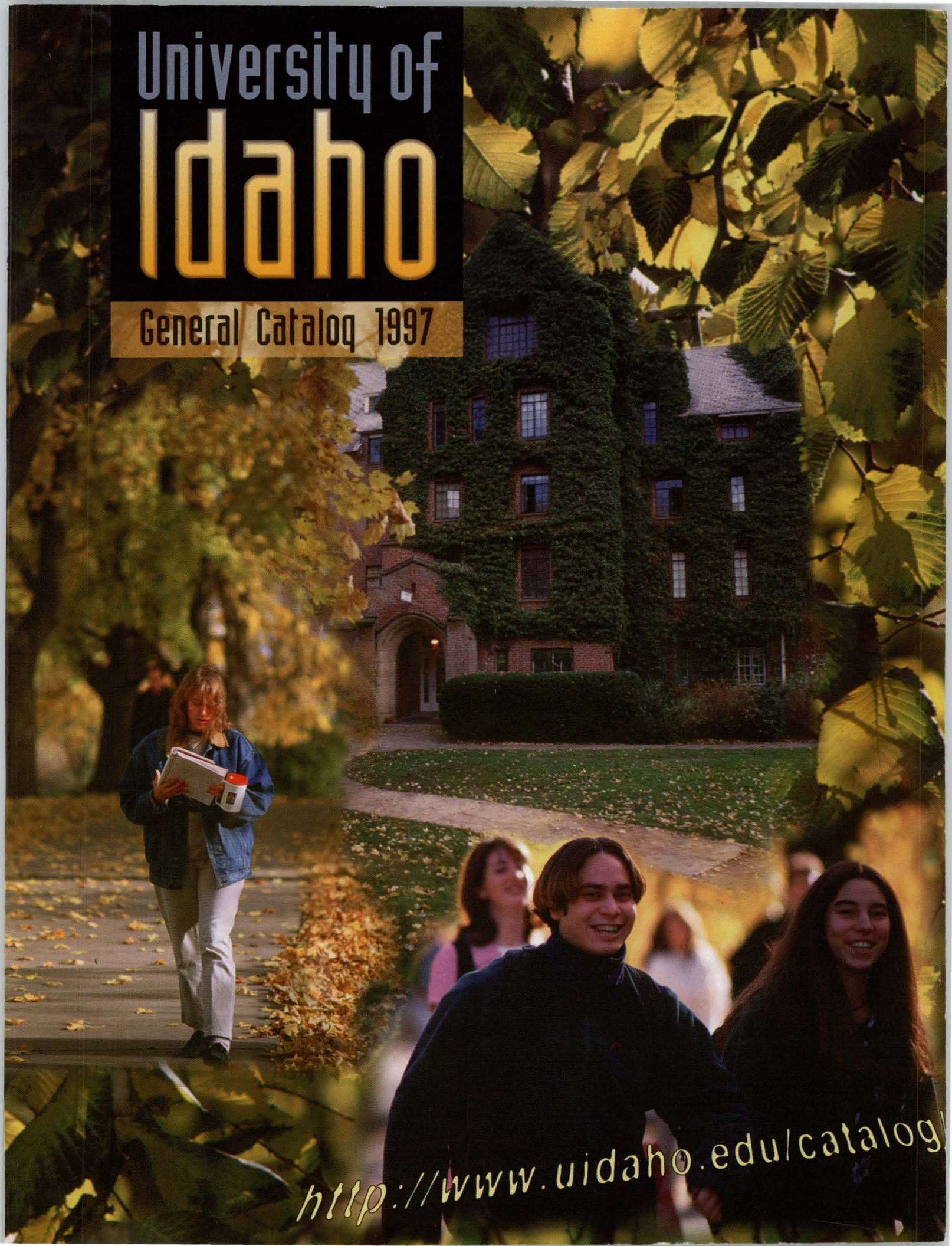
University of Idaho

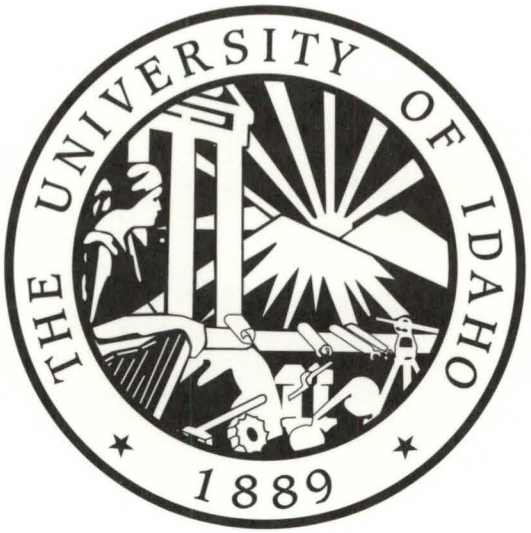
General Catalog 1997



http://www.uidaho.edu/catalog/

A university is . . . an *alma mater*,
knowing her children one by one,
not a foundry, or a mint, or a treadmill.
—John Henry Newman

The task of a university is the creation
of the future, so far as rational thought
and civilized modes of appreciation
can affect the issue.
—Alfred North Whitehead



For sources of additional information,
turn to the inside back cover.

The University of Idaho has a policy of nondiscrimination on the basis of race, color, national origin, religion, sex, age, disability, or status as a Vietnam-era veteran. This policy applies to all programs, services, and facilities, and includes, but is not limited to, applications, admissions, access to programs and services, and employment. Such discrimination is prohibited by titles VI and VII of the Civil Rights Act of 1964, title IX of the Educational Amendments of 1972, sections 503 and 504 of the Rehabilitation Act of 1973, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, the Age Discrimination Act of 1975, the Age Discrimination in Employment Act Amendments of 1978, the Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, and other state and federal laws and regulations. Questions and concerns about the application of these laws and regulations may be directed to the affirmative action officer, Human Resources and Purchasing Bldg. (885-6591), to the director, Seattle Regional Office, Office for Civil Rights, U.S. Department of Education, or to the director, Office of Federal Contract Compliance Programs, U.S. Department of Labor.

University of Idaho

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SPECIAL COLLECTIONS
UNIV. OF IDAHO LIBRARY

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Academic Calendar for 1997-98

Dates in this calendar are subject to change without notice; dates appearing in admission and registration instructions take precedence over those listed below. See the "Engineering Outreach" section for dates related to that program.

FALL SEMESTER 1997

Application closing dates for new and former students—see "Admission to the University" in the catalog
Monday, Aug. 25 ..... Classes begin (7:30 a.m.)
Monday, Sept. 1 ..... Labor Day, a holiday—classes do not meet
Tuesday, Sept. 2 ..... Last day to add course or change course section without special permission
Monday, Sept. 8 ..... Last day to register without paying late-registration fee
Last day to change from audit to regular credit without special permission
Last day to change from pass-fail to regular-grade basis
Last day to turn in "Partial Enrollment" and "Senior in 500s Course" forms to the Graduate Office
Last day to file applications for baccalaureate degrees to be awarded in December
Monday, Sept. 15 ..... Last day to file applications for advanced degrees to be awarded in December
Monday, Sept. 22 ..... Last day to avoid paying drop-add fee
Last day to withdraw from a course without having grade of W recorded—in the case of accelerated or short courses, when no more than 12.5 percent of the class-meeting hours have been completed
Last day to reduce number of credits for which registered in a course or change from regular-grade to pass-fail basis
Last day to change from regular credit to audit without having grade of W recorded
Last day to register by paying late-registration fee but without petition
Wednesday, Sept. 24 ..... Freshman early warning grade reports due
Monday, Oct. 6 ..... Last day to remove or extend incompletes
Friday, Oct. 17 ..... Last day for midsemester examinations
Monday, Oct. 20 ..... Midsemester grade reports due (1:30 p.m.)
Friday, Oct. 31 ..... Last day to withdraw from a course or from the university—in the case of accelerated or short courses, after 12.5 percent but less than 60 percent of the class-meeting hours have been completed
Last day to change from regular credit to audit
Monday, Nov. 3 ..... Preregistration advising begins
Monday, Nov. 10 ..... Classes WILL MEET this date, even though Veterans' Day is a holiday
Friday, Nov. 21 ..... Fall recess begins (5:30 p.m.)
Monday, Dec. 1 ..... Fall recess ends (7:30 a.m.)
Preregistration for spring-semester courses begins
Monday, Dec. 8 ..... Field-trip completion deadline (7:30 a.m.)
Monday-Friday, Dec. 8-12 ..... No-examination week
Friday, Dec. 12 ..... Last day to report grades for challenged courses
Monday-Friday, Dec. 15-19 .... Final examinations
Friday, Dec. 19 ..... Last day to file theses, dissertations, abstracts, and results of comprehensive examinations for graduate degrees to be awarded in December
Close of fall semester (5:30 p.m.)
Monday, Dec. 22 ..... Semester grade reports due (5 p.m.)

SPRING SEMESTER 1998

Application closing dates for new and former students—see "Admission to the University" in the catalog.
Monday, Jan. 12 ..... Classes begin (7:30 a.m.)
Monday, Jan. 19 ..... Martin Luther King-Idaho Human Rights Day, a holiday—classes do not meet
Tuesday, Jan. 20 ..... Last day to add course or change course section without special permission
Monday, Jan. 26 ..... Last day to register without paying late-registration fee
Last day to change from audit to regular credit without special permission
Last day to change from pass-fail to regular-grade basis
Last day to turn in "Partial Enrollment" and "Senior in 500s Course" forms to the Graduate Office
Last day to file applications for baccalaureate degrees to be awarded in May
Monday, Feb. 2 ..... Last day to file applications for advanced degrees to be awarded in May
Monday, Feb. 9 ..... Last day to avoid paying drop-add fee
Last day to withdraw from a course without having grade of W recorded—in the case of accelerated or short courses, when no more than 12.5 percent of the class-meeting hours have been completed
Last day to reduce number of credits for which registered in a course or change from regular-grade to pass-fail basis
Last day to change from regular credit to audit without having grade of W recorded
Last day to register by paying late-registration fee but without petition
Wednesday, Feb. 11 ..... Freshman early warning grade reports due
Monday, Feb. 16 ..... Presidents' Day, a holiday—classes do not meet
Monday, Feb. 23 ..... Last day to remove or extend incompletes
Friday, March 13 ..... Last day for midsemester examinations
Spring recess begins (5:30 p.m.)
Monday, March 16 ..... Midsemester grade reports due (1:30 p.m.)
Monday, March 23 ..... Spring recess ends (7:30 a.m.)
Friday, March 27 ..... Last day to withdraw from a course or from the university—in the case of accelerated or short courses, after 12.5 percent but less than 60 percent of the class-meeting hours have been completed
Last day to change from regular credit to audit

Monday, April 6 .....Preregistration advising begins
Monday, April 20 .....Preregistration for fall-semester courses begins
Monday, May 4 .....Field-trip completion deadline (7:30 a.m.)
Monday-Friday, May 4-8 .....No-examination week
Friday, May 8 .....Last day to report grades for challenged courses
Monday-Friday, May 11-15 .....Final examinations
Friday, May 15 .....Last day to file theses, dissertations, abstracts, and results of comprehensive examinations for graduate degrees to be awarded in May
Close of spring semester (5:30 p.m.)
Saturday, May 16 .....Commencement Day
Monday, May 18 .....Semester grade reports due (5 p.m.)

