethical character, and must abide by the National Association of Social Work (NASW) code of ethics.

7. Maintenance of an overall minimum GPA of 2.5 and a 2.75 minimum GPA in the Social Work Major.

8. A satisfactory grade (70 percent or better) on the Generalist Practice Test (GPT), given during finals week of spring semester.

Students should also be aware that if there are any personal data, such as that included on the application for state licensure, which indicate a potential threat to the public safety and welfare, a student may be denied continuation in the program. If a student is denied admission to the practicum, the faculty will review his or her file upon request.

Students entering the practicum cannot ordinarily begin their placement earlier than the start of fall semester. If they do so, this practice falls outside of the Social Work Program's responsibility, and any accrued hours will not count toward the practicum.

Transfer of Credit Policy

Students who transfer to the USU Social Work Program are required to complete an application for transfer credit. Students may substitute certain social work classes taken at other Council of Social Work Education (CSWE) accredited programs for USU courses. Course approval must be sought from the student's advisor. When petitioning for a substitution, the student is responsible to meet with an advisor and fill out a transfer of credit form, available in Main 239. Social work courses taken ten or more years ago *cannot* ordinarily serve as substitutes. Courses taken in a department or program *not accredited* by the CSWE *cannot* ordinarily serve as substitutes for the USU Social Work courses *unless* they have been covered in an articulation agreement.

The following regulations apply to transfer students: (1) A transfer credit application, with official transcripts from all institutions previously attended, must be submitted. (2) The transcripts must reflect a cumulative grade point average of at least 2.5 (on a 4.0 scale) and a 2.75 GPA in all social work courses. (3) The credentials of students seeking transfer to the Utah State University Social Work Program will be evaluated on an individual basis. (4) University Studies Depth Education requirements must be completed by **all** students, including transfer students who have earned an associate degree.

The following courses, or their equivalents, will be considered for transfer credit:
ANTH 1010 (BSS) Cultural Anthropology (F, Sp).....3
BIOL 1010 (BLS) Biology and the Citizen (F, Sp, Su).....3
ENGL 1010 (CL) Introduction to Writing: Academic Prose (F, Sp, Su) .3
ENGL 2010 (CL) Intermediate Writing: Research Writing in a Persuasive Mode (F, Sp, Su).....3
FCHD 1500 (BSS) Human Development Across the Lifespan (F, Sp)..3
PSY 1010 (BSS) General Psychology (F, Sp, Su) 3
SOC 1010 (BSS) Introductory Sociology (F, Sp).....3
STAT 1040 (QL) Introduction to Statistics (F, Sp, Su).....3
SW 1050 Introduction to Social Welfare (F) 3
SW 2400 Social Work with Diverse Populations (Sp) 3
SW 2500 Human Behavior in the Social Environment (Sp) 3

Students transferring from junior colleges will be required to apply for advanced standing and take upper-division social work courses at USU. Only those social work courses taken within the last ten years will be considered. Students transferring credits from CSWE accredited programs must apply for advanced standing, arrange to take the Advanced Placement Test (APT) during spring semester before they arrive on campus, and take the following courses with the USU Social Work Program:
SW 3050 Practice I (F).....3
SW 4150 Practice II (Sp).....3
SW 4160 Practice III (Sp).....3
SW 4870 Beginning Field Practicum (F) 6
SW 5350 (CI) Social Welfare Policy (F) 3
SW 5870 Advanced Field Practicum (Sp) 6

Social Work faculty members will review applications for advanced standing, to qualify students to enroll in upper-division practice classes. Advanced standing is based on the following criteria: (1) completion of FCHD 1500 (BSS); ENGL 1010 (CL), 2010 (CL); ANTH 1010 (BSS); BIOL 1010 (BLS); SOC 1010 (BSS); PSY 1010 (BSS); and SW 2400, 2500 with a grade of *C* or better; (2) completion of SW 1050 with a grade of *C+* or better; (3) junior status (61-90 credits) upon application; (4) maintenance of a minimum overall GPA of 2.5 and a minimum GPA of 2.75 in social work classes; (5) a passing score on the Advanced Placement Test (APT), which is a score of 70 percent or higher; and (6) no *Pass-D-Fail* grades received in courses required for the major. Students transferring to USU should obtain and complete a copy of the social work advanced standing application and send the application to the Social Work Program by March 1, prior to the fall semester in which they intend to transfer.

Students transferring to USU should be advised that social work education is a professional program designed to prepare competent and effective social work professionals. Coursework is based upon a specific body of knowledge, values, and professional skills. Therefore, if students have not completed the required criteria for advanced standing, completion of their educational program could take additional time. For more information about the Social Work Program, call (435) 797-1286, or visit the Social Work website at:
http://www.usu.edu/sswa/sw.htm

Social Work Student Organizations

The Social Work Program recognizes the importance of students having opportunities to learn and socialize outside of the classroom. Students are encouraged to be become involved with the NASW student organization, as well as the USU Social Work Program Phi Alpha Honor Society. Information is available in Main 239.

Anthropology

Program Director: Patricia M. Lambert
Program Office:
Main 245, (435) 797-0219; or Main 224, (435) 797-1230

Anthropology is the integrated study of humans in all their aspects. It offers a broad framework for understanding humans as individuals and as members of widely varying societies through courses dealing with the biological evolution of humans, prehistoric culture change, and present diversity of cultures and human populations. Two parallel goals of the discipline are to explore and develop an appreciation for human diversity and the shared legacy of our common humanity.

Anthropology includes the following subspecialties: cultural anthropology, biological anthropology, archaeology, and linguistics. Major requirements are designed to encourage broad exploration across anthropology, and students who major in anthropology examine a wide range of peoples and cultures, both past and present. They examine lifeways as different as the hunter-gatherers of Ice-Age Europe, tribal horticulturalists of lush interior Amazonia, and the diverse ethnic neighborhoods of modern U.S. cities. They explore both the biological and cultural basis of human behavior, and examine how it is manifested in individuals and groups. Anthropology courses use both scientific and humanistic approaches to the study of humankind, in all its complexity. Courses emphasize critical reasoning, oral and written communication skills, and the expansion of thinking beyond the familiar.

The contemporary social science student lives in a world of diminishing cultural and national barriers. In this setting, a major in anthropology can lead to a wide variety of careers. Anthropologists are on the staff of leading medical, business, law, public affairs, and other professional schools, and have played critical roles in international ventures, public health programs, community development activities, and minority and migrant social actions. Additionally, anthropology serves applied interests in international development, archaeology and cultural resource management, cross-cultural health care, and osteology/forensics. With first-hand experience in every region of the country and around the world, anthropologists bring a unique understanding of specific social and ethnic groups and of the biological, ecological, and cultural factors that influence human behavior.

Special features of the anthropology program include smaller courses, individualized attention, opportunities for laboratory, museum, and field work, and the opportunity of working in teaching assistant positions. All these features give anthropology majors choice and experiences unavailable to undergraduates in most programs. The Anthropology Museum and Field Schools provide additional hands-on learning opportunities. Anthropology participates in the Department of Geology emphasis in Geoarchaeology, the American Studies Program, and the Folklore Program in the Department of English.

Anthropology leads to a variety of “real-world” jobs. Anthropology graduates are: lawyers, nurses, health care administrators, travel consultants, teachers of all kinds, cultural resource professionals,

agency and program administrators, and technical writers. They work for museums, government land management, environmental and Foreign Service agencies, Indian tribes, and are common in both the government and private sectors of the environmental-cultural heritage protection industry. They can be found in public and private foundations, bureaus, and agencies for the arts, humanities, sciences, and tourism.

Graduate study in anthropology opens the world of practicing anthropology. Not limited to college teaching, anthropologists with graduate degrees can be found in a variety of private sector and government agency positions.

For students seeking a dual major, an Anthropology major can complement a major in American Studies, Biology, Geology, Geography, History, Languages, and Political Science. It also pairs well with majors in Natural Resources, because cultural resource and Native American issues are important to many positions in private firms and government agencies concerned with land management and the environment.

Major Requirements

A minimum of 33 credits is required for the anthropology major. All students must take four required courses, including a three-semester sequence in the basic areas of anthropology and a beginning upper-division level course in the history of anthropology. The anthropology major also requires exposure across the breadth of the discipline. To achieve this, students select courses from topical and area clusters at the upper-division levels and a final capstone course. Additional graduation requirements include:

Methods component

Majors must complete one "Methods" course. The course chosen to meet this requirement may also count toward other anthropology major requirements.

A minimum of 16 credits of the anthropology course credits counting toward the major must be Utah State University courses. Credits from distance and residence center courses are subject to departmental approval for application toward the anthropology major.

Students majoring in anthropology must maintain a minimum 2.5 GPA in anthropology courses. A grade of *C* or better must be attained in courses counted for the major, including foreign language and statistics courses. In addition, majors must complete the general requirements of the University in consultation with the student's advisor, and complete the following major courses:

Required Courses (12 credits)

ANTH 1010 (BSS) Cultural Anthropology (F, Sp)....3
ANTH 1020 (BLS) Biological Anthropology (F)....3
ANTH 1030 (BSS/CI) World Archaeology (F, Sp)....3
ANTH 3990 History and Theories of Anthropology (F)....3

Cultural Anthropology (6 credits minimum)

ANTH 2100 (BSS) Peoples of the Contemporary World (Sp)....3
ANTH 3110 North American Indian Cultures (F)....3
ANTH 3130 (CI) Peoples of Latin America....3
ANTH 3150 Field-Methods and Career Options in Anthropology (Methods) (F,Sp)....3
ANTH 3160 (DSS) Anthropology of Religion (F)....3
ANTH 4110/6110 (DSS) Southwest Indian Cultures, Past and Present (F)....3
ANTH 4120 (CI) Ethnography of Childhood (Methods) (F)....3
ANTH 4130 (DSS) Medical Anthropology: Matter, Culture, Spirit, and Health (Sp)....3
ANTH 4150 Problems in Cultural Anthropology (Methods) (Sp) (Currently under development)....3
ANTH 5100/6100 (DSS) Anthropology of Sex and Gender (Sp)....3
ANTH 5120/6120 Applied Rural Development (Sp)....3
ANTH 5130/6130 Ethnographic Field School (Methods) (Su)....3-6
ANTH 5160/6160 (DSS) Cities and Development (Sp)....3

Biological/Physical Anthropology (6 credits minimum)

ANTH 3200 (CI/DSS) Perspectives on Race (Sp)....3
ANTH 3250 Osteology (Methods) (F)....3
ANTH 4250 (QI) Problems in Bioarchaeology (Methods) (Sp)....3
ANTH 5210 Physical Anthropology Lab (Methods)....1-3

Archaeology (6 credits minimum)

ANTH 3300 (DSS) Archaeology in North America (Sp)....3
ANTH 3320 Ancient Humans and the Environment (F)....3
ANTH 3350 (DSS) Archaeology of Ancient Civilizations (Sp)....3
ANTH 4350 Archaeological Method/Theory and Cultural Resource Management (Sp)....3
ANTH 4360 (DSS) Ancient Desert West (F)....3
ANTH 4380 Peopling of the New World (Sp)....3

Capstone Courses (3 credits minimum)

ANTH 4250 (QI) Problems in Bioarchaeology (Methods) (Sp)....3
ANTH 4350 Archaeological Method/Theory and Cultural Resource Management (Sp)....3
ANTH 5650/6650 (DSS) Developing Societies (F)....3
ANTH 5990 Contemporary Anthropological Theory and Method (Sp)....3

Departmental Electives

Note: *Methods* courses require permission of instructor.
ANTH 1710 (BHU) Introduction to Folklore (F, Sp)....3
ANTH 2720 Survey of American Folklore (Sp)....3
ANTH 3310 (CI) Introduction to Museum Studies (Methods) (F)....3
ANTH 4100 The Study of Language (F, Sp)....3
ANTH 4370 Archaeology and Paleoenvironments Field Trip (F)....2
ANTH 4800 Topics in Anthropology....1-3
ANTH 5190 Applied Anthropology Practicum (Methods)....1-5
ANTH 5300 Archaeology Field School (Methods) (Su)....3-5
ANTH 5310 Archaeology Lab (Methods)....1-3
ANTH 5700 Folk Narrative (Sp)....3
ANTH 5800 Museum Development (Methods) (F, Sp, Su)....1-3
ANTH 5900 Independent Studies....1-3
ANTH 5980 Senior Project....1
ANTH 6900 Independent Studies....1-3
SOC 4730 Women in International Development (Sp)....3

Students planning to receive a BA degree must complete two years training or equivalent in a foreign language approved by the Languages, Philosophy, and Speech Communication Department or one year or equivalent in each of two foreign languages approved by the Languages, Philosophy, and Speech Communication Department.