Regents and Administration

(January 1997)

The Regents of the University of Idaho

BOARD MEMBERS

Carole McWilliam, *President,* Pocatello (1998*)
Judith Centa Meyer, *Vice President,* Hayden Lake (1998*)
Thomas E. Dillon, *Secretary,* Caldwell (1999*)
Harold W. Davis, Idaho Falls (1999*)
Curtis H. Eaton, Twin Falls (1997*)
Jerry Hess, Nampa (1997*)
Roy E. Mosman, Moscow (2001*)
Anne Fox, *State Superintendent of Public Instruction,* Boise (ex officio)

OFFICE OF THE STATE BOARD OF EDUCATION

Rayburn Barton, *Ph.D., Executive Director,* Boise

University Administration

Robert A. Hoover, *Ph.D., President*
George M. Simmons, *Ph.D., Interim Provost*
Jerry N. Wallace, *M.B.A., Vice President for Finance and Administration*
W. Harold Godwin, *Ph.D., Vice President for Student Affairs and University Relations*
Jean'ne M. Shreeve, *Ph.D., Vice President for Research and Graduate Studies*
Dene K. Thomas, *Ph.D., Associate Provost*
Ronald W. Force, *M.S., Dean of Library Services*
Reta W. Pikowsky, *M.Ed., Registrar*
Daniel D. Davenport, *Ph.D., Director of Admissions*

Major Academic Divisions

COLLEGE OF GRADUATE STUDIES

Jean'ne M. Shreeve, *Ph.D., Vice President for Research and Graduate Studies*

COLLEGE OF LAW

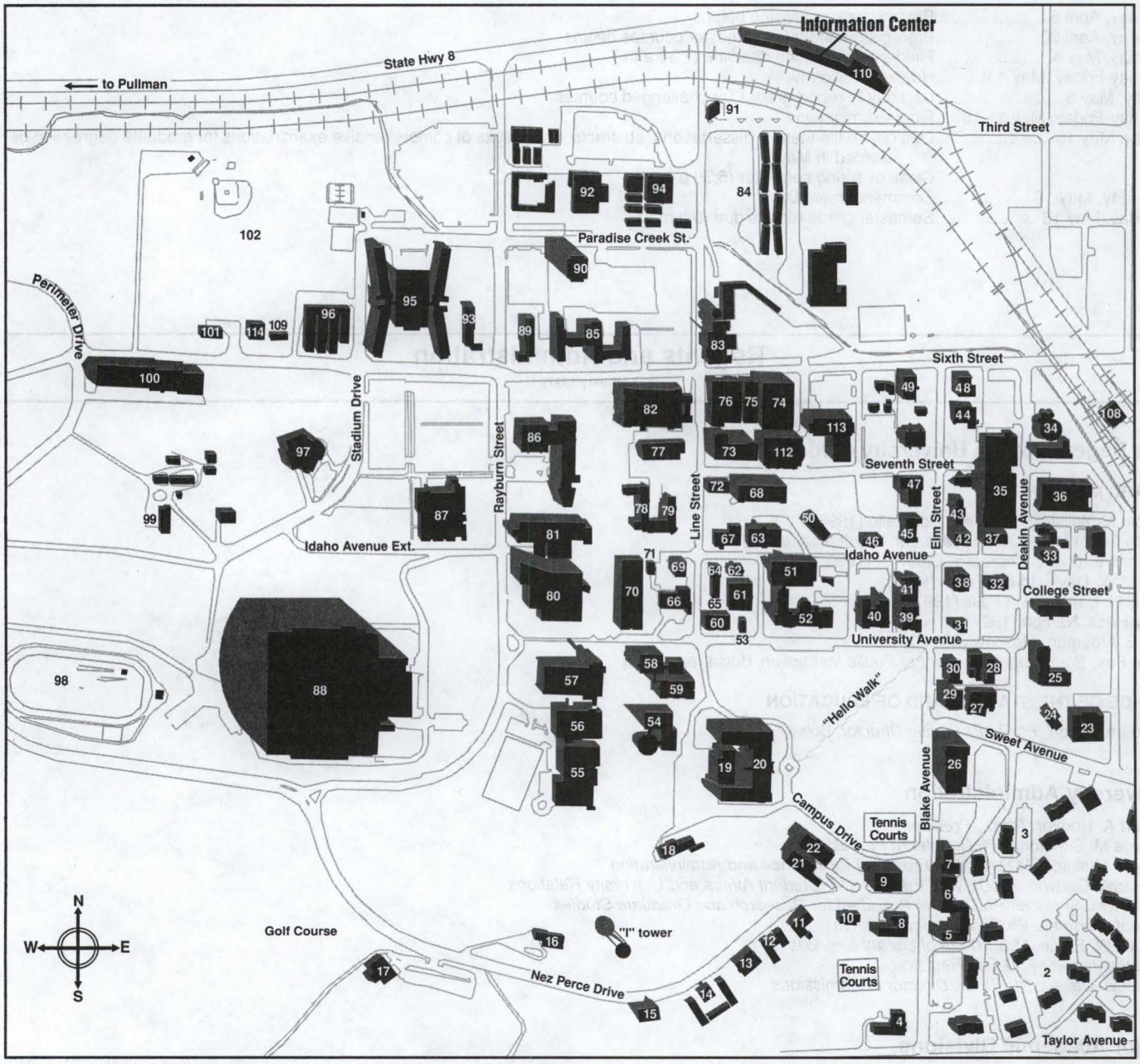
John A. Miller, *J.D., Dean*

UNDERGRADUATE COLLEGES**

Letters and Science—Kurt O. Olsson, *Ph.D., Dean*
Agriculture—David R. Lineback, *Ph.D., Dean*
Engineering—Richard T Jacobsen, *Ph.D., Dean*
Mines and Earth Resources—Robert W. Bartlett, *Ph.D., Dean*
Forestry, Wildlife and Range Sciences—Charles R. Hatch, *Ph.D., Dean*
Education—N. Dale Gentry, *Ph.D., Dean*
Business and Economics—Byron J. Dangerfield, *Ph.D., Dean*
Art and Architecture—Paul G. Windley, *D.Arch., Dean*

* Date current appointment expires.

**Listed in the order of their founding.



Univeristy of Idaho Campus Map

Building Key (Numerical Listing)

2 South Hill Terrace Apartments
3 South Hill Apartments
4 Targhee Residence Hall
5 Alumni Center
6 Continuing Education Bldg.
7 Steel House
8 FarmHouse
9 Ridenbaugh Hall
10 Foundation and Development
11 Alpha Kappa Lambda
12 Pi Kappa Alpha
13 Alpha Gamma Delta
14 Sigma Chi
15 Tau Kappa Epsilon
16 President's House
17 Golf Clubhouse
18 Radio–TV Center (KUID)
19 Administration Annex (ADO)
20 Administration Bldg. University Auditorium
21 Art Studio, Graduate (GAS)
22 Niccolls Bldg.
23 Industrial Education Bldg.
24 Sigma Alpha Epsilon
25 LDS Institute
26 Lionel Hampton School of Music
27 Scholars' Residence
28 Delta Sigma Phi
29 Kappa Sigma
30 Delta Chi
31 Campus Christian Center
32 Pi Beta Phi
33 Lambda Chi Alpha
34 St. Augustine's Catholic Church
35 Student Union Bldg. (SUB)
36 Bookstore and Post Office
37 Alpha Tau Omega
38 Phi Delta Theta
39 Phi Gamma Delta
40 Health Center
41 Kappa Kappa Gamma
42 Delta Gamma
43 Sigma Nu
44 Theta Chi
45 Beta Theta Pi
46 Phi Kappa Tau
47 Gamma Phi Beta
48 Alpha Phi
49 Delta Delta Delta
50 Delta Tau Delta
51 Gibb Hall (Life Sciences North)
52 Life Sciences South
53 Theatre Arts Annex
54 Education Bldg.
55 Physical Education Bldg.
56 Swim Center
57 Memorial Gym
58 Art and Architecture North
59 Art and Architecture South
60 Theatre Arts (U–Hut)
61 Psychology Bldg.
62 SUB Satellite
63 Morrill Hall
64 Academic/Tutoring Assistance Ctr.
65 Women's Center
66 Art and Architecture Annex
67 Food Research Center
68 Mines Bldg.
69 Communication Bldg.
70 University Classroom Center
71 Media Annex
72 Mathematics/Statistics Assist. Center
73 Janssen Engineering Bldg.
74 Buchanan Engineering Lab
75 Johnson Engineering Lab
76 Gauss Engineering Lab
77 Navy Bldg.
78 Phinney Hall
79 Brink Hall
80 Library
81 Renfrew Hall
82 Forestry Bldg.
83 Heating Plant
84 Park Village Apartments
85 Gault–Upham
86 Agricultural Science Bldg.
87 Menard Law Bldg.
88 Kibbie–ASUI Activity Center
89 McConnell Hall
90 Theophilus Tower
91 Police, Moscow
92 Facilities Management
93 Shoup Hall
94 Central Services
95 Wallace Complex
96 Greenhouse
97 Hartung Theater
98 Track
99 Aquaculture
100 J.W. Martin Lab
101 Agricultural Engineering Offices
102 Wicks Field
108 Human Resources and Purchasing
109 Environmental Health and Safety
110 North Campus Center (Information)
112 McClure Hall
113 Engineering & Physics
114 Ag. & Ext. Education

The University

The University of Idaho was created in 1889 by a statute of the 15th territorial legislature. Commonly known as the university charter, that act became part of the state constitution when Idaho was admitted to the Union in 1890.

The university is a publicly supported comprehensive land-grant institution with principal responsibility in Idaho for performing research and granting the Doctor of Philosophy degree. The liberal arts and sciences, offered through the College of Letters and Science, are the heart of the university's educational programs. The primary areas of statewide responsibility of the university are agriculture, architecture, engineering, forestry and wildlife, mining and metallurgy (including international programs in those areas), foreign languages, and law.

Additional university responsibilities include programs in business, economics, and education as well as the regional medical and veterinary medical education programs in which the state participates.

To assist with its statewide mission, the university maintains resident instructional centers in Coeur d'Alene, Boise, and Idaho Falls, extension offices in 42 of Idaho's 44 counties, research and extension centers in Sandpoint, Moscow, Parma, Caldwell, Kimberly, Aberdeen, Tetonia, and Dubois, and field stations at McCall, Clark Fork, Point Springs, and the Taylor Ranch in central Idaho. Through its international programs, the university extends its services to many other countries.

Over 13,000 students from all states and more than 80 foreign countries choose programs from a vast array of disciplines. Strong undergraduate programs are coupled with nationally recognized research and scholarly achievements. There are more than 750 faculty members in teaching and research, and 1,500 staff and professional personnel.

The University Library and the Law Library contain over 2 million items of books, bound periodicals, microforms, and U.S. government publications. These resources, together with the libraries at Washington State University (eight miles to the west), equal those of major metropolitan areas.

The Moscow campus and adjacent farms cover nearly 800 acres. Other university lands, including the nearby university farms and experimental forests, exceed 10,000 acres.

The university is proud of its friendly campus atmosphere and sense of community. For example, the tradition of "Hello Walk" leading to the Administration Building dates from the 1920s, when the university president greeted students and members of the faculty and staff with a warm hello and friendly smile on his way to work. The university has granted more than 74,110 degrees since its founding, including 2,148 to the class of 1996.

The feeling of camaraderie that pervades the campus extends to Moscow, the university's "hometown." It is a thriving community of 20,000 friendly people located in the northern part of the state about 90 miles southeast of Spokane, Washington.

Moscow is the gateway to a natural wonderland. The surrounding Palouse hills and the mountains and lakes of northern Idaho provide a scenic background for university facilities. Skiing, boating, and other outdoor recreation resources are available within easy driving distance. They include the Sawtooth and Hells Canyon national recreation areas, Frank Church River of No Return Wilderness, and scenic rivers such as the Snake, Clearwater, Salmon, Lochsa, and Selway.

The university is a member of the National Association of State Universities and Land-Grant Colleges and is accredited by the Northwest Association of Schools and Colleges. Additional approval or accreditation for specific programs has been granted by the following organizations: American Association of Collegiate Schools of Business, American Bar Association, American Chemical Society, American Dietetics Association, Association of American Law Schools, Accreditation Board for Engineering and Technology, Computer Science Accreditation Commission of the Computing Sciences Accreditation Board (bachelor's degree in computer science), National Architectural Accrediting Board, American Society of Landscape Architects, National Association of Schools of Music, National Council for Accreditation of Teacher Education, Society of American Foresters, National Association of School Psychologists, the Council for the Accreditation of Counseling and Related Educational Programs, and the National Recreation and Park Association Council on Accreditation.

Purpose, Functions, and Objectives of the University of Idaho

The highest aspiration of a university is to imbue the human mind with knowledge, tolerance, and vision, and to stimulate a lasting attitude of inquiry. The University of Idaho shares this aspiration with universities everywhere. The particular purpose, functions, and objectives of the university have been defined as follows:

Purpose. In the widest sense, the purpose of the University of Idaho, a publicly supported comprehensive land-grant institution, is to serve the people of the state and nation as a major center for the preservation, advancement, and transmission of knowledge. Deriving from this purpose are the functions to be performed and the objectives to be achieved through the interaction of the various components and publics of the university.

Basic Functions and Objectives. Since its founding, the functions of the university have been viewed as threefold—teaching, research, and service. The broad objectives relating to these functions are, respectively:

(1) To offer undergraduate and graduate academic programs of excellent quality in the liberal arts and sciences and in many professional disciplines so that qualified students may develop into responsible, thinking citizens, provided with a sound general education, prepared for a lifetime of learning, and equipped with the professional and technical skills needed by society.

(2) To add to knowledge through research, scholarship, and creative activities in both fundamental and applied fields, and to seek ways of applying that knowledge to the betterment and enrichment of humanity.