Students planning to receive a BS degree must complete STAT 1040 (Introduction to Statistics), **and** one course having a Quantitative Intensive (QI) University Studies designation.

Anthropology majors are encouraged to complete both the foreign language and statistics requirements.

Minor Requirements

A minimum of 18 credits is required for the anthropology minor. A minimum of 12 anthropology credits counting toward the minor must be Utah State University courses. Credits from distance and residence center courses are subject to departmental approval for application

toward the anthropology minor. Students must maintain a minimum 2.5 GPA in anthropology courses. A grade of *C* or better must be attained in courses counting toward the minor.

Required Courses (9 credits)
ANTH 1010 (BSS) Cultural Anthropology (F, Sp).....3
ANTH 1020 (BLS) Biological Anthropology (F).....3
ANTH 1030 (BSS/CI) World Archaeology (F, Sp) 3

Breadth-in-Anthropology Structured Electives (9 credits minimum)
In addition to the required courses, students must complete a minimum of 9 credits (ANTH 2100, 3000-5000 level courses) in anthropology from the *Structured Electives*. (Independent Studies, Archaeology Lab, Physical Anthropology Lab, and Work Co-op *may not be included*).

Sociology Graduate Program

Graduate Program Director: Douglas B. Jackson-Smith
Program Office: Main 224, (435) 797-1230

The Department of Sociology, Social Work and Anthropology offers graduate work leading to the MS, MA, and PhD degrees in Sociology. The department also administers an interdisciplinary Master of Social Sciences (MSS) degree with emphasis in International Rural and Community Development.

The Graduate Program in Sociology provides a unique integrative and reinforcing combination of demographic, organizational, political-economic, and social psychological orientations to major domestic and global issues. At the graduate level, the department is particularly strong in four areas: Demography, Natural Resource and Environmental Sociology, Social Problems, and Sociology of Development. Graduate students have the opportunity to merge basic foundation coursework in sociological theory and research methods with more specialized training in selected specialty areas and apprenticeship roles in both basic and applied research projects. Sustained personal interaction between faculty and students is a hallmark and strength of the program.

The Graduate Program in Sociology has developed a *Graduate Program Handbook* that provides more details about the application process, financial assistance decisions, and graduation requirements. An electronic copy of this handbook is available on the departmental website: **http://www.usu.edu/sswa/grad.htm**

The typical graduate application has five main components:

1. A formal application form, available from the School of Graduate Studies;

2. Transcripts from the applicant's undergraduate and graduate studies;

3. Test scores from the Graduate Record Examination (GRE) for all applicants, and the Test of English as a Foreign Language (TOEFL) and the Test of Spoken English (TSE) examinations for international students whose native language is not English;

4. Letters of reference from faculty or scholars who can attest to the applicant's abilities to succeed in graduate school; and

5. A letter of intent providing background about the applicant's training, interests, and experiences, as well as an overview of the applicant's career goals and specific reasons why graduate training in sociology is important to the applicant.

All application materials should be sent directly to the School of Graduate Studies, 0900 Old Main Hill, Utah State University, Logan UT 84322-0900.

The department offers financial assistance to most graduate students enrolled in departmental programs. These funds are distributed through a competitive process, based on student qualifications, performance, and interests. Graduate assistants typically earn enough to cover basic costs of tuition and living expenses. In order to be considered for financial assistance for the following academic year, complete applications must be ***received by USU no later than February 1***. Decisions on graduate student funding are usually based on an overall evaluation of all five components of the application.

Students must have scores on the verbal and quantitative portions of the Graduate Record Examination (GRE) at or above the 40th percentile. TOEFL scores are required for international candidates, with a minimum score of 600 (paper test) or 250 (computer-based test) deemed acceptable. The Test of Spoken English (TSE) is also strongly recommended, with a minimum score of 50 deemed acceptable. International applicants who are admitted without having taken the TSE will be required to take a test of spoken English fluency administered by the Intensive English Language Institute (IELI) at Utah State University prior to beginning their first semester in the Sociology Graduate Program. Dependent upon the test results, the student may be required to complete a program of English language training during the first semester of residence in the graduate program. For consideration for admission to the MSS degree program, applicants may submit either GRE or Miller Analogies Test scores.

Applications are screened throughout the year by the Graduate Program Executive Committee. No applications will be considered until all required information arrives in the School of Graduate Studies or a formal petition to review a nearly-complete file is made and approved.

Students with or without an undergraduate degree in sociology may enter the master's degree program. However, before matriculating, basic competencies in sociology that have not been acquired through prior courses or experience must be satisfied. Students entering the doctoral program must complete master's level prerequisites in sociological theory and research methods and statistics.

PhD in Sociology

In addition to coursework in sociological theory and methods, doctoral students are expected to concentrate in and pass written comprehensive examinations in two of the following specialty areas. Specialty areas are distinct, but are also highly integrative. One line of integration involves the department's continuing emphasis on **Rural Sociology**, which links elements of all four specialty areas. The program is sufficiently flexible to permit students with a strong interest in an area other than the established specialty areas to elect that area as an emphasis area, rather than having a second specialization, with approval of the supervisory committee and the department head or his or her delegated representative. In this case, the student would select a series of courses in that area in consultation with his or her supervisory committee and the department head or his or her delegated representative.

Demography
The demography area of specialization is administered through the Population Research Laboratory. The orientation is twofold: (1) basic and policy-oriented research on sociological aspects of demographic structure and processes, including migration, marriage and fertility, morbidity, and mortality; and technical demographic topics such

as population estimates and projections; and (2) the provision of demographic training to domestic and international students relevant to their respective settings. Research endeavors encompass a broad range of local, regional, national, and international projects in the areas of migration and population redistribution, family demography, life course and aging, health and disability, labor force, and population estimates and projections. Graduate coursework is provided in social demography, population theories and policy, and demographic methods, as well as through various special topic seminars.

Environmental Sociology/Sociology of Natural Resources

The faculty in this area maintain an active research involvement in a wide variety of areas, such as natural resource development, land use changes, public participation in environmental planning, hazardous facility siting, recreation, risk assessment, population/environment relationships, public land management issues, and natural resource policy. Faculty have been engaged in cooperative research ventures with engineering, natural resource sciences, and other physical and social sciences faculty. Graduate curricula offerings are focused on the sociology of natural resources, environmental sociology, environmental problems and inequality, and social risk analysis.

Social Problems

This area is a specialization focused on theoretical and research-related issues relevant to a range of topics. Students will find a good deal of flexibility in the program, allowing them to pursue special interests. The faculty members affiliated with this specialty area are actively involved in research on contemporary social problems and structures of inequality.

A number of themes are emphasized in each of the specific content courses for this area. For example: How are social problems defined? What identifiable interest groups are involved in defining social problems? How do responses to social problems vary across time, place, and group? Examples of specific content courses this area may include are: criminal justice, aging, gender, race and ethnic relations, mental health, sexuality, stratification, science and technology, medicine, and work.

Sociology of Development

This specialization focuses on both domestic and international issues. Two major goals of the program are to give students the conceptual and analytic foundations to understand the dynamics and impact of social change and development, and to convey specific skills required for effective performance in applied fields. The basic curriculum includes courses covering a broad range of topics related to processes in local, national, and international development, including community, rural sociology, international development, applied anthropology, political sociology, and economic development.

Core Courses

The core courses for the PhD degree in Sociology include the following:

SOC 7010 Issues in Sociological Theory (Sp) 3
SOC 7100 Advanced Survey Techniques (Sp) 3
SOC 7110 Advanced Sociological Analysis (F) 3
SOC 7150 Advanced Qualitative Methods in Sociology (Sp) 3

MS and MA in Sociology

The main objective of this degree program is to provide a firm foundation in sociological theory and methods. Students also have the opportunity to take electives in any of the departmental specialty areas or outside the department. A minimum of 30 credits (including a research thesis) is required for the degree.

Core Courses

The core courses for the MS and MA degrees in Sociology include the folowing:

SOC 6010 Development of Sociological Theory (F) 3
SOC 6020 Modern Social Theory (Sp) 3
SOC 6100 Advanced Methods of Social Research (F) 3
SOC 6150 Social Statistics II (Sp) 3

The ability to utilize a statistical package (or permission of instructor) is a prerequisite to SOC 6150 (Social Statistics II).

MSS Sociology Specialization

This specialization enables interdisciplinary training in three related disciplines. The program requires a minimum of 35 credits, including 17 credits in a major discipline (Sociology); and either (1) a minimum of 9 credits in each of two minors or (2) a minimum of 9 credits in a minor and a minimum of 9 credits in a cluster. Two credits for the Plan B paper are included in the minimum 17 credits in Sociology. A minimum overall GPA of 3.0 is required. This is an applied degree. Individual options and plans of study can be arranged in consultation with the student's supervisory committee. At present, the degree is available with an emphasis in International Rural and Community Development.

International Rural and Community Development

This emphasis is designed to prepare administrators, planners, and researchers for work in international settings. The emphasis is on social and community factors in development. The interdisciplinary curriculum in sociology of development, rural sociology, economic anthropology, political science, and the economics of development has been specifically designed to prepare practitioners and leaders for careers in applied social development. The coursework can be adapted to the individual career interest of each student. The program involves students both from abroad and from the United States.

Core Courses

Individualized programs of study are prepared with the cooperation of the student and supervisory committee.

Research

The graduate program's research agenda is focused within the framework of the department's specialty areas. Since the areas are integrative, research tends to involve collaborative participation by several faculty members. Several active research projects are supported by the Utah Agricultural Experiment Station. Research is conducted at various levels, including international, national, regional, and state. The department houses two active research units, the Institute for Social Science Research on Natural Resources, and the Population Research Laboratory. Faculty play key roles in several interdisciplinary research units, including the Institute for Rural and Community Development and the Women and Gender Research Institute. Graduate program faculty are frequently involved in the research activities of other research units on campus, including the Center for Persons with Disabilities, the Utah Water Research Laboratory, the Mountain West Center for Regional Studies, and the International Irrigation Center.

Department of Sociology, Social Work and Anthropology

Financial Assistance

Both departmental support and formal research grant support are available to graduate students and are awarded on a competitive basis. Some highly qualified departmental graduate students are also nominated to compete for University fellowships. Students who wish to be considered for financial aid must submit applications by February 1 for the coming academic year. Late applications are considered only if additional funds are still available.

Teaching assistantships are available through the department. Research assistantships are available through faculty members who have ongoing projects with the Utah Agricultural Experiment Station or who have research grants from the University, private companies, and federal or state agencies. University fellowships are available for exceptionally qualified students.

Career Opportunities

Traditionally, persons with advanced degrees in sociology have been employed in college and university settings. Recent evidence has shown a greater variety of career paths. A survey conducted by the American Sociological Association showed that 21 percent of sociologists holding the doctoral degree were employed in the private sector; 31 percent were working in the nonprofit sector; 46 percent were working in federal, state, or local government agencies; and 12 percent were self-employed. USU sociology graduates have followed this pattern of diversity. They have secured appointments in a variety of academic, governmental, and private settings, both domestic and abroad. A sizeable number have achieved key leadership positions and high visibility in the profession.