(3) To make readily available to all people of the state the results of research and the rich heritage of human culture embodied in the arts and sciences.

Unique Functions of the University. As a part of the coordinated system of higher education that encompasses the state universities and college and the public community colleges, the University of Idaho has historically had certain unique functions. Specifically, the university serves the state as:

(1) Its comprehensive land-grant institution, with primary statewide responsibility for instruction, research, extension, and public service in agriculture, architecture, engineering, forestry and wildlife, law, mining and metallurgy, and in designated areas in the arts and sciences, business, and education.

(2) The institution with principal responsibility for research, research-oriented graduate education, and the granting of the Ph.D. degree. As a concomitant of this responsibility, UI's faculty members conduct research as a clearly defined element of their professional duties.

(3) The institution responsible for the state's role as a partner in regional cooperative programs in medical and veterinary medical education.

(4) A center for professional education, operating accredited professional programs in architecture, chemistry, education, engineering, forestry, family and consumer sciences, law, music, and wildlife, fishery, and range sciences, and also offering comprehensive programs in the preparation of public-school teachers, administrators, and counselors.

General Honorary Societies

The university has long possessed nationally recognized marks of excellence, including chapters of national honorary and scholarship societies in practically every specialized field and chapters of the following general honorary societies: Phi Beta Kappa (since 1926), Phi Kappa Phi (since 1960), Sigma Xi (since 1922), and Golden Key (since 1990).

Phi Beta Kappa. To qualify for nomination to Phi Beta Kappa, a candidate must have a major in the College of Letters and Science. They must have achieved a cumulative grade-point average of at least 3.50 and have fulfilled the following distribution requirements: humanities (7 semester credits); laboratory sciences and/or mathematics (11 semester credits); social sciences (7 semester credits); foreign language (completion of a single foreign language through the intermediate level, or the equivalent —16 semester credits or 4 high-school units in a single foreign language).

Phi Kappa Phi. To qualify for nomination by the local chapter of Phi Kappa Phi, a candidate must be (1) registered at UI for at least one year and (2) enrolled in the final period of his or her junior year and rank scholastically in the upper 5 percent of the class or a senior enrolled in a course of study leading to a baccalaureate degree and rank scholastically in the upper 10 percent of his or her class.

Sigma Xi. To qualify for nomination to associate membership in Sigma Xi, a student must have shown marked aptitude for research in some field of pure or applied science. An associate member must have shown noteworthy achievement as an original investigator in some field of pure or applied science to qualify for nomination to full membership.

Golden Key National Honor Society. To qualify for membership in Golden Key, a student must have junior or senior standing and must have a cumulative grade-point average that falls in the top 15 percent of the junior and senior classes. Transfer students who have completed at least 25 semester credits at the University of Idaho and meet the grade-point average requirements also qualify for membership.

Libraries

The University Library and the Law Library hold over 2 million items. The libraries receive 10,700 serial titles, and add over 100,000 items annually. There are subscriptions to over 100 newspapers, including all Idaho newspapers and representative papers from around the U.S. The library is a regional depository for U.S. and Idaho state government documents, U.S. patents, and the Defense Mapping Agency, and is a designated Earth Science Information Center.

The library's collections emphasize the land-grant traditions of the basic sciences, agriculture, forestry, and mining and geology, while maintaining supporting collections in the humanities and social sciences.

The library building has just undergone a $12.4 million addition and renovation, increasing storage, study, and research space, resulting in essentially a new library facility.

The library is air-conditioned, and open 112 hours per week during the school terms.

The Library and the Law Library operate a public access library system connected to the CARL network. The system offers library catalogs of the more than 300 CARL members, including the academic libraries of Colorado, Wyoming, Maryland, and Hawaii. Also on the system is a table-of-contents file for over 17,000 academic journal titles and periodical indexes for a number of different subjects. The system may be accessed from terminals in the library, from computers attached to the campus network, or by modem from personal computers. In addition to CARL system databases, the library subscribes to a large number of periodical indexes on CDROM, and offers mediated bibliographic searches of online services on a cost-recovery basis.

There is a reciprocal use agreement between the UI and Washington State University Libraries, located in Pullman, eight miles away. A daily shuttle service runs between the two libraries to pick up and return books and photocopies of articles.

The library operates a staffed photocopy service, which will make photocopies from library materials, as well as enlargements, reductions and copies on special paper. Self service machines located conveniently throughout the building accept coins, debit cards, or charges to university budgets.

Galleries

The galleries serve the university, community, state, and region and are the principal facilities emphasizing the visual arts in northern Idaho. The University Gallery occupies the main floor of Ridenbaugh Hall on campus (corner of Blake Street and Campus Drive); it is open during the regular academic year. The Prichard Gallery is located at 414 South Main Street in downtown Moscow; it is open throughout the year. All gallery programs and exhibitions are open to the public and no admission is charged.

Through the galleries' rotation of exhibits, visitors may see examples of the full range of visual arts, including architecture, landscape architecture, interior design, and photography as well as the traditional art media. The objectives of these galleries are to provide opportunities for local, regional, and national artists and students to exhibit their work, and a means by which visitors' awareness and appreciation of the arts is heightened. The galleries also serve as an excellent teaching device. Ties between the university and local and regional communities are strengthened by the outreach efforts of the Prichard Gallery, which are coordinated by an advisory board composed of university and community leaders.

Exhibitions mounted each year traditionally include those by faculty members and undergraduate and graduate students from the College of Art and Architecture. Public receptions held in connection with some exhibitions, occasional musical performances presented at the galleries, and seminars with guest artists and lecturers are ways in which the gallery serves the university and the community.

The gallery facilities and programs are administered through the College of Art and Architecture.

Computer Services

Computer Services provides computing resources through a campus data communications backbone, and telephone services in support of instruction, research, administration, and residential housing units. Its main office is located in the UI Administration Building, Room 127.

The Applications Development and Production Section aids in the analysis, maintenance, and installation of purchased database software for both academic and administrative clients, and keys data and submits maintenance/report procedures for in-house applications such as payroll, student records, and financial aid.

The Network and Systems Section maintains the campus telecommunications infrastructure and the centralized administrative and academic computer systems, provides support and direction for campus local area networks, and provides terminal service access to all servers on the campus backbone.

The Telephone Services Section provides telephone services to the Moscow campus and to students, staff, and faculty members off campus, offers advice and support for telephone issues elsewhere within the university, and works with related sections of the campus on issues pertaining to electronic communications.

The Customer Support Section provides computer self-help pamphlets, maintains a library of software manuals for checkout, provides computer consulting assistance, offers a variety of computer classes, issues user accounts, and manages the software site licenses for campus. Customer Support's Help Desk provides general system information, resolves customer computer problems, and maintains a database of computer questions, along with their answers and solutions. The Help Desk can be reached at 885-APAL (885-2725).

Computer Services manages several student microcomputer labs, located in various buildings around campus. These labs are equipped with both IBM and Macintosh computers, all of which are

networked with connection to the Internet, and are equipped with software for word processing, spreadsheets, databases, graphics, communication, and other applications.

Idaho Water Resources Research Institute

The Idaho Water Resources Research Institute was established at UI by the regents on October 24, 1963. The national institute program is administered by the United States Geological Survey of the U.S. Department of the Interior to stimulate, sponsor, coordinate, and supplement research, education, and outreach programs in the field of water resources. The institute serves the state by developing and coordinating water research programs intended to assure the state, region, and nation adequate supplies of high-quality water.

The area of water resources planning, development, and management is a composite of many disciplines. Consequently, the Idaho Water Resources Research Institute believes that professional needs in these areas are best achieved by individuals with strong basic education in a traditional academic department enhanced by programs of study in water resources problems and professional practice. The university has developed procedures that encourage existing schools and departments to strengthen their programs in light of the special needs for water resources. The Idaho Water Resources Research Institute has coordinated master's and doctoral programs in several disciplines and specializations through various participating divisional programs.

The objectives of the institute are to: (1) promote water resources research and coordinate the efforts of the various university divisions and departments involved in water resources research; (2) strengthen and coordinate water-related undergraduate and graduate programs and course offerings so that the university can supply well-trained professionals and leaders; (3) develop, gather, and disseminate research findings within the state universities and to various federal, state, local, and civic organizations interested in water resources; and (4) promote water education for both the youth and adult community within Idaho.

Institute for Materials and Advanced Processes

The Institute for Materials and Advanced Processes (IMAP), composed of scientists from a number of colleges and disciplines within the University of Idaho, supports, directs, and coordinates research in the areas of materials and advanced processing. The former area encompasses work in strategic and critical materials, alloy evaluation, and composite materials development. The latter includes research on materials processing using high energy sources such as plasma, laser, and electron beam as well as processing of polymer, ceramic, and composite materials.

A current major program is being funded by the Idaho State Board of Education/Regents of the University of Idaho in the area of the synthesis and evaluation of nanostructured materials.

Other programs in the advanced materials arena cover topics including advanced metal matrix composites, intermetallic compounds, hydrogen effects in metals, and innovative ceramic concepts.

Pervasive to the whole activity is application of material science and engineering and transition of the research programs to real-world applications.

University of Idaho Press

The University of Idaho Press, founded in 1972, publishes scholarly books in the humanities, the social sciences, and the natural sciences. It serves the state, the scholarly community, and the university through a publishing program intended to exemplify the academic standards of the faculty and the significance of university research for society as a whole.

The Press issues seasonal catalogs of its new titles and books continuing in print. The Press publishes the work of academic and professional authors from across the United States and from Canada, the United Kingdom, and Europe. University of Idaho Press titles are sold throughout the West and across the country at university and retail bookstores, and to libraries and academic audiences around the world.

University Research Office

The University Research Office serves as the coordinating center for research and development activities at the university. While colleges, departments, and other units commonly develop and administer their own research programs, the Research Office assists by organizing and promoting research and development activities, by ensuring that policies and procedures are recognized and followed, by providing grant, contract, and foundation information, and by offering every possible assistance to the faculty, staff, and students in order to increase UI's competitiveness. All grant and contract proposals are processed and recorded.

Working very closely with the vice president for research and graduate studies is the Research Council, the faculty's standing committee involved with development of research policy and overseeing policy implementation. The council serves to resolve differences in interpretation and implementation of these policies. Additionally, the council acts as the peer review board in the university's internal competitive grants programs.

Idaho Research Foundation

The Idaho Research Foundation, Inc., is a private nonprofit corporation organized for the purpose of supporting research at the university. Its principal activity is licensing technologies that result from academic research to the private sector. The IRF identifies and protects the intellectual property developed at the University of Idaho and transfers it to the private sector through licensing agreements such that the university may secure support for and further develop its academic, research, and service responsibilities. The IRF also disseminates scientific knowledge and technical information and encourages and assists researchers and inventors by providing the means by which their scientific discoveries may be patented, copyrighted, developed, and applied. The transfer of technology generated through UI research turns society's investment into new products and industrial processes, thus increasing the competitiveness of Idaho and the nation.

Electron Microscopy Center

A campus-wide facility, including scanning and transmission electron microscopes and energy-dispersive x-ray microanalysis, is available for use in teaching, research, and service. Located in the Holm Research Center at the western edge of the campus, this facility is available to students and faculty members. Information concerning use of the EM Center may be secured directly from the facility or through the University Research Office.

Laboratory Animal Research Facility

A centrally located facility for housing and maintaining small animals for use in teaching and research is available to faculty members and students. Information concerning space availability, use, and services provided is available through the University Research Office or through the facility itself.

Degrees Granted

On completion of specific courses of study and recommendation of the faculty, the degrees listed below are granted by the Regents of the University of Idaho. In addition, the Certificate of General Proficiency is granted to students who complete specified lower-division educational programs at the UI/Idaho Falls Center for Higher Education.