Sociology, Social Work and Anthropology Faculty

Professors
Stan L. Albrecht, President of Utah State University, environmental sociology, rural sociology, health studies
John C. Allen, rural development, natural resource sociology, survey research methods
E. Helen Berry, demography, ecology, methods, urban
Richley H. Crapo, religion, sex, and gender; sexuality and homosexuality
Steven E. Daniels, rural development, natural resource policy
Susan E. Dawson, occupational and environmental health
H. Reed Geertsen, community, sociological theory, medical
Gary Kiger, Dean of College of Humanities, Arts, and Social Sciences; social psychology; gender, work, and family; research methods
Richard S. Krannich, environmental, community, and rural sociology; research methods
David F. Lancy, educational anthropology, ethnography
Gary E. Madsen, methods
Jon R. Moris, applied anthropology, rural development, contemporary Africa
Steven R. Simms, archaeology, anthropological theory, behavioral ecology
Michael B. Toney, demography, ecology

Adjunct Professors
Gil-Sung Park, economic sociology
Douglas N. Sharon, cultural anthropology

Professors Emeriti
Therel R. Black, theory, rural sociology
H. Bruce Bylund, social change, methods
Gordon N. Keller, comparative kinship, applied anthropology
Yun Kim, demography, development, quantitative methodology
Ronald L. Little, environmental sociology, rural, quantitative methodology
Wesley T. Maughan, community organization, sociology of education
Bradley W. Parlin, comparative sociology of work
Pamela J. Riley, social psychology, international development, criminology, gender
David L. Rogers, complex organizations, political sociology, communities
William F. Stinner, social demography, life course, community

Associate Professors
M. Diane Calloway-Graham, women's development, women's clinical and societal issues, social work theory
Bonnie Glass-Coffin, medical anthropology, shamanism, Latin America, applied anthropology, method and theory
Patricia M. Lambert, biological anthropology, bioarchaeology, paleopathology
Derek T. Mason, juvenile delinquency
Terry L. Peak, social policy, health care, gerontology

Adjunct Associate Professors
Dale J. Blahna, natural resource sociology, policy, and outdoor recreation
Joanna L. Endter-Wada, cultural anthropology and natural resource policy and sociology

Assistant Professors
Christy Glass, comparative sociology, work and labor markets, inequality
Kelly H. Hardwick, criminology, deviance, theory, methods
Douglas B. Jackson-Smith, sociology of agriculture, natural resources and environment, research methods, economic sociology
Susan E. Mannon, social inequality, sociology of development, gender
Sandra T. Marquart-Pyatt, environmental sociology, political sociology, methods
Peggy Petrzelka, environmental sociology, rural sociology, social change and development
Bonnie L. Pitblado, archaeology
Eric Reither, demography, health
Neil F. Wieloch, deviance, criminology, theory

Adjunct Assistant Professors
Nazih T. Al-Rashid, sociology of work
Janet L. Osborne, sociology of gender
Theresa L. Selfa, sociology of development
Bryan R. Spykerman, research methods

Assistant Professor Emeritus
Alice C. Smith, sociology

Lecturer
Jason Leiker, criminology and juvenile delinquency

Course Descriptions

Sociology (SOC), pages 597-599
Social Work (SW), pages 596-597
Anthropology (ANTH), pages 453-455

Department of Special Education and Rehabilitation

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Graduate Program Coordinators:
Special Education Master's Programs:
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Doctoral Programs:
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Doctoral Programs:
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Rehabilitation Counseling Program:
Julie F. Smart, Education 322, (435) 797-3269, jsmart@cc.usu.edu

Multi-university Consortium in Sensory Impairments Coordinator:
Judith M. Holt, Center for Persons with Disabilities 197, (435) 797-7159, judith@cpd2.usu.edu

Advising:
Advising and Student Teaching Coordinator:
Darcie L. Peterson, Education 107, (435) 797-3252, darcie.peterson@usu.edu

Distance Undergraduate Programs Coordinator:
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Degrees offered: Bachelor of Science (BS), Bachelor of Arts (BA), Master of Science (MS), Master of Education (MEd), and Educational Specialist (EdS) in Special Education; Master of Rehabilitation Counseling (MRC); Doctor of Philosophy (PhD) in Disability Disciplines; the Special Education and Rehabilitation Department participates in the Interdepartmental Doctor of Education (EdD)

Undergraduate emphases: *BS, BA*—Mild/Moderate Disabilities, Severe Disabilities, Early Childhood Special Education

Graduate specializations: *MEd, MS, EdS*—Behavioral Disorders, Early Childhood Special Education, Mild/Moderate Disabilities, Severe Disabilities, Transition/Special Education

Licensure is available for teachers in early childhood special education, mild/moderate disabilities, and severe disabilities. At the postbachelor's level, licensure is available for teachers in vision and hearing impairments. A Special Education composite licensure program is available with the Department of Elementary Education. A dual licensure program is available with secondary education content majors.

Undergraduate Programs

Objectives

The undergraduate programs in the Department of Special Education and Rehabilitation offer educational and training opportunities for teachers and support personnel working with exceptional children and adults with disabilities. The programs prepare students to work with individuals with mild, moderate, and severe disabilities and with early childhood special education. Students who are majoring in other teaching fields (i.e., elementary education, secondary education) are encouraged to pursue a second endorsement by taking those courses which lead to a special education license. Teacher education programs in the department are accredited by the State of Utah and nationally by NCATE.

Areas of Emphasis

The Department of Special Education and Rehabilitation offers training programs for individuals who want to work with children and adults with disabilities. A student fulfilling the undergraduate course requirements will qualify for a BS or BA degree in special education and be eligible for a license to teach students with mild/moderate disabilities, students with severe disabilities, or young children with disabilities. The severe and mild/moderate endorsements allow graduates to teach pupils with disabilities from kindergarten through 12th grades. The early childhood special education license allows graduates to teach children with disabilities from birth to five years old. In addition, the department offers composite teaching majors with the Department of Elementary Education and dual teaching majors with the Department of Secondary Education. Students completing the dual major requirements in secondary education will be eligible for teacher licensure in one of the special education endorsement areas and their secondary education content major. Students completing the composite major requirements in elementary education will be eligible for teacher licensure in one of the special education endorsement areas and elementary education. Students interested in teaching preschool children with disabilities may receive an early childhood special education license for ages 0-5, in addition to a K-12 special education endorsement in severe or mild/moderate disabilities. A Birth to Age 5 minor is available for Family, Consumer, and Human Development majors.

Requirements

Admission Requirements

Students are admitted to the Department of Special Education and Rehabilitation as Pre-Special Education majors by meeting the Utah State University minimum requirements (see pages 16-19). To become a Special Education major, a student must make written application to the department after meeting the following prerequisites: (1) completion of at least 40 attempted semester credits with a cumulative GPA of 2.75 or higher; and (2) completion of admission requirements to the College of Education and Human Services Teacher Education Program (see page 108). Students should apply to the department during fall semester of their sophomore year. Admission to the department is competitive based on several factors. These include: (1) the student's current GPA; (2) the number of credit hours completed by the end of fall semester; (3) completion of premajor classes (such as STAT 1040 and FCHD 1500); and (4) the student's career goals and experiences.

GPA Requirement

A minimum GPA of 2.75 is required to apply for admission, to remain in good standing, and to graduate from the program. All required special education classes must be completed with a grade of *C* or better.

Bachelor's Degree in Special Education

Undergraduate study leads to the Bachelor of Science or Bachelor of Arts degree in Special Education with licensure to teach students with mild/moderate disabilities, severe disabilities, or early childhood special education. The degree requires a total of **120 credits**. The requirements are as follows:

Department of Special Education and Rehabilitation

A.University Studies Requirements
Competency Requirements (9-13 credits), Breadth Requirements (18 credits), and Depth Education Requirements (5 courses). For more information, see pages 46-54.

B. Professional Education Requirements (18-22 credits)
FCHD 1500 (BSS) Human Development Across the Lifespan (F,Sp) (3 cr) **or**
PSY 1100 Developmental Psychology: Infancy and Childhood (F,Sp) (3 cr) 3
SPED 4000 Education of Exceptional Individuals (F,Sp,Su) 2
SPED 5530 Technology for Teaching Exceptional Learners (Sp) 3
PSY 3660 Educational Psychology for Teachers (F,Sp) 2
ELED 3000 (CI) Foundation Studies and Practicum in Teaching and Classroom Management Level II (F,Sp) 8
FCHD 2250 Seminar and Practicum in Early Childhood Education (required only for students completing the Birth to Age 5 Certificate) (F,Sp) ..... (4)

C. Special Education Major (42-60 credits)
Coursework includes: human growth and development; applied behavior analysis; introduction to systematic instruction (task analysis, curriculum-based measurement, behavioral objectives, contingent reinforcement); designing curriculum; Individualized Educational Programs (IEP); educational assessment, analysis, and adaptation of instructional materials; intervention strategies for academic and social behaviors; and parent involvement. Additionally, each endorsement area includes practicum work with exceptional children or youth. Finally, all students must complete student teaching with students with disabilities.

D. Teaching Support (15 credits)
The support area is designed to enhance the Special Education major's background. Areas recommended include communicative disorders, psychology, sociology, family and human development, recreation, and physical education.

E. Electives (7-20 credits)

Endorsement Areas

Students are required to complete the **Mild/Moderate Disabilities Endorsement**, the **Severe Disabilities Endorsement**, or the **Birth to Age 5 Certificate**.[1]

The following courses are required for the special education training programs. A minimum grade point average of 2.75 is required for admission to the endorsement courses. Most of the courses should be taken during the junior year. Students enrolled in the endorsement programs are required to maintain a GPA of at least 2.75.

Mild/Moderate Disabilities Endorsement (48 credits)
SPED 5010 (QI) Applied Behavioral Analysis 1: Principles, Assessment, and Analysis (F) 3
SPED 5040 Foundations of Effective Assessment and Instructional Practices (F) 3
SPED 5050 Applied Behavioral Analysis 2: Applications (Sp) 3
SPED 5060 Consulting with Parents and Teachers (Sp) 3
SPED 5070 Policies and Procedures in Special Education (F) 3
SPED 5200 (CI)[2] Student Teaching in Special Education (F or Sp) 15
SPED 5310 Teaching Reading and Language Arts to Students with Mild/Moderate Disabilities (F) 4
SPED 5320 Teaching Content Areas and Transition to Students with Mild/Moderate Disabilities (Sp) 3
SPED 5330 Eligibility Assessment for Students with Mild/Moderate Disabilities (F) 1
SPED 5340 Teaching Math to Students with Mild/Moderate Disabilities (Sp) 3
SPED 5410 Practicum: Direct Instruction Reading and Language Arts for Students with Mild/Moderate Disabilities (F) 3
SPED 5420 Practicum: Teaching Mathematics to Students with Mild/Moderate Disabilities (Sp) 4

Severe Disabilities Endorsement (44 credits)
SPED 5010 (QI) Applied Behavioral Analysis 1: Principles, Assessment, and Analysis (F) 3
SPED 5040 Foundations of Effective Assessment and Instructional Practices (F) 3
SPED 5050 Applied Behavioral Analysis 2: Applications (Sp) 3
SPED 5060 Consulting with Parents and Teachers (Sp) 3
SPED 5070 Policies and Procedures in Special Education (F) 3
SPED 5200 (CI)[2] Student Teaching in Special Education (F or Sp) 15
SPED 5510 Curriculum for Students with Severe Disabilities (F) 4
SPED 5520 Curriculum for Secondary-Level Students with Severe Disabilities (Sp) 3
SPED 5600 Practicum: Introduction to Instruction of Students with Severe Disabilities (F) 3
SPED 5610 Practicum: Advanced Systematic Instruction of Students with Severe Disabilities (Sp) 4

Birth to Age 5 Certificate (46 credits)
Students who are completing this certificate in addition to the Mild/Moderate Disabilities Endorsement or the Severe Disabilities Endorsement will need to complete only those courses which they have not already taken under their endorsement.[3]

SPED 5010 (QI) Applied Behavioral Analysis 1: Principles, Assessment, and Analysis (F) 3
SPED 5040 Foundations of Effective Assessment and Instructional Practices (F) 3
SPED 5050 Applied Behavioral Analysis 2: Applications (Sp) 3
SPED 5060 Consulting with Parents and Teachers (Sp) 3
SPED 5070 Policies and Procedures in Special Education (F) 3
SPED 5200 (CI)[2] Student Teaching in Special Education (F or Sp) 15
SPED 5710 Young Children with Disabilities: Characteristics and Services (Sp) 3
SPED 5730 Intervention Strategies for Young Children with Disabilities (F) 3
SPED 5810 Seminar and Field Experiences with Infants and Families (Sp) 4
SPED 5820 Preschool Practicum with Young Children with Disabilities in Community Environments (F) 4
SPED 5840 Seminar: Preschool Practicum with Young Children with Disabilities (F) 2

[1] After acceptance to the Special Education major and before beginning the Special Education practica, students are required to complete a background check for conviction of violating any law (except traffic violations).
[2] SPED 5200 should be taken during the senior year.
[3] Students working toward the Birth to Age 5 Certificate are encouraged to complete either the mild/moderate disabilities endorsement or the severe disabilities endorsement, as well as courses included in the Birth to Age 5 Certificate. For additional information, see the special education advisor.