Baccalaureate Degrees

Bachelor of Arts, B.A.
Bachelor of Science, B.S.
Bachelor of Science in
- Agricultural Economics, B.S.Ag.Econ.
- Agricultural Education, B.S.Ag.Ed.
- Agricultural Engineering, B.S.Ag.E.
- Agricultural Systems Management, B.S.A.S.M.
- Animal Science, B.S.An.Sc.
- Art Education, B.S.Art Ed.
- Biological Systems Engineering, B.S.B.Sy.E.
- Business, B.S.Bus.
- Business Education, B.S.Bus.Ed.
- Cartography, B.S.Cart.
- Chemical Engineering, B.S.Ch.E.
- Civil Engineering, B.S.C.E.
- Computer Engineering, B.S.Comp.E.
- Computer Science, B.S.C.S.
- Education, B.S.Ed.
- Electrical Engineering, B.S.E.E.
- Entomology, B.S.Ent.
- Environmental Science, B.S.Env.S.
- Family and Consumer Sciences, B.S.F.C.S.
- Fishery Resources, B.S.Fish.Res.
- Food Science, B.S.F.S.
- Forest Products, B.S.For.Prod.
- Forest Resources, B.S.For.Res.
- General Agriculture, B.S.Gen.Ag.
- Geography, B.S.Geog.
- Geological Engineering, B.S.Geol.E.
- Geology, B.S.Geol.
- Interdisciplinary Studies, B.S.I.S.
- Manufacturing Engineering, B.S.Mfg.E.
- Mechanical Engineering, B.S.M.E.
- Metallurgical Engineering, B.S.Met.E.
- Microbiology, B.S.Microbiol.
- Mining Engineering, B.S.Min.E.
- Molecular Biology and Biochemistry, B.S.M.B.B.
- Natural Resources Ecology and Conservation, B.S.Nat.Res.Ecol.
- Office Administration, B.S.O.Ad.
- Physical Education, B.S.P.E.
- Plant Science, B.S.Pl.Sc.
- Range Resources, B.S.Range Res.
- Recreation, B.S.Rec.
- Resource Recreation and Tourism, B.S.Res.Rc.
- Soil Science, B.S.Soil Sc.
- Technology, B.S.Tech.
- Veterinary Science, B.S.Vet.Sc.
- Wildlife Resources, B.S.Wildl.Res.

Bachelor of Architecture, B.Arch.
Bachelor of Dance, B.Dan.
Bachelor of Fine Arts, B.F.A.
Bachelor of General Studies, B.G.S.
Bachelor of Landscape Architecture, B.L.Arch.
Bachelor of Music, B.Mus.
Bachelor of Naval Science, B.N.S.
Bachelor of Technology, B.Tech.

Master's Degrees

Master of Accountancy, M.Acct.
Master of Arts, M.A.
Master of Science, M.S.
Master of Architecture, M.Arch.
Master of Arts in Teaching, M.A.T.
Master of Education, M.Ed.
Master of Engineering, M.Engr.
Master of Fine Arts, M.F.A.
Master of Music, M.Mus.
Master of Natural Science, M.Nat.Sc.
Master of Public Administration, M.P.A.

Specialist Degrees in Education

Specialist in Counseling and Human Services, Couns.-Hum.Serv.Sp.
Specialist in Education, Ed.Sp.
Specialist in Educational Administration, Ed.Admin.Sp.
Specialist in School Psychology, Sch.Psych.Sp.
Specialist in Special Education, Sp.Ed.Sp.
Specialist in Vocational Education, Voc.Ed.Sp.

Professional Degree in Law

Juris Doctor, J.D.

Doctoral Degrees

Doctor of Philosophy, Ph.D.
Doctor of Education, Ed.D.

Programs Offered

Programs offered by the university are shown in the list below. Entries followed by degree abbreviations are major curricula leading to the degrees indicated. After a student has completed the requirements for a degree, the degree name and, if not already a part of the degree name, the major curriculum as shown in this list are printed on the student's diploma. (By contrast, the options listed under some curricula are areas of concentration within the major. Options and academic minors are recorded only on the student's final permanent transcript.) In parentheses after each major curriculum in the list is the college or unit through which the program is offered. The abbreviations used are: Ag, College of Agriculture; A&A, College of Art and Architecture; B&E, College of Business and Economics; Ed, College of Education; Engr, College of Engineering; FWR, College of Forestry, Wildlife and Range Sciences; GS, General Studies Program; Law, College of Law; L&S, College of Letters and Science; Min, College of Mines and Earth Resources. Graduate degrees, except the degree of Juris Doctor, are offered through the College of Graduate Studies.

Accountancy (B&E) M.Acct.
Accounting (B&E) B.S.Bus.
Agribusiness (Ag) B.S.Ag.Econ., B.S.An.Sc.
Agricultural Economics (Ag) B.S.Ag.Econ., M.S.
Agricultural Education (Ag) B.S.Ag.Ed., M.S.
Agricultural Engineering (Engr) B.S.Ag.E., M.S., M.Engr., Ph.D.
Agricultural Systems Management (Ag) B.S.A.S.M.
Agriculture: General (Ag) B.S.Gen.Ag.
Air Force Officer Education Program, cooperative with Washington State University
American Studies (L&S) B.A.
Animal Physiology (Ag) Ph.D.
Animal Science (Ag) B.S.An.Sc., M.S.
Anthropology (L&S) B.A., B.S., M.A.
Architecture (A&A) B.Arch., M.Arch., M.A.
Army Officer Education Program
Art (A&A) M.F.A., M.A.T.; also (L&S) B.A.
Art Education (A&A) B.S.Art Ed.
Biological Sciences (L&S) M.Nat.Sc.
Biological Systems Engineering (Engr) B.S.B.Sy.E.
Biology (L&S) B.A., B.S.
Botany (L&S) B.A., B.S., M.S., Ph.D.
Business Education (Ed) B.S.Bus.Ed., M.Ed.
Cartography (Min) B.S.Cart.
Chemical Engineering (Engr) B.S.Ch.E., M.S., M.Engr., Ph.D.
Chemistry (L&S) M.S., M.A.T., Ph.D.
Chemistry: General (L&S) B.S.
Chemistry: Professional (L&S) B.S.
Chemistry: Technical Literature (L&S) B.S.
Chemistry: Technological (L&S) B.Tech.
Child, Family, and Consumer Studies (Ag) B.S.F.C.S.; also (L&S) B.A.

Civil Engineering (Engr) B.S.C.E., M.S., M.Engr., Ph.D.
Classical Studies (L&S) B.A.
Clothing, Textiles and Design (Ag) B.S.F.C.S.
Computer Engineering (Engr) B.S.Comp.E., M.S., M.Engr.
Computer Science (Engr) B.S.C.S., M.S., Ph.D.
Counseling and Human Services (Ed) M.S., M.Ed., Couns.-Hum.Serv.Sp. Doctoral programs in this field are offered under "Education."
Creative Writing (L&S) M.F.A.
Crime and Justice Studies (L&S) B.A., B.S.
Dairy Science (Ag) B.S.An.Sc.
Dance (Ed) B.Dan.
Earth Science (Min) M.A.T.
Economics (B&E) B.S.Bus., M.S.; also (L&S) B.A., B.S.
Education (Ed) Ed.Sp., Ed.D., Ph.D.
Educational Administration (Ed) M.S., M.Ed., Ed.Admin.Sp. Doctoral programs in this field are offered under "Education."
Electrical Engineering (Engr) B.S.E.E., M.S., M.Engr., Ph.D.
Elementary Education (Ed) B.S.Ed., M.S., M.Ed. Doctoral programs in this field are offered under "Education."
Engineering Management (Engr) M.Engr.
English (L&S) B.A., M.A., M.A.T.
Entomology (Ag) B.S.Ent., M.S., Ph.D.
Environmental Science (L&S) B.S.Env.S., M.S.
Family and Consumer Sciences (Ag) M.S.
Finance (B&E) B.S.Bus.
Fishery Resources (FWR) B.S.Fish.Res., M.S. A doctoral program in this field is offered under "Forestry, Wildlife and Range Sciences."
Food and Nutrition (Ag) B.S.F.C.S.
Food Science (Ag) B.S.F.S., M.S.
Foreign Languages (L&S) B.A.
Forest Products (FWR) B.S.For.Prod., M.S. A doctoral program in this field is offered under "Forestry, Wildlife and Range Sciences."
Forest Resources (FWR) B.S.For.Res., M.S. A doctoral program in this field is offered under "Forestry, Wildlife and Range Sciences."
Forestry, Wildlife and Range Sciences (FWR) Ph.D.
French (L&S) B.A., M.A.T.
General Studies (GS) B.G.S.
Geography (Min) B.S.Geog., M.S., M.A.T., Ph.D.; also (L&S) B.A., B.S.
Geological Engineering (Min) B.S.Geol.E., M.S.
Geology (Min) B.S.Geol., M.S., Ph.D.
Geophysics (Min) M.S.
German (L&S) B.A., M.A.T.
History (L&S) B.A., B.S., M.A., M.A.T., Ph.D.
Human Resources Management (B&E) B.S.Bus.
Hydrology (Min) M.S.
Industrial Technology (Ed) B.S.Tech.
Industrial Technology Education (Ed) M.S., M.Ed.
Information Systems (B&E) B.S.Bus.
Interdisciplinary Studies (L&S) B.A., B.S., M.A., M.S. (May also be offered under the B.S.I.S. by colleges other than L&S)
Interior Architecture (A&A) B.F.A.
International Studies (L&S) B.A.
Journalism and Mass Communication (L&S) B.A., B.S.
Landscape Architecture (A&A) B.L.Arch.
Latin (L&S) B.A.
Latin-American Studies (L&S) B.A.
Law (Law) J.D.
Manufacturing Engineering (Engr) B.S.Mfg.E., M.S., M.Engr.
Marketing (B&E) B.S.Bus.
Marketing Education (Ed) B.S.Bus.Ed.
Mathematics (L&S) B.A., B.S., M.S., M.A.T., Ph.D.
Mathematics: Applied (L&S) B.S.
Mechanical Engineering (Engr) B.S.M.E., M.S., M.Engr., Ph.D.
Medical Education (WAMI), cooperative with University of Washington
Medical Technology (L&S) B.S.
Metallurgical Engineering (Min) B.S.Met.E., M.S.
Metallurgy (Min) M.S.
Microbiology (Ag) B.S.Microbiol.; also (L&S) B.S.
Microbiology, Molecular Biology and Biochemistry (Ag) M.S., Ph.D.
Mining Engineering (Min) B.S.Min.E., M.S.
Mining Engineering-Metallurgy (Min) Ph.D.
Molecular Biology and Biochemistry (Ag) B.S.M.B.B.
Music (L&S) M.A., M.Mus.
Music: Applied (L&S) B.A.
Music: Business (L&S) B.Mus.
Music: Composition (L&S) B.Mus.
Music: History and Literature (L&S) B.A.
Music: Instrumental Performance (L&S) B.Mus.
Music: Theory (L&S) B.A.
Music: Vocal Performance (L&S) B.Mus.
Music Education: Instrumental (L&S) B.Mus.
Music Education: Vocal (L&S) B.Mus.
Music Education: Vocal-Instrumental (L&S) B.Mus.
Natural Resources and Rural Development (Ag) B.S.Ag.Econ.
Natural Resources Ecology and Conservation (FWR) B.S.Nat.Res.Ecol.
Naval Science (L&S) B.N.S.; also Navy-Marine Officer Education Program
Nuclear Engineering (Engr) M.S., M.Engr., Ph.D. (limited to students enrolled in the UI/Idaho Falls Center for Higher Education)
Office Administration (Ed) B.S.O.Ad.
Office Occupations Education (Ed) B.S.Bus.Ed.
Philosophy (L&S) B.A., B.S.
Photography (A&A) B.F.A.
Physical Education (Ed) B.S.Ed., M.S., M.Ed. Doctoral programs in this field are offered under "Education."
Physics (L&S) B.A., B.S., M.S., M.A.T., Ph.D.
Plant Science (Ag) B.S.Pl.Sc., M.S., Ph.D.
Political Science (L&S) B.A., B.S., M.A., Ph.D.
Pre-Nursing Studies (L&S) 2-year program
Production/Operations Management (B&E) B.S.Bus.
Psychology (L&S) B.A., B.S., M.S.
Public Administration (L&S) M.P.A.
Public Communication (L&S) B.A., B.S.
Range Resources (FWR) B.S.Range Res., M.S. A doctoral program in this field is offered under "Forestry, Wildlife and Range Sciences."
Range-Livestock Management (Ag) B.S.An.Sc.
Recreation (Ed) B.S.Rec., M.S.
Resource Recreation and Tourism (FWR) B.S.Res.Rc., M.S. A doctoral program in this field is offered under "Forestry, Wildlife and Range Sciences."
School and Community Health Education (Ed) B.S.Ed.
School Psychology (Ed) Sch.Psych.Sp.
Secondary Education (Ed) B.S.Ed., M.S., M.Ed. Doctoral programs in this field are offered under "Education."
Sociology (L&S) B.A., B.S.
Soil Science (Ag) B.S.Soil Sc., M.S., Ph.D.
Spanish (L&S) B.A., M.A.T.
Special Education (Ed) B.S.Ed., M.S., M.Ed., Sp.Ed.Sp. Doctoral programs in this field are offered under "Education."
Sport Science (Ed) B.S.P.E.
Statistics (L&S) M.S.
Studio Art (A&A) B.F.A.
Teaching English as a Second Language (L&S) M.A.
Technology Education (Ed) B.S.Ed.
Theatre Arts (L&S) B.A., B.S., B.F.A., M.F.A.
Veterinary Science (Ag) B.S.Vet.Sc., M.S.; also Veterinary Medicine, cooperative with Washington State University and Oregon State University.
Visual Communication (L&S) B.A., B.S.
Vocational Education (Ed) B.S.Ed., M.S., M.Ed., Voc.Ed.Sp. Doctoral programs in this field are offered under "Education."
Wildlife Resources (FWR) B.S.Wildl.Res., M.S. A doctoral program in this field is offered under "Forestry, Wildlife and Range Sciences."
Zoology (L&S) B.A., B.S., M.S., Ph.D.