Assessment and Accreditation

Information about assessment within the Department of Special Education and Rehabilitation, as well as information about NCATE and CORE accreditation, can be found at:
http://sped.usu.edu/accreditation/index.html

Department of Special Education and Rehabilitation

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Additional Information

For more information concerning Bachelor of Science or Bachelor of Arts requirements and the sequence in which courses should be taken, see major requirement sheets available from the Department of Special Education and Rehabilitation (Education 313) or the Special Education Advising Office (Education 107). Requirement sheets can also be accessed online at: **http://www.usu.edu/ats/majorsheets/**

Financial Support

Scholarships, assistantships, grants-in-aid, and work-study programs are available through the University. In addition, there are some endowed scholarships available through the department and, sometimes, there are stipends available from federal grants.

Graduate Programs

Admission Requirements

Admission decisions are made by the department's Graduate Program Committee. Admission requirements are based upon those of the School of Graduate Studies (see pages 93-94). In addition, the committee considers experience, academic record and curriculum, formal recommendations, and test scores. To be considered for admission to the master's degree programs, applicants must submit either GRE or Miller Analogies Test scores. Doctoral program admission requires GRE scores. Students applying for admission to special education graduate programs, who do not have an undergraduate special education background, may be required to complete selected undergraduate courses prior to admission as fully-matriculated graduate students.

Applicants for the Rehabilitation Counseling and doctoral programs are screened throughout the year by the Graduate Program Committee. Applicants for the Special Education Master's program are reviewed on March 15, June 15, and October 15. Only complete files will be reviewed. Applications received after these dates will be considered, but opportunities for financial assistance may be limited. No applications will be considered until all required information arrives at the School of Graduate Studies office.

Teaching Licenses

The department prepares students for licensure as teachers of students with mild/moderate disabilities, students with severe disabilities, and preschool-age students with disabilities. Licensure may also be obtained in visual and/or hearing impairments through a multi-university consortium program. Licensure may be obtained as part of the graduate degree program or without a graduate degree.

Degree Programs

Master of Science in Special Education (MS)

The Master of Science degree program is designed for persons who desire to improve their teaching skills and who are contemplating an advanced degree beyond a master's degree. Generally speaking, MS theses differ from MEd creative projects in that they involve experimental research. That is, a study is designed to determine the relationship between an independent variable (i.e., an intervention or treatment) and a dependent variable (i.e., a target behavior). The intent of such research is to contribute knowledge to the field of special education. A minimum of 36 credits, including a thesis, is required for the MS degree.

Master of Education in Special Education (MEd)

The Master of Education degree program is designed for persons who desire a graduate program that will help them improve their competencies as educators. This includes school personnel, as well as individuals who are involved in education-related activities across a variety of community, work, and clinical settings. The MEd degree focuses on refining school practices in terms of instruction and management practices, legal requirements, and professional collaboration. All candidates must complete a creative project. A minimum of 36 credits, including a creative project, is required for the MEd degree.

Master of Rehabilitation Counseling (MRC)

The Master of Rehabilitation Counseling prepares persons with the basic competencies to provide rehabilitation counseling to a broad range of individuals with disabilities in a variety of settings, such as state rehabilitation agencies, independent living centers, rehabilitation hospitals, private rehabilitation facilities and agencies, employment assistance programs, and private industry. The degree is a 48-credit program consistent with the requirements of the Council on Rehabilitation Education (CORE). The Rehabilitation Counseling Program has a limited number of scholarships funded through the U.S. Department of Education, Rehabilitation Services Administration. These scholarships require a postgraduate commitment to work for a not-for-profit agency serving the needs of individuals with disabilities for two years for every year of scholarship received.

Educational Specialist Program (EdS)

The educational specialist degree is designed for advanced graduate students seeking instruction beyond a master's degree. Programs are individually planned to address specific student needs. Completion of the EdS program is based on completion of required coursework, submission of a research proposal to a supervisory committee, and satisfactory defense of the research project.

Doctor of Philosophy in Disability Disciplines (PhD)

The PhD program prepares leadership personnel for positions in research and university programs.

Department of Special Education and Rehabilitation

Completion of the PhD program certifies competence in the three following areas: (1) mastery of the theoretical and applied content required for providing appropriate services for persons with disabilities (infants and toddlers, children, youth, and/or adults), (2) ability to conduct independent research with particular emphasis on topics related to persons with disabilities, and (3) ability to effectively teach audiences of varying sophistication and expertise and to supervise the delivery of special education, rehabilitation, or other services.

Doctorate of Education (EdD)

The department participates in the College of Education and Human Services Interdepartmental Doctorate of Education (EdD) degree program. The general purpose of the special education emphasis area of the EdD program is to prepare leadership personnel for positions in administration, supervision, curriculum development, and teacher training. For information about areas of specialization, emphases of study, research sponsored, admission requirements, procedures to follow, and other information, see pages 223-224 of this catalog.

Financial Assistance

Acceptance of a student to a graduate program is independent of financial aid. Financial assistance available through the School of Graduate Studies includes University fellowships, scholarships, and fee waivers. Further, federal grants to the faculty members often provide stipends and assistantships for doctoral students.

Additional Information

Graduate handbooks outlining the graduate programs, policies, and procedures in the Department of Special Education and Rehabilitation may be obtained from the department office in room 313 of the Education Building.

For more information about graduate requirements and the sequence in which courses should be taken, see major requirement sheets, available from the department.

Graduation requirements described in this catalog are subject to change. Students should check with the department concerning possible changes.

Because the Special Education and Rehabilitation graduate programs occasionally undergo fine-tuning and updating, prospective students are advised to check the departmental website at:
http://sped.usu.edu

Special Education and Rehabilitation Faculty

Professors
Alan M. Hofmeister, technology, school reform, reading and math instruction
Benjamin Lignugaris/Kraft, personnel preparation, secondary special education, social/vocational skill training, behavioral analysis, instructional design and program development
Sarah Rule, early intervention, developmental disabilities, technology and teacher education
Charles L. Salzberg, applied behavioral analysis, single-subject research design, research on teacher training, employment preparation for persons with disabilities, video assisted training programs, paraeducator training, and students with disabilities in higher education
Julie F. Smart, rehabilitation counseling, disability studies, Hispanics with disabilities, Spanish translation of rehabilitation instruments, multicultural rehabilitation
Richard P. West, behavior analysis in education, computer-based decision making, parent training, school organization and administration
Karl R. White, research and evaluation, early intervention

Adjunct Professor
K. Richard Young, behavior disorders, behavior analysis, social skills

Professors Emeritus
Garth M. Eldredge, rehabilitation counseling
Marvin G. Fifield, evaluation of persons with emotional disturbances

Associate Professors
Judith M. Holt, early childhood and visually impaired
Pamela J. Hudson, adolescents with mild disabilities, mathematics
Robert L. Morgan, behavior analysis/transition
Timothy A. Slocum, reading, mild/moderate disabilities, behavior analysis, research methods

Research Associate Professor
Marilyn Likins, paraeducators, mild and moderate disabilities, alternative teacher preparation

Adjunct Associate Professor
Daniel P. Morgan, behavior disorders, social skills, legal issues in special education, personnel development in special education

Associate Professors Emeritus
Hyrum S. Henderson, teacher training
Devoe C. Rickert, vocational training

Assistant Professors
David E. Forbush, mild/moderate disabilities, reading, behavior analysis in schools, assessment, educational systems change, educational leadership
Thomas S. Higbee, early childhood, severe disabilities, autism
Timothy N. Tansey, rehabilitation, counseling, administration, employment training

Research Assistant Professors
Cynthia J. Rowland, distance education, speech and language development, naturalistic instructional methods, early literacy, assistive technology
Jared Schultz, rehabilitation counseling

Extension Assistant Profesor
Nancy K. Glomb, special education teacher education, distance education, legal issues, behavior disorders, collaboration

Adjunct Assistant Professors
David W. Bush, psychological, assessment, counseling
Julie Landeen, legal issues in special education, special education administration
Sharon Neyme, students at-risk
Ginger Rhode, legal issues in special education, behavior analysis
Kathleen Robins, multi-sensory disabilities
Randyl Schelble, mild and moderate disabilities

Clinical Instructors
Barbara J. Fiechtl, preschool and infant service delivery
Kimberly H. Snow, curriculum development

Department of Special Education and Rehabilitation

Adjunct Clinical Instructors
Kirk Allen, emotionally disturbed, special education administration
Gayle Baker, severe disabilities
Jerry Christensen, personnel development, special education leadership
Marlene Deer, clinical early childhood
Glenn Dyke, behavior disorders, mild and moderate disabilities
AnnaLee Hansen, mild and moderate disabilities
Melanie Jones, mild and moderate disabilities
Susanne Kuresa, behavior disorders, classroom management
Martell Menlove, special education administration
Cindy Myers, moderate and severe disabilities, alternative teacher preparation
Lois Naegele, American Sign language, deaf culture, rehabilitation counseling
Bruce Schroeder, collaboration, special education administration, special education personnel development
Patricia B. Willis, learning disabilities, early literacy

Clinical Instructor Emeritus
Joan F. Forsgren-White

Course Descriptions

Special Education (SPED), pages 602-606
Rehabilitation Counseling (REH), pages 591-592

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Phone: (435) 797-3046
FAX: (435) 797-0086
E-mail: luannh@hass.usu.edu
WWW: http://www.usu.edu/theatre

Undergraduate Advisors:
General Theatre Arts Studies Program:
Colin B. Johnson, Fine Arts Center 232, (435) 797-3046, colin.johnson@usu.edu
Theatre Design and Technology Emphasis:
Bruce L. Duerden, Fine Arts Center 148, (435) 797-3026, bruced@hass.usu.edu
Acting Emphasis:
Lynda Linford, Fine Arts Center 226A, (435) 797-3050, llinford@hass.usu.edu
Theatre Education Emphasis:
David E. Sidwell, University Reserve 125, (435) 797-3703, dsidwell@hass.usu.edu

Graduate Program Coordinator:
Nancy E. Hills, Fine Arts Center 229A, (435) 797-3049, nhills@hass.usu.edu

Degrees offered: Bachelor of Arts (BA), Bachelor of Fine Arts (BFA), Master of Arts (MA), and Master of Fine Arts (MFA) in Theatre Arts

Undergraduate programs: *BA*—General Theatre Arts Studies (History and Dramatic Literature); *BFA*—Acting; Theatre Design and Technology (costume design, lighting design, scenic design, stage management, theatre technology); and Theatre Education

Graduate specializations: *MFA*—Advanced Technical Practice, Design (scenery, costume, lighting)

Undergraduate Programs

Objectives

The primary mission of the Department of Theatre Arts is to offer a flexible program with the following objectives:

1. To prepare students for professional work in performance, various types of theatre design, and technical practice with producing theatre organizations;

2. To teach appreciation and service courses contributing to the University Studies Program;

3. To prepare students for careers as theatre instructors in secondary schools and to provide service courses in support of the language arts curriculum of the State of Utah for elementary education majors;

4. To prepare students for advanced study and training;

5. To sponsor public performances in which students can practice the art and craft of theatre and interpretive/narrative performance. These productions will enhance the cultural life of the University community and region.

Production Groups and Theatres

The Theatre Arts Department sponsors the following production groups and divisions: Utah State Theatre, Old Lyric Repertory Company (summer), Studio/Conservatory Stage Series, Narrative Theatre, and Utah State Children's Theatre. Facilities used for performances by these groups include a 660-seat thrust stage in the Chase Fine Arts Center, the 380-seat proscenium Lyric Theatre in downtown Logan, and the flexible 80-seat Studio Stage. Facilities also include a costume shop, scenery shop, sound studio, design studio, dance and movement laboratory, and storage areas.

Requirements

Departmental Admission and Scholarship Requirements

Admission requirements are the same as those described for the University on pages 16-19. Students in good standing may apply for admission or transfer to the program. Students transferring into the department must have a minimum 2.75 GPA (on a scale of 4.0) regardless of credit amount transferred. Students are encouraged to declare a theatre arts major early and consult an advisor as soon as they arrive on campus, as the professional BFA degree requires a minimum of three full years to complete. Admission to specialized BFA programs by audition, interview, or portfolio review, subsequent to admission to the department, is explained below. Students must maintain an average 2.75 minimum GPA in all theatre classes required for graduation. No grade of less than a *C-* is accepted in any theatre class, and no required classes, regardless of department, may be taken on a pass-fail basis.

Required Core Courses (15 credits)

All Theatre Arts majors are required to complete the following core courses:
THEA 1210 Introduction to Playscript Analysis (Sp) 3
THEA 1400 Beginning Acting (F, Sp) 3
THEA 1500 Stage and Costume Crafts (F, Sp) 3
THEA 2410 Directing (F, Sp) 3
THEA 3230 Survey of Western Theatre (F) 3
Entering and transfer students must attend a noncredit theatre orientation seminar. In addition, all students must complete a minimum of 6 credits of production practicum work:

Required Practicum Courses (6 credits)

Theatre Arts majors and minors should expect to work on Utah State Theatre and studio productions as a crew member nearly every semester. All Theatre Arts majors, **except** for the BFA with the Theatre Education emphasis, are required to complete the following production work requirements (6 credits). Only 1 credit may be taken per assignment in a given semester (45 clock hours per term or until assignment is completed).
THEA 2750/4750 Production Practicum: Scenery (F, Sp, Su) 1
THEA 2750/4750 Production Practicum: Lighting (F, Sp, Su) 1
THEA 2750/4750 Production Practicum: Properties (F, Sp, Su) 1
THEA 2750/4750 Production Practicum: Costumes (F, Sp, Su) 1
THEA 2750/4750 Production Practicum: Publicity (F, Sp, Su) 1
THEA 2750/4750 Production Practicum: Run Crew (F, Sp, Su)..... 1

Transfer students' transcripts will be evaluated and a prorated production work requirement will be set at the time of admission to the program. Additional production work is required under some degree plans.

Bachelor of Arts Degree

A Bachelor of Arts degree in the **General Theatre Arts Studies Program** requires 60 credits. Requirements are as follows: core

courses and production work (21 credits); performance courses (9 credits); design/technical courses (3 credits); dramatic literature/history courses (15 credits); and a university minor (12 credits). To obtain a Bachelor of Arts degree, a student must fulfill the language requirement (see page 55). All students declaring a Theatre Arts major are enrolled in the BA program until they audition or interview for one of the BFA tracks. The BA degree is recommended for students interested in pursuing careers in stage directing, especially in a graduate program. In lieu of a senior project, students in this program must select a minor in consultation with their advisor, and fulfill all requirements for the minor selected.

General Theatre Arts Studies Program (THEA) BA Degree in Theatre Arts (60 credits) (2.75 GPA)

Language Requirement (see University graduation requirements)

Required Theatre Arts Department Core Courses (15 credits)

Required Practicum Courses (6 credits)

Required Performance Courses (select 9 credits minimum)
THEA 1430 Movement for Actors I (F, Sp) 3
THEA 2420 Intermediate Acting: Scene Study (F, Sp) 3
THEA 2430 Movement for Actors II (F, Sp) 3
THEA 2440 Introduction to Dance for Theatre: Jazz, Ballet, and Tap (F) 3
THEA 2470 Movement: Stage Combat (F, Sp) 3
THEA 2480 Intermediate Voice for Theatre (Sp) 3
THEA 2490 Intermediate Acting: Shakespeare (Sp) 3
THEA 2740 Performance Practicum (F, Sp) (1cr, repeatable) **or**
THEA 4740 Advanced Performance Practicum (F, Sp) (1-2 cr, repeatable) 1-2
THEA 3400 Mask Building and Performance (F, Sp) 3
THEA 3410 Dance for Theatre: Tap (F, Sp) 3
THEA 3420 Dance for Theatre: Jazz (F, Sp) 3
THEA 3440 Dance for Theatre: Ballet (F, Sp) 3
THEA 5410 Advanced Directing (F, Sp) 3
THEA 5420 Advanced Acting: Absurdists (F, Sp) 3
THEA 5430 Advanced Acting: Acting for the Camera (F, Sp) 3
THEA 5440 Advanced Acting: Musical Theatre Auditions (F, Sp) 3
THEA 5470 Advanced Acting: Modern Methods (F, Sp) 3

Required Design Courses (select 3 credits minimum)
THEA 2540 Lighting Design (F, Sp) 3
THEA 3050 (DHA) Period Styles (Sp) 3
THEA 3510 Scene Design (F, Sp) 3
THEA 3520 Stage Costume Design (F, Sp) 3
THEA 3570 (DHA) Historic Costume for the Stage (F) 3

Required Dramatic Literature/History Courses (9 credits)
ENGL 2030 (BHU) Introduction to Shakespeare (F) 3
THEA 5240 (DHA/CI) Contemporary Theatre (F,Sp) 3
THEA 5290 Special Topics in Theatre History and Literature (F, Sp) 3

Elective Dramatic Literature/History Courses (select 6 credits minimum)
ENGL 3030 (DHA) Perspectives in Literature (F, Sp, Su) 3
ENGL 4300 Shakespeare (F, Sp) 3
THEA 5250 Playwriting Company Workshop (Sp) 3
THEA 5270 Performance Theory and Criticism (Sp) 3
THEA 5290 Special Topics in Theatre History and Literature (a different topic than taken for required credit) (F, Sp) 3

Required Minor (12 credits)
Since the study of theatre requires an understanding of many different fields of human endeavor, students majoring in Theatre Arts must select a minor in consultation with their advisor. Students are encouraged to select a minor that will broaden their knowledge of the world, as well as strengthen their practice of theatre.

General Theatre Studies Minor (18 credits) (2.75 GPA)

Note: Transcripts will list this minor as Theatre Arts Minor.

The General Theatre Studies Minor is available to all students. Students enrolled in this minor must submit a resume and/or production history of their theatre work to date. Progress will be reviewed on an annual basis.

Required Theatre Arts Courses (15 credits)
THEA 1210 Introduction to Playscript Analysis (Sp) 3
THEA 1400 Beginning Acting (F, Sp) 3
THEA 1500 Stage and Costume Crafts (F, Sp) 3
THEA 2410 Directing (F, Sp) 3
THEA 3230 Survey of Western Theatre (F) 3

Elective Production Courses (3 credits)
Complete three performance or production practicum courses, to be determined in consultation with Theatre Arts advisor.
THEA 2740/4740 Performance Practicum (F, Sp) (1-2 cr, repeatable) **or**
THEA 2750/4750 Production Practicum (F, Sp) (1-3 cr, repeatable) 3

Bachelor of Fine Arts Degree

Program Entrance Requirements

Students seeking the BFA degree who choose the Acting Emphasis or the Theatre Design and Technology Emphasis will be admitted by audition or an interview and portfolio review. Periodic audition and review will be undertaken to determine good standing in these programs.

This degree is highly recommended for those students desiring more intensive preprofessional training in their selected discipline. Students in these programs also complete a capstone recital or project during their senior year.

Acting Emphasis (AE) (78 Credits) (2.75 GPA) BFA Degree in Theatre Arts

Candidates are accepted into this performance program through an audition and interview conducted by a BFA committee. Progress and retention in this emphasis is monitored through periodic recitals/auditions before the same body, and students must maintain *B* or better grades in all performance courses. All students in the Acting Emphasis must perform a recital during their senior year. Transfer students are subject to the same acceptance process and progress review. Inquiries about specific requirements and expectations should be directed to the Theatre Arts Office.

Students seeking the BFA degree must work closely with advisors. Most University Studies courses and the core curriculum should be completed before the end of the sophomore year, as training is conducted in a manner adapted from conservatory practice. Individual needs, interests, and goals of the student are taken into consideration for selection of elective courses.

Required Theatre Arts Department Core Courses (15 credits)

Required Practicum Courses (6 credits)

Required Performance Courses (23 credits)
THEA 1430 Movement for Actors I (F, Sp) 3
THEA 1450 Beginning Voice (F) 3
THEA 2420 Intermediate Acting: Scene Study (F, Sp) 3
THEA 2440 Introduction to Dance for Theatre: Jazz, Ballet, and Tap (F) 3
THEA 2480 Intermediate Voice for Theatre (Sp) 3
THEA 2490 Intermediate Acting: Shakespeare (F,Sp) 3
THEA 2740 Performance Practicum (F, Sp) (1 cr, repeatable) **or**
THEA 4740 Advanced Performance Practicum (F, Sp) (1-2 cr, repeatable) 5

Elective Performance Courses (select 6 credits minimum)
THEA 5400 Advanced Acting: Turn of the Twentieth Century (F, Sp) ... 3
THEA 5420 Advanced Acting: Absurdists (F, Sp) 3
THEA 5430 Advanced Acting: Acting for the Camera (F, Sp) 3
THEA 5440 Advanced Acting: Musical Theatre Auditions (F, Sp) 3
THEA 5450 Advanced Acting: Restoration and Greek (F, Sp) 3
THEA 5470 Advanced Acting: Modern Methods (F, Sp) 3

Elective Movement Courses (select 6 credits minimum)
THEA 2430 Movement for Actors II (F, Sp) 3
THEA 2470 Movement: Stage Combat (F, Sp) 3
THEA 3400 Mask Building and Performance (F, Sp) 3
THEA 3410 Dance for Theatre: Tap (F, Sp) 3
THEA 3420 Dance for Theatre: Jazz (F, Sp) 3
THEA 3440 Dance for Theatre: Ballet (F, Sp) 3

Elective Voice/Workshop Courses (select 6 credits minimum)
THEA 3450 Dialects (F, Sp) 3
THEA 4400 Company Workshop (F, Sp) 3
THEA 4450 Advanced Voice for Theatre (Sp) 3
THEA 5410 Advanced Directing (F, Sp) 3

Required Design/Technical Course (2 credits)
THEA 1530 Stage Makeup (F, Sp) 2

Elective Theatre History/Literature (select 12 credits minimum)
THEA 4250 Playwriting (F) 3
THEA 5240 (DHA/CI) Contemporary Theatre (F,Sp) 3
THEA 5250 Playwriting Company Workshop (Sp) 3
THEA 5270 Performance Theory and Criticism (Sp) 3
THEA 5290 Special Topics in Theatre History and Literature (repeatable for credit, if different topics) (F, Sp) 3
ENGL 2030 (BHU) Introduction to Shakespeare (F) 3
ENGL 3030 (DHA) Perspectives in Literature (F, Sp, Su) 3

BFA Acting Recital/Capstone (2 credits)
All BFA Acting Emphasis majors must perform a recital during their senior year. Recital material is to be selected and approved during the spring semester of the junior year, including submission of a written proposal. Students must be enrolled in THEA 5910 for 2 credits during the semester in which the recital is to be presented.

Recitals should be 45-60 minutes in duration and may be individual or combined efforts on the part of not more than two candidates (combined efforts must be approved by the BFA committee). Upon approval of the advisor, an individual performer may recruit no more than two additional performers. All BFA candidates are required to attend recitals.

Required Acting Recital
THEA 5910 Senior Project (BFA Performance Recital) (F, Sp) 2

Theatre Performance Minor (18 credits) (2.75 GPA)

Note: Transcripts will list this minor as Theatre Arts Minor.

The Theatre Performance Minor is available to all students. Students enrolled in this minor must submit a resume and/or production history of their theatre work to date. Progress will be reviewed on an annual basis.

Required Theatre Arts Courses (9 credits)
THEA 1210 Introduction to Playscript Analysis (Sp) 3
THEA 1400 Beginning Acting (F, Sp) 3
THEA 2740/4740 Performance Practicum (1-2 cr, repeatable) (F, Sp) . 3

Elective Performance Courses (9 credits)
Complete three or more classes from the BFA Acting Emphasis (AE) course of study, to be determined in consultation with Theatre Arts advisor.

Theatre Design and Technology Emphasis (TDE) (74-77 credits) (2.75 GPA) BFA Degree in Theatre Arts

Candidates are accepted into the design and technology emphasis by interview and review of a portfolio by a BFA committee. Progress and retention in this emphasis is monitored by an annual review/interview with the BFA Design Committee. Students must maintain *B* or better grades in all design/technical courses. All students in the Design/Technical Emphasis must complete a final project during their senior year. Students may further specialize in costume design, lighting design, scenic design, stage management/technician, or theatre technology.