Academic Minors Offered

A student may elect to pursue one or more of the academic minors listed below. See regulation J-9 in part 3.

Advertising
Aging Studies
Agribusiness
Agricultural Economics
Agricultural Extension Education
Agricultural Systems Management
American Government/Public Law
American Studies
Animal Science
Anthropology
Architecture
Art
Athletic Training
Biochemistry
Biology
Botany
Business
Chemistry
Classical Studies
Coaching
Computer Science
Crime and Justice Studies
Crop Science
Dance
Economics
English
Entomology
Food Science
Foreign and International Politics
Forest Products
Forestry, Wildlife and Range Sciences
French
Geology
German
Greek
History
Horticulture
Interdisciplinary Studies
Interior Architecture
International Business
International Studies
Interpersonal Communication
Journalism
Landscape Architecture
Latin
Manufacturing Engineering
Mathematics
Metallurgical Engineering
Microbiology
Mining Engineering
Molecular Biology and Biochemistry
Music
Natural Resource Communication
Natural Resource Economics and Community Development
Naval Science
Outdoor Recreation Leadership
Philosophy
Physics
Plant Protection
Political Science
Psychology
Public Administration
Public Relations
Recreation
Religious Studies
Small Enterprise Management
Sociology
Soil Science
Spanish
Sport Ethics
Sport Science
Statistics
Teaching English as a Second Language
Technical Theatre
Theatre Arts
Theatre Arts Performance
Therapeutic Recreation
Tourism and Leisure Enterprises
Visual Communication
Wilderness and Nature Conservation
Women's Studies
Zoology

Admission to the University

Information about the undergraduate admission process is available from the Admissions and New Student Services Offices. A prospective student will be sent an application for admission, scholarship and financial aid forms, and a means of requesting information on housing and various student activities.

Students who are pursuing a baccalaureate degree are classified as undergraduates: freshmen (fewer than 26 semester credits), sophomores (fewer than 58 semester credits), juniors (fewer than 90 semester credits), or seniors.

Applicants for admission to the university must present satisfactory evidence of good character.

Application Procedures

All applicants for admission are required to submit:

1. The appropriate, completed application form (i.e., undergraduate, nondegree, or international). Failure to list all institutions attended or submission of inaccurate transcripts or other supporting documents as specified on the application form is considered fraud and subjects the applicant to immediate cancellation of his or her registration and/or dismissal from the university.
2. Official transcripts from the last high school and all colleges or universities attended. (See sections on freshman, transfer, nonmatriculated, or international admission requirements for further details.) **Transcripts submitted in support of an application must be official and must be sent directly to the Admissions Office by the issuing institution. Transcripts received become the property of the university and cannot be returned, copied, or forwarded.** Official transcripts must be signed by the registrar, superintendent, principal, or other authorized official of the school.
3. Scores from the College Board (SAT) or the American College Testing Program (ACT) if applying for admission to the freshman class. This includes transfer applicants with fewer than 14 transferable semester credits.
4. A nonrefundable application fee of $30 for domestic students and $40 for international applicants. Review of the application will be delayed until this fee is received. This fee is not charged to students applying for nondegree status.

Application Deadlines. To provide time for evaluation and for notice of acceptance to reach the applicant before classes begin, applications and credentials should be submitted to the Admissions Office by August 1 for fall semester and by December 1 for spring semester. Applications and credentials for summer session should be received by the Admissions Office at least three weeks before the opening date of the summer session or the program in which the student intends to enroll. Applications received after the above dates will be accepted in the order of their receipt only as long as additional new students can be accommodated. Acceptance will be subject to space limitations in the division in which the applicant wishes to register. International applicants have different deadlines (see "International Admission Requirements").

Notification of Admission. When all of an applicant's credentials have been received and he or she has been found eligible, a letter of acceptance and information on current costs and preregistration procedures will be sent. Acceptance is granted for a specified semester or summer session. If an applicant does not register for the term for which he or she applied and was accepted, it will be necessary to submit a supplemental application if entrance at a later time is desired.

Freshman Admission Requirements

Freshman applicants graduating from high school prior to 1996 must meet the requirements in effect for their graduation year.

A degree-seeking applicant with fewer than 14 semester credits of transferable college work must:

1. submit ACT or SAT scores;
2. graduate from an accredited high school with a combination of cumulative GPA and test scores as defined in the following table:

High School GPA		ACT Composite		SAT Verbal + Math recentered score*
3.00 - 4.00	and	any test score	or	any test score
2.60 - 2.99	and	15 - 36	or	790 - 1600
2.50 - 2.59	and	17 - 36	or	870 - 1600
2.40 - 2.49	and	19 - 36	or	930 - 1600
2.30 - 2.39	and	21 - 36	or	1000 - 1600
2.20 - 2.29	and	23 - 36	or	1070 - 1600

*These scores will be used for all SAT results beginning with the April 1995 testing date. The change is due to a new scoring format implemented by the College Board for the SAT.

3. complete specified high school courses with a minimum 2.00 GPA as listed below. A credit is defined as a course taken with a minimum of 70 hours of classroom instruction. A high school credit can be counted in only one category.
   a. **English**: A minimum of 8 credits, selected from composition and literature courses or courses that integrate composition, language, and literature.
   b. **Mathematics**: A minimum of 6 credits including algebra I or applied math I, geometry or applied math II, and another course requiring algebra I as a prerequisite (applied math courses must be approved by the Idaho State Department of Education). Other courses may include algebra II, analytic geometry, calculus, statistics, and trigonometry. **Four of the required mathematics credits must be taken in the 10th, 11th, and 12th grades.**
   c. **Social Science**: A minimum of 5 credits, selected from American government (state and local), geography, U.S. history, world history, psychology, sociology, and economics (consumer economics courses approved by the Idaho State Board of Education may be counted toward this requirement).
   d. **Natural Science**: A minimum of 6 credits, selected from anatomy, biology, chemistry, geology, earth science, physical science, physiology, physics, zoology, and applied science courses jointly approved by the State Department of Education (SDOE) and the State Department of Vocational Education (SDVE) (maximum of two credits in this category). Ecology will count if SDOE approved. At least two credits must involve laboratory science experience. Note: A laboratory science course is defined as one in which at least one class period each week is devoted to providing students the opportunity to manipulate equipment, materials, or specimens; develop skills in observation and analysis; and discover, demonstrate, illustrate, or test scientific principles or concepts.
   e. **Humanities/Foreign Language**: A minimum of 2 credits, selected from literature, history, philosophy, foreign language, fine arts (history, theory, appreciation, and evaluation), and interdisciplinary humanities (related study of two or more of the traditional humanities disciplines). These courses should emphasize history, appreciation, theory, analysis, and/or critique. History courses beyond those required for state high school graduation may be counted. Foreign language study is strongly recommended.
   f. **Other College Preparation**: A minimum of 3 credits, of which no more than one credit may be in speech or debate (debate must be taught by a certified teacher). Other courses may include studio/performing arts (art, dance, drama, and music) or foreign language (beyond any foreign language credit applied in the humanities/foreign language category). May include no more than two credits in SDVE-approved classes in agricultural science and technology, business and office education, health occupations education, consumer homemaking education, occupational home economics, industrial technology education, marketing and multi-occupations education, and trade, industrial, and technical education.

If a high school does not offer a required course, applicants may contact the university's Admissions Office for provisional admission procedures. Students who do not graduate from an accredited high school (e.g., students who earn a GED, are home schooled, or graduate from a non-accredited school) should contact the Admissions Office for information regarding admission requirements.

Applicants who are still in high school should apply during their senior year and should ask their high school counselor to send a copy of their current transcript to the Admissions Office. If qualified, the applicant will be given an early notice of tentative acceptance based on this record. Final acceptance will be granted when the university receives a final transcript mailed directly from the high school verifying that the applicant has graduated from an accredited high school and has satisfied all admission requirements.

Transfer Admission Requirements

Applicants who have been enrolled in other colleges or universities accredited by one of the regional agencies, such as the Northwest Association of Schools and Colleges, and whose scholastic records at these institutions are satisfactory may be admitted with advanced standing. Transfer applicants must submit the following credentials to the Admissions Office:

1. An official transcript from the last high school attended.
2. In addition to submitting a high school transcript, transfer students must also arrange to have official transcripts sent from **each** college or university previously attended. To be considered official, transcripts must be mailed directly to the University of Idaho Admissions Office by the issuing institution. **Transcripts received become the property of the university, and cannot be returned, copied, or forwarded.**

Transfer students are selected from those applicants who present a cumulative grade-point average of at least 2.00 (C) for all college-level study attempted in all accredited colleges attended, exclusive of courses for which credits are not allowed. Students transferring from out-of-state schools into the College of Engineering must have a cumulative grade-point average of at least 2.80. Admission of transfer students to the landscape architecture program will be based on GPA (typically limited to 2.5 or above), test scores (ACT/SAT), and a portfolio with a letter of intent submitted to the department.

Applicants with fewer than 14 semester hours of transfer credit must meet both freshman and transfer admission requirements, including submission of the required test scores. (See "Freshman Admission Requirements," above.)

Students admitted to the University of Idaho from other collegiate educational institutions must have complied with the academic regulations for continuance in the institution(s) that they have attended in addition to the academic regulations that are applied to students enrolled in this institution.

Provisional Admission

A freshman applicant who does not qualify for regular admission but satisfies one of the criteria below may petition the Admissions Committee for consideration as a provisional student.

1. graduates from a non-accredited high school,
2. is home schooled,
3. earns a General Educational Development (GED) certificate and has a predicted college grade-point average of at least 2.00 based on ACT or SAT scores,
4. deserves consideration because of special circumstances (e.g., disadvantaged or minority status, delayed entry, returning veteran, a talented student wishing to enter college early, and/or similar situations).

An applicant with previous college work who does not qualify for regular admission may also seek provisional acceptance by petitioning the Admissions Committee for consideration.

Such applicants must submit to the Admissions Office an application for admission, the appropriate fee, all required official transcripts and test scores, three letters of recommendation, and a written statement of the student's objectives. This information should be received in the Admissions Office by the application deadlines of August 1 for fall semester and December 1 for spring semester.

If admitted, the student may be required to attend pre-academic planning within an office or program to be specified in the letter of acceptance. Students admitted through the appeal process may be enrolled with provisional standing and will be subject to the regulations on academic probation, disqualification, and reinstatement (see regulation L in part 3).

Freshmen admitted provisionally may change to regular admission status upon satisfactory completion of 14 credits, 12 of which must be in four different categories of the general education requirements (see regulation J-3). Regular admission status must be attained within three semesters or the student will be dismissed, subject to the Admissions Committee's appeal procedures.

Transfer students admitted provisionally must enroll on probation, meet all conditions imposed by the committee, and complete the first semester with at least a 2.00 grade-point average or they will be dismissed, subject to the Admissions Committee's appeal procedure.

Nondegree Admission Requirements

This category is for applicants who wish to enroll in courses pertaining to their personal interest and who do not want to work toward a formal degree at the University of Idaho.

Admission to this category is not automatic. Applicants must meet minimum university admission requirements for freshmen or transfer students, as applicable. To ensure that applicants meet these minimums a transcript from the last accredited institution and additional documentation may be required.

A student currently in high school wishing to take one or more classes as a nondegree student must submit a letter from his or her high school recommending the student be allowed to enroll in the class(es). The letter must be from the principal or counselor of the high school.

Students admitted to the nondegree category at the University of Idaho are not eligible to receive federal Title IV financial aid.

Registration as a nonmatriculated student in F-1 visa status is not permitted and no I-20AB, Certificate of Eligibility, will be issued. International students who hold nonresident alien visas (other than F-1 and J-1 visa category students) may register for only one course per semester as nonmatriculated students. They must meet the minimum university requirements for freshman or transfer students including the Test of English as a Foreign Language (TOEFL) as applicable.