Required Theatre Arts Department Core Courses (15 credits)

Required Practicum Courses (6 credits)

Required Design/Technical Courses (17 credits)
THEA 1530 Stage Makeup (F, Sp) 2
THEA 2540 Lighting Design (F, Sp) 3
THEA 3050 (DHA) Period Styles (Sp) 3
THEA 3510 Scene Design (F, Sp) 3
THEA 3520 Stage Costume Design (F, Sp) 3
THEA 3570 (DHA) Historic Costume for the Stage (F) 3

Required Performance Courses (select 3 credits minimum)
THEA 2420 Intermediate Acting: Scene Study (F, Sp) 3
THEA 2490 Intermediate Acting: Shakespeare (Sp) 3
THEA 5400 Advanced Acting: Turn of the Twentieth Century (F, Sp) ... 3
THEA 5420 Advanced Acting: Absurdists (F, Sp) 3
THEA 5450 Advanced Acting: Restoration and Greek (F, Sp) 3

Required Dramatic Literature/History Courses (select 6 credits minimum)
THEA 4250 Playwriting (F) 3
THEA 5240 (DHA/CI) Contemporary Theatre (F,Sp) 3
THEA 5250 Playwriting Company Workshop (Sp) 3
THEA 5270 Performance Theory and Criticism (Sp) 3

THEA 5290 Special Topics in Theatre History and Literature (repeatable for credit, if different topics) (F, Sp) 3
ENGL 2030 (BHU) Introduction to Shakespeare (F) 3
ENGL 3030 (DHA) Perspectives in Literature (F, Sp, Su) 3

BFA Design and Technology Senior Project/Capstone Requirements (2 credits)
All BFA majors in the Theatre Design and Technology emphasis must complete a project during their senior year. The project is to be selected and approved spring semester of the junior year, including submission of a written proposal.

Students must be enrolled in THEA 5910 for 2 credits during the semester in which the project is presented. The project will be to design the settings, costumes, lights, or technical direction for a Studio Stage or Mainstage production.
THEA 5910 Senior Project (F, Sp) 2

Specialized Area Requirements (25-28 credits)
Note: Student transcripts will show Theatre Design and Technology Emphasis (TDE) *not* one of the specialized areas listed below.

Costume Design
Required Theatre Design/Technical Courses (13 credits)
THEA 4520 Advanced Costume Design (F, Sp) 3
THEA 4750 Advanced Production Practicum: Costumes (F, Sp, Su) 1
THEA 5750 Repertory Theatre Production (Su) (2-8 cr, repeatable) **or**
THEA 5900 Special Projects: Project in Theatre/Internship (F, Sp, Su) (1-4 cr, repeatable) 3
THEA 5950 Rendering and Painting for the Theatre (F, Sp) 3
ART 2720 (BHU) Survey of Western Art: Renaissance to Post-Modern (Sp) 3

Elective Art Courses (select 12 credits minimum)
ART 1100 (BCA) Exploring Art (F) 3
ART 1110 Drawing I (F,Sp) 3
ART 2140 Drawing II (Sp) 3
ART 2200 Painting I (F) 3
ART 3260 Anatomy for Artists (F) 3
FCSE 2040 Clothing Production Principles (F,Sp) 3
FCSE 3040 Advanced Clothing Production Principles (F,Sp) 3
THEA 5590 Design Studies for Theatre (F,Sp) 2

Lighting Design
Required Theatre Design/Technical Courses (19 credits)
THEA 2510 Scene Painting/Properties (F,Sp) 3
THEA 4540 Advanced Lighting Design (Sp) 3
THEA 4750 Advanced Production Practicum: Lighting (F,Sp,Su) 4
THEA 5510 Computer-Aided Design for Theatre (F) 3
THEA 5750 Repertory Theatre Production (Su) (2-8 cr, repeatable) **or**
THEA 5900 Special Projects: Project in Theatre/Internship (F, Sp, Su) (1-4 cr, repeatable) 3
THEA 5950 Rendering and Painting for the Theatre (F, Sp) 3

Elective Technology Courses (select 3 credits minimum)
ART 2800 Introduction to Photography (F) 3
ART 2810 Photography I (F, Sp) 3
ETE 2240 Analog Devices and Circuits (F) 3
ETE 2300 (QI) Electronic Fundamentals (F, Su) 4
ETE 2310 AC/DC Circuits (Sp) 2
ETE 2360 Digital Circuits (Sp) 3
THEA 2560 Theatre and Studio Sound (F, Sp) 3
THEA 4480 Theatre Leadership and Management (Sp) 3
THEA 5590 Design Studies for Theatre (F, Sp) 2

Elective Art Courses (select 3 credits minimum)
ART 1100 (BCA) Exploring Art (F) 3
ART 1110 Drawing I (F, Sp) 3
ART 1120 Two-dimensional Design (F, Sp) 3
ART 1130 Three-dimensional Design (F, Sp) 3
ART 2200 Painting I (F) 3
ART 2400 Computers and Art (Sp) 3

Scenic Design
Required Theatre Design/Technical Courses (16 credits)
THEA 2510 Scene Painting/Properties (F, Sp) 3
THEA 4510 Advanced Scene Design (F, Sp) 3
THEA 4750 Advanced Production Practicum (additional) (F, Sp, Su) 1
THEA 5510 Computer-Aided Design for Theatre (F) 3
THEA 5750 Repertory Theatre Production (Su) (2-8 cr, repeatable) **or**
THEA 5900 Special Projects: Project in Theatre/Internship (F, Sp, Su) (1-4 cr, repeatable) 3
THEA 5950 Rendering and Painting for the Theatre (F, Sp) 3

Elective Art Courses (select 9 credits minimum)
ART 1100 (BCA) Exploring Art (F) 3
ART 1110 Drawing I (F,Sp) 3
ART 2140 Drawing II (Sp) 3
ART 2200 Painting I (F) 3
ART 2400 Computers and Art (Sp) 3
THEA 5590 Design Studies for Theatre (F,Sp) 2

Stage Management/Technician
Required Theatre Design/Technical Courses (16 credits)
THEA 2510 Scene Painting/Properties (F,Sp) 3
THEA 2550 Stage Management (F,Sp) 3
THEA 2560 Theatre and Studio Sound (F,Sp) 3
THEA 4750 Advanced Production Practicum (F,Sp,Su) 4
THEA 5750 Repertory Theatre Production (Su) (2-8 cr, repeatable) **or**
THEA 5900 Special Projects: Project in Theatre/Internship (F,Sp,Su) (1-4 cr, repeatable) 3

Elective Courses (select 10 credits minimum)
ECE 1010 Introduction to Electrical and Computer Engineering (F) 2
ECE 2410 Electrical Circuits (F,Sp) 4
ECE 3260 (DSC/QI) Science of Sound (F) 3
HEP 2000 First Aid and Emergency Care (F,Sp) 2
MHR 1160 Developing Self-Management Skills (F,Sp,Su) 1
MHR 2350 Small Business Management (Sp) 3
MHR 3110 (DSS) Managing Organizations and People (F,Sp) 3
MHR 3710 Developing Team and Interpersonal Skills (F,Sp) 3
MUSC 1010 (BCA) Introduction to Music (F,Sp,Su) 3
MUSC 1020 (BCA) Fundamentals of Music (F, Sp) 3
THEA 4480 Theatre Leadership and Management (Sp) 3
THEA 5510 Computer-Aided Design for Theatre (F) 3
THEA 5590 Design Studies for Theatre (F,Sp) 2

Elective Technology Courses (select 6 credits minimum)
ETE 1040 Construction and Estimating (Sp) 3
ETE 1200 Computer-Aided Drafting and Design (F,Sp,Su) 3
ETE 1640 Introduction to Welding (F) 3
ETE 2850 Statics and Strength of Materials (F) 3
THEA 4480 Theatre Leadership and Management (Sp) 3

Theatre Production Minor (18 credits) (2.75 GPA)

Note: Transcripts will list this minor as Theatre Arts Minor.

The Theatre Production Minor is available to all students. Students enrolled in this minor must submit a resume and/or production history

of their theatre work to date. Progress will be reviewed on an annual basis.

Required Theatre Arts Courses (9 credits)
THEA 1210 Introduction to Playscript Analysis (Sp) 3
THEA 2410 Directing (F, Sp) 3
THEA 2750/4750 Production Practicum (F, Sp, Su) (1-3 cr, repeatable) 3

Elective Production Courses (9 credits)
Complete three or more classes from the BFA Theatre Design and Technology Emphasis (TDE) course of study, to be determined in consultation with Theatre Arts advisor.

Theatre Education Emphasis (79 credits)

Candidates are accepted into the theatre education emphasis by interview and a review of a portfolio by the theatre education committee. Students earning a secondary education license must complete 35 additional credits in the Secondary Teacher Education Program (STEP), as well as an academic minor approved by the College of Education and Human Services. All majors desiring a teaching license must apply for admission to teacher education; it is recommended that this be done no later than the beginning of the sophomore year. Progress and retention in this emphasis requires a 2.75 GPA for admission to the STEP. All students in the Theatre Education Emphasis must complete a senior project.

Required Theatre Arts Department Core Courses (15 credits)

Theatre Education Courses (6 credits)
THEA 5340 Theatre Production Methods for Educators (Sp) 3
THEA 5360 Drama in the Secondary Education Classroom: Grades 7-12 (Sp) 3

Theatre History Courses (select 3 credits)
THEA 4250 Playwriting (F) 3
THEA 5240 (DHA/CI) Contemporary Theatre (F,Sp) 3
THEA 5270 Performance Theory and Criticism (Sp) 3
THEA 5290 Special Topics in Theatre History and Literature (F, Sp) 3
ENGL 2030 (BHU) Introduction to Shakespeare (F) 3
ENGL 4300 Shakespeare (F, Sp) 3

Theatre Performance Courses (select 6 credits minimum)
THEA 1030 (BHU) Exploring Performance Through Aesthetic Texts (F, Sp, Su) 3
THEA 1430 Movement for Actors I (F, Sp) 3
THEA 2420 Intermediate Acting: Scene Study (F, Sp) 3
THEA 2430 Movement for Actors II (F, Sp) 3
THEA 2440 Introduction to Dance for Theatre: Jazz, Ballet, and Tap (F) 3
THEA 2490 Intermediate Acting: Shakespeare (Sp) 3
THEA 3410 Dance for Theatre: Tap (F, Sp) 3
THEA 3420 Dance for Theatre: Jazz (F, Sp) 3
THEA 3440 Dance for Theatre: Ballet (F, Sp) 3
THEA 4030 Storytelling (F, Sp, Su) 3
THEA 4400 Company Workshop (F, Sp) 3
THEA 5410 Advanced Directing (F, Sp) 3
THEA 5470 Advanced Acting: Modern Methods (F, Sp) 3

Theatre Performance Practicum Courses (select 2 credits)
THEA 4740 Advanced Performance Practicum (F, Sp) (1-2 cr, repeatable) 1-2
THEA 5310 Theatre Mentorship and Service (F, Sp, Su) (1-3 cr, repeatable) 1-3

Theatre Design/Technical Courses (select 6 credits minimum)
THEA 1530 Stage Makeup (F, Sp) 2
THEA 2540 Lighting Design (Required) (F, Sp) 3
THEA 2550 Stage Management (F, Sp) 3
THEA 3510 Scene Design (F, Sp) 3
THEA 3520 Stage Costume Design (F, Sp) 3
THEA 4480 Theatre Leadership and Management (Sp) 3

Theatre Production Practicum Courses (select 5 credits minimum; 3 credits *must* be upper division)
THEA 2750 Production Practicum (F, Sp, Su) (1 cr, repeatable) 1-2
THEA 4750 Advanced Production Practicum (F, Sp, Su) (1-3 cr, repeatable) 1-3

BFA Theatre Education Senior Project/ Capstone Requirements
During their senior year, students in the Theatre Education emphasis must complete a project chosen from among the following options, as approved by their advisor and one additional faculty member. The project may be developed in conjunction with student teaching to be assessed through THEA 5390, Student Teaching Seminar; or must be chosen from one of the following options: (1) a BFA design or technical Senior Project, subject to the same guidelines; (2) a BFA Performance Recital, subject to the same guidelines; or (3) directing a studio one-act play or independent production. Project material must be selected and approved during the spring semester of the junior year, including submission of a written proposal. If the project is *not part of student teaching*, students must be enrolled in THEA 5910 for 2 credits during the semester in which the recital is to be presented. These credits will be ***in addition*** to the 44 credits required for the Theatre Education emphasis.

Required Senior Courses
THEA 5390 Student Teaching Seminar (taken in conjunction with STEP Program) (F, Sp) 2
THEA 5910 Senior Project (F, Sp) 2

Secondary Teacher Education Program (STEP) (35 credits) (2.75 GPA)
The Secondary Teacher Education Program (STEP) prepares and licenses students to teach in public secondary schools. The program consists of three successive semesters of education courses, culminating in supervised student teaching in both the major and minor subject areas.

The STEP requires admission to the Secondary Education Department, College of Education and Human Services. Information about the program, including admission requirements, approved minor subject areas, and the three-semester course sequence, can be found at the Secondary Education website: **http://www.coe.usu.edu/seced**

Minor Teaching Subject Area (Required) (approximately 20-30 credits, depending on subject)
Students must complete a University-approved teaching minor.

Theatre Arts Teaching Minor (29 credits) (2.75 GPA)

The Theatre Arts Teaching Minor is an approved teaching minor for Secondary Education students majoring in other subject areas. Students enrolled in this minor must submit a portfolio that includes their diverse theatre experiences to date. This portfolio is used for advising purposes, as well as for scholarship consideration. **The portfolio is required for entrance into the STEP Program**, and USOE currently requires a portfolio in lieu of a praxis exam, in order

for the student to be considered "highly qualified," according to the "No Child Left Behind" regulations.

Required Theatre Arts Department Core Courses (15 credits)

Theatre Education Courses (select 3 credits minimum)
THEA 5340 Theatre Production Methods for Educators (Sp) 3
THEA 5360 Drama in the Secondary Education Classroom: Grades 7-12 (Sp).....3

Theatre Performance Practicum Courses (select 2 credits)
THEA 4740 Advanced Performance Practicum (F, Sp) (1-2 cr, repeatable).....1-2
THEA 5310 Theatre Mentorship and Service (F, Sp, Su) (1-3 cr, repeatable).....1-3

Theatre Production Practicum Courses (select 6 credits minimum; 3 credits must be upper division)
THEA 2750 Production Practicum (F,Sp,Su) (1 cr, repeatable) 1-2
THEA 4750 Advanced Production Practicum (F, Sp, Su) (1-3 cr, repeatable).....1-3

Production Responsibilities

Because the production programs of the department are some of the most important training tools of the discipline, all majors and teaching minors are required to participate in them. A permanent theatre participation record is maintained for each student, and successful completion of crew and performance assignments is a requirement for graduation.

As a capstone experience to their university careers, all majors in their senior year are required to complete a project or recital appropriate to their area of emphasis, except those in the General Theatre Arts Studies BA program.

Financial Support

Scholarships, grants-in-aid, and work-study opportunities are available through the University. In addition, the department offers talent awards and tuition scholarships to its own majors. These are generally for one semester of in-state tuition and may be applied for each semester by continuing students. Several auditions and interviews are scheduled during the year, both on-campus and at regional theatre conferences and festivals. The department offers special work grants through its production program for qualified, skilled students. There are a number of named scholarships awarded to students qualifying under specific conditions. Contact the Theatre Arts Department for more information.

Departmental Honors

Students who would like to experience greater academic depth within their major are encouraged to enroll in departmental honors. Through original, independent work, Honors students enjoy the benefits of close supervision and mentoring, as they work one-on-one with faculty in select upper-division departmental courses. Honors students also complete a senior project, which provides another opportunity to collaborate with faculty on a problem that is significant, both personally and in the student's discipline. Participating in departmental honors enhances students' chances for obtaining fellowships and admission to graduate school. Minimum GPA requirements for participation in departmental honors vary by department, but usually fall within the range of 3.30-3.50. Students may enter the Honors Program at almost any stage in their academic career, including at the junior (and sometimes senior) level. The campus-wide Honors Program, which is open to all qualified students regardless of major, offers a rich array of cultural and social activities, special classes, and the benefit of Honors early registration. Interested students should contact the Honors Program, Merrill Library 374, (435) 797-2715, honors@cc.usu.edu. Additional information can be found online at: **http://www.usu.edu/honors/**

Additional Information

Major requirement sheets, which provide detailed information about requirements for undergraduate programs within the Theatre Arts Department, can be obtained from the department, or accessed online at: **http://www.usu.edu/ats/majorsheets/**

Graduate Programs

Admission Requirements

All students making application to the MFA program who cannot audition or interview with a member of the theatre arts faculty must submit a resume and a portfolio with renderings, designs, photographs appropriate to the specialization, and any special letters of reference not included with the formal application to the School of Graduate Studies.

The Miller Analogies Test (MAT) may be substituted for the more standard GRE, although the department does not recommend the MAT for international students.

Students who have received their undergraduate training at other institutions or in a discipline other than theatre will be expected to meet a proficiency equivalent to that of USU Theatre Arts graduates. This may require the student to complete the following minimum 20-credit program, which will not count toward the graduate degree:

THEA 1400 Beginning Acting (F, Sp) 3
THEA 1500 Stage and Costume Crafts (F, Sp).....3
THEA 2410 Directing (F, Sp).....3
THEA 3230 Survey of Western Theatre (F) 3
THEA 4750 Advanced Production Practicum (F, Sp, Su).....3
Elective Theatre Arts courses in one program area 6

The student will be given credit for any equivalent courses taken within seven years prior to the date of admission.

Students accepted into the program must begin during the fall semester. The nature of the discipline and the program require that students maintain a continuous residence at the campus during the first two years of study.

Master of Arts

The candidate for the 30 (minimum) credit MA degree will normally complete a thesis, but may, with the approval of the supervisory committee, present a thesis alternative Plan B (36 credits minimum required).

Required Courses (30 credits)
Requirements are as follows:
THEA 6010 Introduction to Graduate Study in Theatre (F) 3
THEA 6240 Contemporary Theatre (F, Sp) 3
THEA 6790 Seminar in Drama (Sp) 3
THEA 6800 Graduate Studies in Theatre: Dramaturgy Project 2

Two advanced theatre history or dramatic literature courses selected from the Theatre Arts, English, or Languages, Philosophy, and Speech Communication departments are also required (6 credits).

Students must also complete two 5000- or 6000-level THEA courses, two of which must be in a single area.

Generally, students complete up to 8 thesis credits in THEA 6970. However, under special circumstances, a Plan B option in this program is available, requiring 12 credits of special project work and no more than 3 thesis credits in THEA 6970, for a total of 36 credits minimum.

In addition, the standard language competency of 15 credits in one language is required for the MA degree (see page 98).

Master of Fine Arts (60 credits minimum)

The candidate for the 60 (minimum) credit MFA must complete the Plan B program, and will undertake from three to four creative projects in the appropriate specialization. Under this plan, the required project reports customarily take the form of production books, journals, or a design or technical portfolio.

The student may specialize in one of the following areas. It is recommended that *both* a primary *and* a secondary emphasis be elected.

Scenery Design
Costume Design
Lighting Design
Advanced Technical Practice

The minimum residency is four semesters, including one or two summers in an established repertory or stock company, or equivalent experience. Participation in the department's summer Old Lyric Repertory Company will satisfy this requirement. A *minimum* total of 60 semester credits is required. The nature of the discipline, as well as the resources of the department, discourage credit by extension, large amounts of transfer credit (i.e., in excess of 12 credits), or numerous off-campus projects.

Students who have already earned an MA degree in theatre from an accredited institution will generally be given approximately one academic year of credit toward the MFA degree. To finish the MFA degree, they will then be required to complete a specialized program of approximately 40 credits.

Required Courses
The program is completed in three phases, and while there may be considerable overlap between them, students undergo formal reviews before advancing to the next phase. The number of semesters given is approximate.

I. Entry Phase (approximately two semesters) (19 credits)
A. Required Course (3 credits)
THEA 6010 Introduction to Graduate Study in Theatre (F) 3

B. Advanced Literature Component (select two courses) (6 credits)
THEA 6030 Storytelling (F, Sp, Su) 3
THEA 6240 Contemporary Theatre (F, Sp) 3
THEA 6270 Performance Theory and Criticism (Sp) 3
THEA 6290 Special Topics in Theatre History and Literature (F, Sp) 3

C. Advanced Design Coursework (in areas of specialization) (select 6 credits)
THEA 5510 Conputer-Aided Design for Theatre (F) 3
THEA 5950 Rendering and Painting for the Theatre (F, Sp) 3
THEA 6480 Theatre Leadership and Management (Sp) 3
THEA 6510 Advanced Scene Design (F, Sp) 3
THEA 6540 Advanced Lighting Design (Sp) 3
THEA 6790 Seminar in Drama *(Topics include: Drafting for Theatre, Tailoring, Pattern Drafting, Structural Design for the Stage, Costume Crafts)* (F, Sp) 1-4
THEA 6900 Research Studies (F, Sp, Su) 1-4

D. Design Studies (complete 2 credits each semester) (4 credits)
THEA 5590 Design Studies for Theatre (F, Sp) 4

During (or upon the completion of) the first semester of this phase, the student will:

1. Submit a petition to advance to the next phase.
2. Nominate an MFA Supervisory Committee of at least three members and submit the list of members to the department head.
3. Identify three projects for the next phase, after consultation with the graduate committee and department head of Utah State Theatre regarding program scheduling for the following season.
4. Develop a study list with the help of the committee, outlining the course of study for the project and cuminating phases.

II. Project Phase (approximately three semesters) (35 credits)
A. Design Studies (complete 2 credits each semester) (6 credits)
THEA 5590 Design Studies for Theatre (F, Sp) 6

B. Cognate Skill Coursework (6 credits)
A minimum of two courses is required to develop skills or increase knowledge in a field related to the area of specialization. Courses are subject to approval by the Graduate Study Committee. Students in any of the Design or Advanced Technical Practice specializations will take courses in: art, engineering and technology education, welding, furniture construction or cabinetry, or landscape architecture. Students may petition to take coursework in other disciplines, upon justification of relevance to the course of study.

C. Advanced Design Coursework (in areas of specialization) (9 credits)
THEA 5510 Computer-Aided Design for Theatre (F) 3
THEA 5950 Rendering and Painting for the Theatre (F, Sp) 3
THEA 6480 Theatre Leadership and Management (Sp) 3
THEA 6510 Advanced Scene Design (F, Sp) 3
THEA 6520 Advanced Costume Design (F, Sp) 3
THEA 6540 Advanced Lighting Design (Sp) 3
THEA 6790 Seminar in Drama *(Topics include: Drafting for Theatre, Tailoring, Pattern Drafting, Structural Design for the Stage, Costume Crafts)* (F, Sp) 1-4
THEA 6900 Research Studies (F, Sp, Su) 1-4

D. Graduate Projects in Theatre (9 credits)
THEA 6920 Project in Theatre A 3
THEA 6920 Project in Theatre B 3
THEA 6920 Project in Theatre C 3

E. Repertory Theatre Performance or Production (4-8 credits)
THEA 6740 or 6750 Old Lyric Repertory Company or its equivalent in a recognized stock or repertory program; a letter of satisfactory performance from the company director should be submitted to the department (repeatable) 4-8

Notes:

1. Students may also begin projects while they are still in the Entry Phase, but credit given for projects should include time for assembling and writing up the report, which is **due the following semester**; the supervising instructor will notify the major professor or advisor when this is completed.

2. Planning of the major projects should begin as early as possible in this phase.

3. Qualified major and minor projects should be identified by the faculty each spring, based upon the plays selected for the following season. Graduate students will meet with the faculty or department head to discuss directing, design, or technical assignments; or request a list of such projects by mid-April each year.

4. During (or upon completion of) this phase, the student will:

   a. Submit a petition to advance to the final phase. The date of this petition will depend upon individual progress.

   b. Submit proof that projects A, B, and C, as well as the written reports for them, have been completed.

   c. Submit a propasal and/or preliminary work for the major culminating project: renderings, preliminary working drawings, etc.

Culminating Phase (one semester minimum)
Required Courses (7 credits)
THEA 6180 Theatre Production Portfolio (Sp) 3
THEA 6970 Thesis (F, Sp).....4
(Assemble Plan B reports and complete major report in thesis format.)

Note:

The option to cancel a student project, or to allow work to proceed but disqualify it as an MFA project based upon insufficient preparation or validity, rests with the department's Graduate Study Committee, the student's Supervisory Committee chairperson (advisor), and the Executive Producer of Utah State Theatre. This rule is designed to protect the priorities of the department and the integrity of its productions.

During (or upon completion of) this phase, the student will:

1. Assemble the Supervisory Committee for a final review (defense) of the student's graduate work.

2. File a complete copy of all Plan B reports with the department, in accordance with procedures of the School of Graduate Studies. Copyrighted material, such as published scripts, will be filed separately in the Theatre Arts Office.