If a student wishes to change to a degree program, he or she will be required to file a degree-seeking application for admission and meet admission requirements. The department in which the student plans to major determines how much of the credit earned while a nondegree student will be counted toward the degree. Degree requirements are those listed in the catalog in effect at the time of enrollment in the University of Idaho as a degree-seeking student.

The student is responsible for ascertaining the applicability of credit earned while registered in this category. Permission of the instructor is required to enroll in courses numbered 500-600. Permission of the dean of the College of Law is required to enroll in courses numbered 800-999.

All students in the nondegree category who register for a full course load (i.e., 12 or more credits in any semester or six or more credits in a summer session) will be disqualified if a 2.00 GPA is not earned during that semester or summer session. Nondegree students who are disqualified are ineligible to continue at the university unless readmitted.

A nondegree student who has registered for 12 credits or more for each of two semesters is required to petition the Admissions Committee if he or she wishes to continue as a nondegree student enrolled for 12 credits or more. Such a student will be required to file the same credentials as required of a degree-seeking student.

International Admission Requirements

The University of Idaho welcomes application from qualified students who are from other countries. All international students who hold nonresident alien visas who are pursuing a degree (i.e., matriculated) must be in the correct F-1 or J-1 student status and comply with the U.S. Immigration Service regulations pertaining to that student status.

International student applicants who hold nonresident alien visas must submit:

1. Official transcripts or certified copies of certificate(s), diploma(s), or government examination report(s) received from any educational institution (high school, college, or university). **These documents must be translated into English and must be sent by the certifying agency directly to the Admissions Office.**
2. An official score report of the Test of English as a Foreign Language (TOEFL) for applicants whose native language is not English. Students must present a minimum score of 525 to be considered for admission to the university. A higher score may be required by the college or academic unit in which they plan to study. Exception to the TOEFL requirement is made for those from English-speaking countries and those who have earned a degree from either a U.S. institution or an institution in another English-speaking country. Written permission from the director of admissions must be obtained to substitute the results of another examination for TOEFL. Those transferring with a minimum of one year of full-time baccalaureate study at a U.S. institution will be evaluated individually by the Admissions Office and the appropriate department to determine whether English proficiency has been demonstrated or the TOEFL is to be required. If required, the TOEFL score must be on file before the application for admission will be processed. The Educational Testing Service (ETS) does not report, nor does the University of Idaho accept, scores that are more than two years old.
3. A completed "Certificate of Financial Responsibility" and all required supporting documentation. International students who hold nonresident alien visas must present to the Admissions Office satisfactory statements of finances and adequate proof of financial responsibility or sponsorship for all financial obligations while attending the university.
4. A "Transfer Clearance Form" if the student is transferring to the University of Idaho from another U.S. college or university. This form, provided to the student by the Admissions Office, must be completed by the international programs officer or foreign student adviser at the current U.S. institution and sent to the University of Idaho before an I-20 or IAP-66 can be issued.

Applicants who have had no previous work at the college level must have at least a high "C" average at the secondary level, in order to be considered for admission to the University of Idaho.

Undergraduate applicants who have attended a college-level institution must have completed at least one year of full-time study at an accredited college or university and must present a minimum grade-point average of 2.80 for all baccalaureate-level work attempted.

Application Deadlines. To provide time for evaluation, for notice of admission status to reach the applicant, and for INS requirements to be met for issuance of a student visa, applications and credentials should be received by the Admissions Office no later than the following dates: For fall semester, June 1; for spring semester, October 1; for summer session, March 15.

Health and Accident Insurance. Supplemental health and accident insurance is mandatory for international students who hold nonresident alien visas and all accompanying independents. Students must purchase and maintain the UI policy or document coverage of an equivalent policy before they are allowed to register or attend classes. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See information on insurance in the Student Services section below.

College of Graduate Studies and College of Law Admission Requirements

Students interested in graduate study should request a copy of the *Graduate Catalog* from the College of Graduate Studies. The special procedures for admission to the College of Law are described in part 4.

Preparation Recommended by UI Colleges

Certain preparation in addition to the minimum requirements set forth above is advisable if a student is to enter easily and progress smoothly through a particular university curriculum. The following table indicates the high school preparation recommended for prospective majors in the respective curricula of each of the UI colleges (the table combines the minimum requirements and the recommended supplements). This tabulation should help an applicant determine whether his or her preparation is adequate for a given field of study and assist students and their advisers in planning their high school programs.

PREPARATION RECOMMENDED BY COLLEGES

Subject Areas	Number of Credits Recommended by College Students who plan to enter the General Studies Program (see part 4) should use this chart as a guide for minimum high school preparation							
	Agriculture	Art & Architecture	Business & Economics	Education	Engineering	Forestry, Wildlife & Range Sciences	Letters & Science	Mines & Earth Resources
English	8	8	8	8	8	8	8	8
Mathematics[1]								
Algebra	2	2	2	2	2	2	2	2
Geometry	2	2	2	2	2	2	2	2
Advanced Algebra	2	2	2	2	2	2	2	1
Trigonometry					1	1		
Other					1			1[2]
Social Science	5	5	5	5	5	5	5	5
Natural Science[3]								
Biology						2		
Chemistry					2	2		
Physics					2	2		2[4]
Unspecified	6	6	6	6	2		6	4[5]
Humanities/Foreign Language	2	2	2	2	2	2	2	2
Other College Preparation	3	3	3	3	3	3	3	3
Total credits	30	30	30	30	32	31	30	30

[1] Four credits must be taken in the 10th, 11th, and 12th grades.

[2] Either advanced algebra, trigonometry, or solid geometry (in this order of preference).

[3] Must have laboratory experience in at least 2 credits.

[4] For mining, metallurgical, or geological engineering; for geography the 4 credits are unspecified.

[5] Chemistry strongly recommended.

Students may be admitted with fewer academic credits than the minimum total indicated for their particular college or they may be admitted with the total academic units required but with fewer units than indicated in one or more subjects. In either case the student's college will identify subject inadequacies and prescribe the means by which these deficiencies are to be removed or satisfied. Courses needed as preparation for the student's college curriculum should be taken during the student's first year at the university.

Evaluation of Transfer Credits

Upon admission of a transfer student, all credits earned or attempted and all grades received in college-level courses at accredited institutions are evaluated and core-curriculum determinations are made by the Registrar's Office. The applicability of these credits to the student's program of study is determined by the student's major department. No grade points for this work are included in the computation of his or her grade-point average at the University of Idaho. Transfer credit from non-U.S. institutions is recorded with grades of pass or fail only. All transfer credits are recorded on the student's permanent record after he or she is officially registered.

Advanced Placement. Credit is granted for successful completion of the College Board Advanced Placement Examination, the College Level Examination Program (CLEP), and courses at military schools as recommended by the American Council on Education. Inquiries about other forms of advanced placement and requests for evaluation of advanced-placement credits or for guidelines to avoid duplication of credit should be addressed to the Registrar's Office.

Internal advanced-placement credit granted by other accredited institutions will be honored on transfer to the University of Idaho.

Armed Forces Credits. The university may grant credit for completion of certain educational programs sponsored by the Armed Forces. In evaluating these programs, consideration will be given to recommendations made by the American Council on Education and other appropriate agencies and to university degree requirements.

Transfer Credit Limitations. A maximum of 70 credits earned at junior or community colleges, or one-half of the total credits required for the student's intended baccalaureate degree program, whichever is the higher number, may be transferred to the University of Idaho.

Vocational-Technical Credit. Credits earned in vocational-technical courses at accredited or state-approved vocational-technical schools may be the basis for waiving requirements or transferring credits to the University of Idaho in accordance with the following regulations:

1. When equivalence has been validated by the academic department and college that offer comparable subject matter, credits may be transferred for specific lower-division courses taken at the other institution.
2. In those cases in which comparable subject matter is not taught at the University of Idaho, the amount and characterization of the credits to be transferred is determined by the department and the dean of the college into which the student is transferring (for example, a block of credits in agriculture).
3. A grade of P (pass) is recorded for such credits that are transferred.
4. Credits transferred from vocational-technical schools are included within the 48-credit limitation of extramural and similar credits that may be counted toward a baccalaureate degree (see regulation J-5-b).
5. The department into which the student transfers decides what curricular requirements, if any, will be waived (this determination may be made independently of the transfer of credits).
6. If there are any questions concerning the waiving of distributional requirements in the college into which the student transfers, such questions are to be resolved by the dean of that college.
7. Except as substitutions for equivalent courses offered by the student's academic department, no credits in vocational-technical courses taken at a vocational-technical school may be counted toward the minimum of 128 credits required for a liberal arts degree (i.e., B.A. or B.S.) in the College of Letters and Science.

General Education Requirements for Transfer Students

One of the requirements for a UI baccalaureate degree is fulfillment of the general-education or "core-curriculum" requirement. Students who enter UI with transfer credit have two options for fulfilling this requirement. One option is to satisfy the requirement as outlined in regulation J-3 in part 3 of this catalog. In this case, transfer credits are evaluated on a course-by-course basis for equivalency to courses specified in J-3, and deficiencies are made up by completing the necessary additional credits in nonduplicating courses listed in J-3. As an alternative, a transfer student may satisfy the general-education requirements established by the State Board of Education as set forth immediately below. In this case, transfer credits are evaluated by subject matter, rather than on a course-by-course basis, and deficiencies are made up by completing the necessary additional credits in nonduplicating courses listed in J-3.

Alternative General Education Requirements for Transfer Students. A total of at least 36 credits that fit within the following categories and credit ranges must be completed.

a. **Communications**: 1 course (2-3 credits). Courses in this area enhance the student's ability to communicate clearly, correctly, logically, and persuasively in spoken English. Disciplines—debate, rhetoric, and speech.

b. **English Composition**: 1-2 courses (3-6 credits, depending on initial placement results). To satisfy this category, students must be able to express themselves in clear, logical, and grammatically correct written English. The first three credits may be exempt by ACT, SAT, WPCT, CLEP, or College Board AP exam.

c. **Behavioral and Social Science**: 2-4 courses (6-12 credits). Courses in this area provide instruction in the history and culture of civilization; the ways political and economic organizations, structures, and institutions function and influence thought and behavior; and the scientific method as it applies to social science research. Disciplines—anthropology, economics, geography, history, political science, psychology, and sociology. Courses must be distributed over two different disciplines.

d. **Humanities, Fine Arts, and Foreign Language**: 2-4 courses (6-12 credits). Courses in this area provide instruction in the creative process, history and aesthetic principles of the fine arts, philosophy and the arts as media for exploring the human condition and examining values, and communication skills in a foreign language. Disciplines—art, drama-theatre, foreign languages, literature, music, and philosophy.

e. **Natural Science**: 2 courses (7-12 credits). Courses in this area provide an understanding of how the biological and physical sciences explain the natural world and introduce the basic concepts and terminology of the natural sciences. Disciplines—biology, chemistry, geology, physical geography, and physics. Courses may be distributed over two different disciplines; at least one course must have had an accompanying laboratory experience.

f. **Mathematics**: 1 course (3-5 credits). Courses in this area are intended to develop logical reasoning processes; skills in the use of space, numbers, symbols, and formulas; and the ability to apply mathematical skills to solve problems. Courses may include college algebra, calculus, finite mathematics, and statistics.

Student/Program Assessment

The University of Idaho, along with all other public institutions of higher education in Idaho, is required by policy of the State Board of Education to assess student learning in general education and in the academic majors. In late 1991, the Northwest Association of Schools and Colleges, which provides institution-wide accreditation for the university, issued similar guidelines requiring assessment.

Effective teaching and learning are essential to meeting our long-held goal of producing responsible, well-prepared citizens and leaders in their professions. Our program of student outcomes assessment has been implemented to ensure that we continually improve the teaching and learning process and the programs that support that process.

Information vital to effective assessment includes student performance as well as student opinions on the quality of university academic programs and services. To provide this information, students may be required to participate in assessment activities; these may include, but are not limited to, examinations, performance assessments, interviews, surveys, focus groups, and follow-up studies after graduation.

Mutual Responsibility Agreement

UI's acceptance of a student for admission and the student's enrollment in the university constitute an agreement of mutual responsibility. The student's part of this agreement is to accept established UI policies and rules, to respect the laws of governmental units, and to act responsibly and in a manner appropriate to these laws, policies, and rules. UI's part is to carry out its commitment to higher education, to fulfill its responsibilities in pursuit of the academic goals and objectives of all members of the university community, and to meet its obligation to provide an atmosphere in which students will have an opportunity to be heard in matters affecting their welfare as students. UI must take appropriate disciplinary action when it has been ascertained that a student's action is contrary to UI regulations and thus that this agreement has been violated.