3. Be awarded the appropriate degree.

Financial Assistance

Teaching and general assistantships are awarded by the department. Assistantships are generally in the area of production, depending on theatre needs and the skills of applying students, and are renewable for up to three years. Application should be made directly to the department by February 1. Graduate students are not guaranteed financial assistance during their initial year of residence. Several other grants and forms of support are available on a competitive basis. Fellowships may supplement assistantships when funding is available.

Career Opportunities

The MA degree is a general, nonterminal degree designed to train students for further doctoral work in the discipline and to serve as a career upgrade for secondary school teachers. Students interested in teaching dramatic literature and theatre history and criticism at the postsecondary level should plan to use the MA as a step toward further PhD studies. Some two-year colleges employ MA graduates in teaching positions; however, almost no four-year colleges do so.

The MFA is designed for students pursuing careers in educational, professional, and regional theatres, or, in some cases, further doctoral-level work. It is regarded by most university and college administrations as a terminal degree for individuals with academic appointments as acting instructors, designers, and technicians. The department makes no guarantee that its training will qualify its graduates to pass examinations administered by the theatrical trade unions or otherwise meet requirements for guild membership. MFA graduates are qualified to seek employment with regional and professional theatres, regardless of the guild or trade union status of these organizations.

Additional Information

Specific details about each of the foregoing programs are outlined in documents available through the department. Requirements are subject to change. Internet e-mail requests should be sent to: **luannh@hass.usu.edu.**

Theatre Arts Faculty

Professor
Colin B. Johnson, theatre history and criticism, film

Professor Emeritus
Sidney G. Perkes, scene and costume design

Associate Professors
Mark L. Damen, playwriting, history
Kevin Doyle, acting, directing
Bruce L. Duerden, technical theatre, lighting
Dennis Hassan, scene design
Nancy E. Hills, costume design
Lynda Linford, acting
David E. Sidwell, history, storytelling, theatre education

Associate Professor Emeritus
Arthur Y. Smith, interpretation, theatre education

Assistant Professors
Shawn Fisher, design, technical generalist
Adrianne Moore, voice, acting, directing
Artemis Preeshl, movement, dance, acting

Lecturer
Robbin C. Black, theatre appreciation, theatre education

Course Descriptions

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Interdepartmental Program in Toxicology

Director: Roger A. Coulombe, Jr.
Location: Animal Science 213
Phone: (435) 797-1600
FAX: (435) 797-1601
E-mail: rogerc@cc.usu.edu
WWW: http://toxicology.usu.edu

Degrees offered: Master of Science (MS) and Doctor of Philosophy (PhD) in Toxicology

Graduate Programs

Established in 1962, USU's Interdepartmental Graduate Program in Toxicology is one of the first degree-granting graduate toxicology programs in the country. More than 140 students have received MS and PhD degrees through this research-intensive interdisciplinary program. Students affiliate with the program through one of several departments: Animal, Dairy and Veterinary Sciences (ADVS); Biology; Chemistry and Biochemistry; Civil and Environmental Engineering (CEE); or Plants, Soils, and Biometeorology (PSB). The USDA Poisonous Plants Laboratory also provides facilities and research projects for study.

Admission Requirements

Students with a degree in life sciences, physical science, medical science, or engineering and with adequate preparation in chemistry, biology, physics, and/or mathematics are encouraged to apply. Admission to the program requires compliance with the general admission requirements of the School of Graduate Studies, a faculty sponsor, and acceptance into the sponsoring professor's home department. Applicants should have a minimum GPA of 3.0 from completed degree programs. International students must receive a minimum TOEFL score of 250 (computer-based) or 600 (paper-based).

Major Research Areas

Molecular and Biochemical Toxicology

Modern molecular biological techniques are used to determine the mechanisms of toxicity and carcinogenesis by examining how various natural and synthetic compounds interact with the cellular genome. Resultant mutations in oncogenes and tumor suppressor genes are being investigated. The mechanisms of free-radical toxicity, specifically by iron and other transition elements, are also important research topics. Other ongoing studies examine the mechanisms of cancer chemoprevention, chemical metabolism, effects of toxicants on macromolecular syntheses, and metabolic intermediates. The toxicity of poisonous plants is another program emphasis.

Environmental Toxicology

Utah State University has a comprehensive research program in several aspects of environmental toxicology. Specifically, Utah State University faculty pioneered the use of white-rot fungi for the biodegradation of environmental contaminants. Models are developed and tested for dealing with the migration of chemicals in the environment, especially those with potential routes for human exposure. Basic biological, chemical, and physical methods are explored for hazardous waste management programs.

Course Requirements

Students in the **MS program** are required to complete the following core courses: ADVS 6350, 6400, 6600 (taught alternate fall semesters), 6810; CHEM 5700, 5710; STAT 5200.

Students in the **PhD program** are required to complete the following core courses: ADVS 6350, 6400, 6600 (taught alternate fall semesters), 6810; BIOL 5600 or 5620; CHEM 5700, 5710; STAT 5200.

Additional coursework may be required, at the discretion of the student's advisory committee.

Financial Assistance

Graduate students are eligible for competitive fellowships, teaching assistantships, and research assistantships. Out-of-state fees are waived, and in many cases, in-state fees are also waived. Hourly employment, which often permits waiver of out-of-state fees, is also available.

The Toxicology Graduate Program participates in the WICHE Western Regional Graduate Degree Program (WRGP). Residents of participating states may enroll in this program without paying nonresident tuition. To facilitate this process, applicants should inform the Toxicology Program of their WRGP status upon application.

Toxicology Program Faculty

Professors
Anne J. Anderson, plant toxicology (Biology)
Ann E. Aust, metal-induced carcinogenesis (Chemistry and Biochemistry)
Steven D. Aust, biochemical toxicology and bioremediation (Chemistry and Biochemistry)
Roger A. Coulombe, Jr., molecular toxicology, cancer chemoprevention, natural product toxicology (ADVS)
Howard M. Deer, pesticides and occupational health (ADVS)
William J. Doucette, fate of environmental chemicals, phytoremediation (CEE)
R. Ryan Dupont, biological waste treatment (CEE)
William J. Popendorf, occupational toxicology and industrial hygiene (Biology)
Ronald C. Sims, environmental engineering (CEE)

Research Professor
Darwin L. Sorensen, aquatic toxicology (CEE)

Associate Professors
Paul R. Grossl, soil chemistry and phytoremediation (PSB)
Jeffery O. Hall, veterinary toxicology (ADVS)

Collaborators at USDA Poisonous Plants Laboratory
Dale R. Gardner, natural product chemistry
Kip E. Panter, poisonous plants
James A. Pfister, behavioral toxicology
Bryan L. Stegelmeier, veterinary pathology

Co-director: Patricia Gantt
Location: Ray B. West 205
Phone: (435) 797-2718
E-mail: pgantt@english.usu.edu

Co-director: Anne Shifrer
Location: Ray B. West 301C
Phone: (435) 797-2731
E-mail: annes@cc.usu.edu

WWW: http://www.usu.edu/womenstu/

Women and Gender Studies at Utah State University is a multidisciplinary program focusing on the role of gender in the everyday experiences of women and men. Students are provided with opportunities to examine the diverse experiences, perspectives, and contributions of women in the past, present, and future, both nationally and internationally. Specific courses examine the processes of gender role socialization and the resulting cultural beliefs and stereotyped images of women. As a result, students gain appreciation for the role of gender and its practical implications in their basic life experiences, thus preparing them to understand current and future changes in the social construction of gender.

Each semester, Women and Gender Studies courses are taught by faculty members from a variety of disciplines, including Anthropology, Journalism and Communication, English, Fine Arts, Health and Physical Education, History, Natural Resources, Political Science, Psychology, Special Education, and Sociology. Throughout the year, several special topics courses are offered, and new courses are continually being developed. Two Women and Gender Studies scholarships are awarded to undergraduates.

Students may enroll in individual courses or apply coursework toward either a minor in Women and Gender Studies or an Area Studies certificate.

Area Studies Certificate in Women and Gender Studies (3.0 GPA)

Students desiring to explore Women and Gender Studies in depth may want an area studies certificate. To receive the certificate, students must complete 24 credits of courses from the list below or from the course list published each semester and earn a minimum grade point average of 3.0 in these courses. Other courses may count if at least 50 percent of the material is relevant to the issue of gender or if students complete a gender-related project in order to earn approximately one-half of their grade. Courses must be taken from at least three different academic areas; no more than 12 credits can be counted from a single discipline. Courses may come from major, minor, or University Studies programs. Area studies certificates may be earned by undergraduate and graduate students. Forms for the area studies certificate may be obtained in Student Center 302.

Women and Gender Studies Minor (2.5 GPA)

To complete the minor, students must select 18 credits from the list below or from the course list published each semester and must earn a minimum grade point average of 2.5 in these courses.

Courses for the Area Studies Certificate and Minor in Women and Gender Studies: (Area Studies, 24 credits; Minor, 18 credits)

Required Course (3 credits)

WGS 1010 Introduction to Women and Gender Studies (Sp) 3

Electives

(Minor, 15 credits; Area Studies, 21 credits)
For the minor, select 15 credits from the following list. For the area studies certificate, select 21 credits.

ANTH 5100 (DSS)/6100 Anthropology of Sex and Gender (Sp) 3
ART 4790 Art History Seminar: Gender Issues in Art (F,Sp,Su) 3
ENGL 3030 (DHA) Perspectives in Literature: Southern Women Writers (F,Sp,Su) 3
ENGL 3300 Period Studies in American Literature: Women's Texts from the 1930s (F,Sp) 3
ENGL 3510 Young Adult Literature: Reading and Writing Gender (F,Sp) 3
ENGL 3520 Multicultural American Literature: Gender Focus (F,Sp) 3
ENGL 3710 (CI) Folklore Colloquium: Folklore of the American Family and/or Folklore and Gender (Sp) 3
ENGL 4320 British Writers: Gender Focus (F,Sp) 3
ENGL 4350 Studies in Poetry: Women Poets 1950 to the Present (F) 3
ENGL 4360 Studies in Film: Genre and Gender in Hollywood (Sp) 3
ENGL 4370 Studies in Nonfiction Prose: Gender Focus (F) 3
ENGL 4610 Western American Literature: Utah Women Writers and/or Western Women Writers (F) 3
ENGL 5300 (CI) Literature and Gender (F,Sp) 3
ENGL 5320 (CI) Literature and Cultural Difference: Gender Focus (Sp) 3
ENGL 5340 (CI) Studies in Literary Theory: Feminist Theory (F) 3
ENGL 6330 Topics in Literary Studies: Women's Literature of the American West and/or Politics and the American Woman Writer (1776-1886) (F,Sp) 3
FCHD 3110 Human Sexuality (F,Su) 3
FCHD 3280 Economic Issues: Gender, Family, and Work Roles (Sp) .. 3
HEP 5000 (CI) Race, Class, and Gender Issues in Health (Arr) 3
HEP 5700/6700 ST: Workshop on Women's Health Issues (F,Sp,Su) .. 3
HIST 4550 (DHA/CI) The History of Women and Family in America 3
HIST 4730 (CI) History of Black America (Sp) 3
JCOM 3410 (DSS) Film as Cultural Communication: Women, Feminism, and Film (F,Sp) 3
JCOM 5410/6410 Gender and the Mass Media (F,Sp) 3
POLS 3190 (DSS) Gender, Power, and Politics (F) 3
POLS 5440 (DSS) Gender and World Politics (Sp) 3
REH 6120 Psychosocial Aspects of Disability (Su) 3
SOC 2500 Sociology of Gender (F) 3
SOC 3010 Race, Class, and Gender (F,Sp) 3
SOC 4730 Women in International Development (Sp) 3
SOC 6420 Gender and Social Inequality (Sp) 3
SOC 6730 Gender and International Development (Sp) 3
SPAN 4900 ST: Women Writers in the Spanish World (F,Sp) 3
SPAN 4910 ST: Latin American Women Writers and/or Latin American Women Playwrights (F,Sp) 3
WGS 4900 Directed Study: Women and Gender Studies (F,Sp,Su) 3

For additional course offerings, please consult the Women and Gender Studies website: **http://www.usu.edu/womenstu/**

Further information may be obtained from one of the co-directors or from the College of HASS Advising Center (Student Center 302).

Course Descriptions

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