Fees and Expenses

The rates quoted in this section were in effect during the 1996-97 academic year. They are subject to change without notice.

Expenses for attending the University of Idaho vary with the taste and financial means of each student. The university takes pride in its record of providing high-quality instruction at reasonable cost.

Board and room are available at relatively low rates under a variety of plans. Single-occupancy rooms are subject to availability of space and cost more each semester than double-occupancy rooms. Students may reduce their living costs by sharing the work in the cooperative residence halls.

Students are encouraged to preregister for classes at the University of Idaho. For information about the registration process, contact the Registrar's Office at 208/885-6731. Business and Accounting Services (208/885-6538) can provide details regarding fees and expenses.

Annual Expenses

In forecasting total costs for the academic year, double the 1996-97 semester costs, allow for normal increases, and add miscellaneous costs—clothing, laundry, transportation, incidentals, social and recreational expenditures, fraternal affiliations, and personal needs.

Assuming the student uses the deferral option for payment of fees and pays room and board in four equal installments, about $1,400 is needed to meet initial payment. Out-of-state students need an additional $1,100 to cover the initial tuition payment. Personal checks, bank drafts, money orders, travelers checks, VISA, and MasterCard are all accepted by the university. Also see "Deferred Payment of Fees" further on in this catalog section.

1996-97 Costs per Semester

	Idaho Residents	Nonresidents
Tuition[1]	0	2,826
Regular full-time student fees	884	884
Books, supplies, etc.	433	433
Room and board[2]	1,800	1,800
TOTAL[3]	$3,117	$5,943

[1] In addition to special fees applicable to students enrolled in the College of Graduate Studies, the College of Law, etc.
[2] Double-occupancy rate in university-owned residence halls with 14 meals per week. Cooperative dormitories in which residents provide their own janitorial and dining hall services are available at a lower cost.
[3] Not including personal, incidental, or travel expenses.

Regular Student Fees

Unless exempted, students carrying eight or more credits (or equivalent) and all graduate/instructional assistants (including faculty-staff spouses) on full appointment pay the full-time student fees applicable to the particular division in which the student enrolls. Students in all divisions pay $884 a semester. Students in certain divisions pay additional amounts; see "Special Fees" below. Fees are payable in full at the time of registration during the scheduled registration period. Also see "Deferred Payment of Fees," below.

Payment of full-time fees covers most laboratory and course charges and entitles the student to membership in the Associated Students University of Idaho (ASUI), to a nontransferable student identification card, to the services of the Alumni Office, and to the other services and facilities maintained by the university for the benefit of the students, subject to charges for special services and the payment of the special fees listed below. No reduction in fees can be made for students who may not want to use any part of these services.

Special Fees

Nonresident Tuition (students registered before fall 1992 $2,140 per semester; fall 1992 $2,350; fall 1993 $2,585; fall 1994 $2,673; fall 1995 $2,826; fall 1996 $2,826). Students who are classified as nonresidents of the state of Idaho pay this special fee in addition to the regular student fees. For tuition purposes, a student who is a permanent resident of the U.S. may be classified as a resident of Idaho by meeting one or more of the following qualifications:

1. Any student who has one or more parent or parents or court-appointed guardians who are domiciled in the state of Idaho. Domicile, in the case of a parent or guardian, means that individual's true, fixed, and permanent home and place of habitation. It is the place where that individual intends to remain, and to which that individual expects to return when that individual leaves without intending to establish a new domicile elsewhere. To qualify under this section, the parent, parents, or guardian must have maintained a bona fide domicile in the state of Idaho for at least one year before the opening day of the term for which the student matriculates. One year is interpreted as 12 consecutive months immediately preceding the opening date of the term for which resident status is requested.
2. Any student who receives less than 50 percent of the student's support from a parent, parents, or legal guardians who are not residents of this state for voting purposes, but which student has continuously resided in the state of Idaho for 12 months next preceding the opening day of the term during which the student proposes to attend the college or university **and who has in fact established a bona fide domicile in this state primarily for purposes other than educational**. "Continuously resided" is interpreted as physical presence in the state for 12 consecutive months. Specified support applies to the 12-month period immediately preceding the opening date of the term for which resident status is requested.
3. Subject to the definition of "nonresident student" below, any student who is a graduate of an accredited secondary school in the state of Idaho, and who matriculates at a college or university in the state of Idaho during the term immediately following graduation regardless of the residency for the student's parent or guardian.
4. The spouse of a person who is classified, or is eligible for classification, as a resident of the state of Idaho for the purposes of attending a college or university. Request for classification under this section will require that a copy of the marriage certificate be filed, and the qualifying spouse may be required to submit proof of residency in the form of an affidavit.
5. A member of the Armed Forces of the United States, stationed in the state of Idaho on military orders. "Armed Forces" means the U.S. Army, Navy, Air Force, and Marine Corps. Uniformed services such as Coast Guard or National Guard do not qualify for

residency requirements. Armed Forces members must be stationed in Idaho on active duty. A certified copy of the military orders may be requested in support of this qualification for residency classification.

6. A student whose parent or guardian is a member of the Armed Forces and stationed in the state of Idaho on military orders and who receives 50 percent or more of support from parents or legal guardians. The student, while in continuous attendance, shall not lose that residency when the student's parent or guardian is transferred on military orders. Specified support must have been provided for the 12 months immediately preceding the opening day of the term for which resident status is requested. "Armed Forces" means the U.S. Army, Navy, Air Force, and Marine Corps. Uniformed services such as Coast Guard or National Guard do not qualify for residency requirements. Armed Forces members must be stationed in Idaho on active duty. A certified copy of the military orders may be requested in support of this qualification for residency classification.
7. A person separated, under honorable conditions, from the United States Armed Forces after at least two years of service, who at the time of separation designates the state of Idaho as his or her intended domicile or who has Idaho as the home of record in service and enters a college or university in the state of Idaho within one year of the date of separation. "Armed Forces" means the U.S. Army, Navy, Air Force, and Marine Corps. Uniformed services such as Coast Guard or National Guard do not qualify for residency requirements. "Two years of service" shall means two years of **active** duty service. Reserve duty status does not qualify for residency requirements. A certified copy of the DD-214 separation papers may be requested in support of this qualification for residency classification.
8. Any individual who has been domiciled in the state of Idaho, has qualified and would otherwise be qualified under the provisions of this statute and who is away from the state for a period of less than one calendar year and has not established legal residence elsewhere provided a 12-month period of continuous residency has been established immediately prior to departure.

Note: Any one (or more) of the characteristics described in 1 through 8 qualifies the individual as a resident for tuition purposes.

A "nonresident student" shall mean any student who does not qualify as a "resident student" under the provisions above, and shall include:

1. A student attending an institution in the state with the aid of financial assistance provided by another state or governmental unit or agency thereof, such nonresidency continuing for one year after the completion of the semester for which such assistance is last provided.
2. A person who is not a citizen of the United States of America, who does not have permanent or temporary resident status or does not hold "refugee-parolee" or "conditional entrant" status with the United States Immigration and Naturalization Service or is not otherwise permanently residing in the United States under color of the law and who does not also meet and comply with all applicable requirements of the definition of resident status.

For students who apply for special graduate and professional programs including, but not limited to, the WAMI (Washington, Alaska, Montana, Idaho) Regional Medical Program, the WICHE Student Exchange Programs, Creighton University School of Dental Science, the University of Utah College of Medicine, and the Washington, Oregon, Idaho (WOI) Regional Program in Veterinary Medical Education, no applicant shall be certified or otherwise designated as a beneficiary of such special program who has not been a resident of the state of Idaho for at least one calendar year previous to the application date.

Students who are currently enrolled at UI may obtain additional information and interpretation of the residency regulations from the Registrar's Office. Those students who have not yet enrolled may contact the Admissions Office.

Application Fee. For information concerning the application fee, see the section headed "Application Procedures" at the beginning of part 2 of the catalog.

Graduate/Professional Fee. Students who enroll in the College of Graduate Studies pay this fee in addition to the regular student fees and, if applicable, nonresident tuition. Fees are $270 per semester for full-time students or $27 per credit for part-time students. Undergraduate and nonmatriculated students enrolling in graduate courses must also pay the appropriate graduate fee.

Law Fee. Students who enroll in the College of Law pay the graduate fee and the law school fee in addition to the regular student fees and, if applicable, nonresident tuition. The fees per semester for full-time law students are:

	Idaho Residents	Nonresidents
Regular Student Fees	884	884
Graduate/Professional Fee	270	270
Law College Fee	500	500
Nonresident Tuition and Surcharge	0	2,826
TOTAL	$1,654	$4,480

WUE Fee ($442). The Western Undergraduate Exchange Program has a fee that is equal to 50 percent of the institution's full-time regular student fee ($884). Fifty percent of this fee equals $442. This fee is in addition to the regular student fees; nonresident tuition is not assessed WUE students.

WAMI Fee. First-year students who enroll in the WAMI Medical Education Program pay this fee in addition to the regular student fees of $884. For 1996-97, the UI fee is $3,067 and the University of Washington fee is $75. The total fee per semester is $4,026.

Registration Fee for Senior Scholars. Persons 60 years of age and older are permitted to enroll in courses on the Moscow campus, on a space-available basis. The fee is $20 plus $5 per credit. Senior scholars are enrolled after the regular registration days. Special fees for specific courses, e.g., music lessons, are assessed, if such charges are made to other students who take the courses concerned. Registration under this program entitles the student to instruction and library privileges only, and does not include insurance, student health services, ASUI membership, or free admission to athletic events.

Part-Time Fee ($88 a credit or equivalent). Students who register for seven credits or less pay this fee and any special fees applicable to specific courses in lieu of regular fees and tuition. Graduate and law students pay an additional $27 a credit.

Part-Time Nonresident Fee ($95 per credit hour). Students who are classified as nonresident of the state of Idaho pay this fee in addition to the regular part-time fee. This fee is not charged during summer session.

Audit or Zero-Credit Fee ($88 a credit or equivalent). Students who register as auditors or for zero credit pay this fee and any special fees applicable to specific courses unless the registration is part of a normal registration for a specific semester or other academic session for which the student has already paid the full registration fees.

Registration Service Charge ($50). Charging this fee is an incentive for students to complete their registration in a timely manner. The effective dates for this fee are listed in the registration calendar.

Late Registration Fee ($50). Students who are allowed to register after the last day to add classes or change course sections pay this fee.

Drop/Add Fee ($5). A $5 fee is charged each time a request is filed to drop or add one or more courses after the tenth day of classes.

Petition Fee ($5). A $5 fee is charged for each petition submitted to the Academic Petitions Committee or Graduate Council.

Video Outreach Program. Fees are $319 per credit for off-campus students who have applied for admission to or have been admitted to the Graduate College or who register for 500-level courses. Off-campus students taking courses at the 400 level or lower and who are registered in nonmatriculated status pay $290 per credit.

Students at the University Centers pay $141 per credit if matriculated or taking 500-level courses; they pay $121 per credit if nonmatriculated or taking 400-level courses. Students at Idaho Falls pay $163 if matriculated or taking 500-level courses; they pay $136 per credit if nonmatriculated or taking 400-level courses. Tapes must be viewed at the University Centers or on the campus cable system. Courses and shortcourses that have been videotaped may be rented or purchased. For additional information, contact the Engineering Outreach Office, 208/885-6373.

Student Health Service Fees. Payment of student registration fees entitles a student to the basic services of the Student Health Service. Additional fees are charged for medications, certain studies, and additional services according to rates maintained and available at the clinic.

Insurance. All students enrolled in academic courses for credit, excluding board-appointed faculty and staff, are automatically covered by student accident insurance. The premium for accident insurance is included in the Uniform Student Fee. Full-time students are covered on a 24-hour basis while coverage is in effect. Part-time and summer students are covered while on UI property, while participating in a UI program, or traveling as authorized by the university. Limits of coverage are $10,000 payable at 80% after a $150 deductible per accident. (Intramural and club sports accidents have a $500 deductible.) Optional student health insurance is available for students enrolled for 6 or more credit hours and their dependents upon payment of the health insurance premium. Students who do not wish to purchase optional insurance must decline coverage on their fee billing statement. If a student pays for the insurance and decides later to cancel the coverage, refunds are permitted during the first 30 days of the beginning of each school term. International students who hold nonresident alien visas must either purchase health and extended accident insurance for themselves and all accompanying dependents or document coverage by equivalent insurance as part of their obligation to establish proof of financial responsibility for expenses incurred while attending the university. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. The coverage will pay 80% of covered expenses up to a maximum of $50,000 after a $150 deductible per school year. Certain benefits are limited and there are exclusions. Information is available by calling (800) 475-4258 or (208) 885-7177.

Music Special Fees. All students, except music majors in degree-required courses, enrolling in courses numbered MusA 114, 124, 134, 314, 324, 334, 514, 524, 534, and MusC 507, Individual Instruction, pay $110 for each credit or equivalent. Music majors presenting a formal recital performance in the Hampton School of Music Recital Hall are charged $40; non-majors are charged $50. If two or more performers present a program together, the fee may be shared by the performers. A $12 fee is charged all students who are enrolled in MusH 111, 321, 322, and 323. The fee provides two tickets to the Auditorium Chamber Music Series. In addition, a $15 use fee is charged all students who are enrolled in MusA 145, 146, 245, and 246 (Piano Class) and MusC 426 (Electronic Music). All students in MusT 251, 252, 253, 254, 351, 352, 353, and 354 will be billed $20 for instrument maintenance. Consult the Hampton School of Music (208/885-6231) for the current schedule of fees.

Lab and Course Fees. Special fees are charged for certain courses. Examples include the College of Art and Architecture that charges a general shop fee and/or fee for certain courses and the College of Education that charges special fees for physical education classes. Consult departmental offices for the current schedule of lab and course fees.

Advanced Standing Exam Fee ($20). Charged for each separate request or petition for extramural credit—except credit for external study/experience (see below)—that is processed subsequent to a student's initial enrollment in the university. This fee applies without regard to the number of credits sought, requested, or granted. Examples of "extramural credit" are: credit by examination (see regulation D-4); credit for technical competence under such catalog entries as VoEd 270, 370, 470, and 480; and credit for bypassed courses (see regulation I).

External Study/Experience Fee ($15 for filing and $10 for each credit granted). The filing fee is charged at the time the student initiates formal action to have his or her work evaluated for the granting of credit for external study/experience (see regulation I-5). The per-credit fee is charged at the time the credit is granted.

Diploma Fee ($10). This fee is payable at the time the student applies for each degree to be awarded by the university. An additional fee of $5 is charged for a special diploma insert.

Thesis/Dissertation Binding Fee ($16). At the time the application for the degree is filed, every candidate for an advanced degree who is submitting a thesis or dissertation (including such terminal projects as musical compositions) pays this fee to have two copies of the document bound for the library.

Publication and Microfilming Fee ($50). Candidates for the Ph.D. or Ed.D. degree pay this fee for the publication of the dissertation abstract and for the microfilming of the dissertation.

Transcript Fee ($3). Every person who has established an academic record at the university is furnished one official copy of the academic record without charge at the time of graduation. Additional copies, when requested, are $3 per copy.

Yearbook Fee ($32.50). Students wishing to order a copy of the *Gem of the Mountains* pay this fee at the time the order is placed.

Miscellaneous Fees.

1. For library charges, consult the University Library.
2. For costs of field trips and special equipment for certain courses, consult the instructor.
3. A greens fee is charged for the use of the Golf Course.
4. University employees and students are charged fees to park in university-owned lots.

Deferred Payment of Fees

Students who have no delinquent accounts with the university and who are assessed registration fees or tuition in excess of $200 are eligible to defer payment of part of the fees and tuition in accordance with the following regulations:

1. At least 40 percent of fees and tuition, in addition to the service charge specified below, must be paid at the time of registration.
2. Any special fees must be paid at the time of registration including deposits, special course fees, insurance, fines, penalties, special workshop fees, and other special charges or fees.
3. Service charges for the deferred payment plan are based upon the amount deferred as follows:

Amount Deferred	Service Charge
to $ 200	$10
$201-$ 400	$15
$401-$ 700	$20
$701-$1,000	$25
over $1,000	$30

   This charge is nonrefundable and must be paid at the time of registration.
4. The deferred balance is payable in two equal installments which are due approximately four weeks and eight weeks into the semester.
5. Any delinquent installments are assessed an additional $10 late charge, and the registration of the student concerned is subject to cancellation. **If the terms of deferral are not fulfilled, the student loses the right to defer in the future.**
6. Any aid received by a student for purposes of registration (scholarships, student loans, awards, etc.) must be applied toward the registration fees. If any aid funds remain, they are available for room, board, and books.

7. For students who wish to defer their registration fees, a separate table is set up during registration. Students can check at this table to see if they can defer and, if so, a promissory note will be drawn up and signed.
8. In the event a student who owes deferred payments withdraws from school, the difference between the portion of charges that would normally be refundable, if any, and the amount paid on the deferred plan becomes immediately due and payable in full.

Refund of Fees

Students who withdraw in accordance with the regulations governing withdrawals are entitled to the following refund of tuition and regular registration fees (except that for full-time students $17 of the registration fee is nonrefundable once registration is completed; $11 for part-time students). Refunds are based on the official date of withdrawal, which is considered to be the last day of class attendance.

1. When withdrawal is accomplished before the published date classes begin, 100 percent of the fees less $17 is refunded.
2. When withdrawal is completed after classes have begun but before the close of the third week of classes, 90 percent of the fee balance less $17 is refunded.
3. When withdrawal is completed after the close of the third week but before the close of the sixth week of classes, 70 percent of the fee balance less $17 is refunded.
4. When withdrawal is completed after the close of the sixth week but before the close of the ninth week of classes, 50 percent of the fee balance less $17 is refunded.
5. When withdrawal is completed after the close of the ninth week of classes, no refund is given.

Special Fees. When a student has paid special fees (laboratory fees and special course fees including music fees), he or she must contact the respective department for a refund determination.

University Residences

The University of Idaho is a residential campus with about half of the single undergraduate students living in residence halls, fraternities, and sororities. The university recognizes that a student's total education is influenced by the nature and quality of the living environment outside the classroom and encourages the development of an environment in the living groups that will be conducive to broad intellectual growth and greater participation in the life of the academic community. Residence hall living groups benefit from guidance services provided by advisers living with them.

In addition to 23 independent living groups and 27 sororities and fraternities, the university provides accommodations for married students and graduate students. Additional housing is available in Moscow and the surrounding area and information may be requested from the Moscow Chamber of Commerce, 411 South Main, Moscow, Idaho 83843, or the ASUI Housing Referral Office, SUB.

Appropriate regulations are established by the university to ensure acceptable living arrangements for all students.

Residence Halls

The university houses 23 living groups in 8 residence hall buildings and provides meal service for the students who live in 21 of them. Two of the living groups, Steel House (women) and Targhee Residence (men), are cooperatives where students contribute a portion of their time to reduce living costs. Every room contains telephone service and cable hookup for the convenience of the resident. Each residence hall has study lounges, TV lounges, and complete laundry facilities. Our residence hall community provides in-house computer facilities, gameroom and activity center, and a convenience store. Personal items, such as sheets, pillowcases, bedding, and towels, are NOT furnished by the university residence halls and should be provided by the student.

The university recently established a Scholars Residence for students of high academic achievement.

See the section headed "Fees and Expenses" above for the approximate costs of living in the residence halls. More detailed information concerning student housing may be obtained from the University Residence Office, Wallace Residence Center.

Graduate Student Housing

The university offers housing for students who are enrolled in our Graduate College. We offer one-room efficiency apartments in our North Campus Center. Each apartment comes furnished and rent for 1996-97 is $350 a month, all utilities included.

A limited number of rooms are available in the Alumni Residence Center for men and women 21 years of age or older. These single rooms are furnished, complete with hot plates and refrigerator. Leased by the year, these rooms rented for $290 a month in 1996-97.

Family Housing

For married students with families, the university operates four housing communities and more are being developed. Apartments in the communities in 1996-97 rented for about $320-490 a month. One-, two-, and three-bedroom units are available; some are not furnished. These communities also offer apartments for students who require ADA-accessible accommodations. A $175 deposit and last month's rent are required in advance. To apply for an apartment, write to University Residences/Family Housing, Wallace Residence Center.

University-sponsored day care facilities are available on a first-come, first-served basis and located near these communities.

Sororities

Seven national sororities have chapters on the University of Idaho campus. Each chapter owns and operates its own chapter house. These are: Alpha Gamma Delta, Alpha Phi, Delta Delta Delta, Delta Gamma, Gamma Phi Beta, Kappa Kappa Gamma, and Pi Beta Phi. The average cost for living in a sorority is $1,400 a semester, which includes charges for room, board, activity fees, and house corporation building fund. In addition there are pledge and initiation fees that are one-time fees paid to the national organization.

The Panhellenic Council, which is the representative body of the eight sororities, coordinates intersorority activities, formulates policies, and facilitates the Formal Sorority Rush process.

Arrangements for Sorority Living. Membership in a sorority is done by mutual selection, where sororities extend invitations and rushees either accept or decline these invitations. Women who are interested in sorority living should complete the appropriate section of the Admissions Application or write a letter to Panhellenic Council, c/o Student Advisory Services. The selection of members in each sorority is made primarily during Formal Sorority Rush, which is held before the beginning of the fall semester.

The Sorority Rush registration deadline is August 1 and the registration form should be sent to Student Advisory Services. Formal Rush is not the only opportunity to pledge a sorority, yet it is the only time when rush is coordinated by Panhellenic Council and all sororities participate. If you are unable to participate in Formal Sorority Rush but are interested in sorority membership, contact Student Advisory Services, 208/885-6757.

Fraternities

Chapters of 20 national fraternities are maintained on the University of Idaho campus. These are: Alpha Gamma Rho, Alpha Kappa Lambda, Alpha Tau Omega, Beta Theta Pi, Delta Chi, Delta Sigma Phi, Delta Tau Delta, FarmHouse, Kappa Sigma, Lambda Chi Alpha, Phi Beta Sigma, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Tau, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Tau Kappa Epsilon, and Theta Chi. Each of these groups is represented in the Interfraternity Council, which unites them in common service to the university and promotes a spirit of cooperation and self-government among fraternities.

Membership in a fraternity is done by mutual selection, where the fraternities extend invitations to join and rushees either accept or decline these invitations. The membership selection process is facilitated by each fraternity; the university does not make these arrangements. The average cost for living in a fraternity is $1,600 a semester, which includes room, board, and activity fees.

Arrangement for Fraternity Living. Anyone interested in fraternity living should so indicate on the admissions application or write a letter to Interfraternity Council, c/o Student Advisory Services. Those who indicate an interest in fraternity living will receive information from the various fraternities during the spring and summer before they arrive at the university. Fraternity Formal Rush is held before the beginning of the fall semester. If you are unable to participate in Formal Rush but are interested in fraternity membership, contact Student Advisory Services, 208/885-6757.

Student Services

Student Rights, Conduct, and Records

The "Statement of Student Rights," "Student Code of Conduct," and "Student Records Policy" are published in the *Faculty-Staff Handbook* and in the booklet entitled "Policies and Information of Interest to Students." The booklet is available from the Office of Student Advisory Services (UCC 241), the Office of the Vice President for Student Affairs (Student Union Building), and other locations around the campus.. Members of the university community are urged to familiarize themselves with these basic documents.

Academic Advising and Counseling

Academic advising is regarded by the faculty as an extension of the teaching function and, therefore, as an important responsibility of each faculty member. Each matriculating student is provided with the assistance of an adviser, a member of the faculty, who attempts to communicate to students, particularly freshmen, the meaning of higher education and its significance to the student. Advisers also explain university academic requirements and assist individual students in developing programs that satisfy these requirements. The Student Counseling Center and the Career Services Center are available to assist students who are uncertain about their career objectives or are having difficulty with required curricula (see entries for these two centers below). Students should bear in mind that they have the primary responsibility for their own careers; therefore, they must take the initiative in seeking out advice and counseling. Assistance, both formal and informal, from faculty advisers and specialists, is available once sought.

Tutoring and Academic Assistance Center

The Tutoring and Academic Assistance Center (TAAC) is the university's central academic support program. Its services include: a freshman study skills class (see Inter 101 and 102 in part six), tutoring in specific classes, group study sessions for specific classes, individual counseling for academic difficulties and for improving reading skills, and a faculty-sanctioned test file.

All services of the TAAC are free to University of Idaho students. The TAAC is located at the corner of Idaho and Line Streets (phone 208/885-6307).

Mathematics and Statistics Assistance Center

The Mathematics and Statistics Assistance Center (MSAC) (corner of 7th and Line Streets; 208/885-5717) was developed to give assistance to students taking lower level mathematics or statistics courses. The staff work to provide a friendly, nonthreatening environment where students will feel comfortable to work, ask questions, and learn mathematics or statistics outside of class.

The MSAC is open for mathematics tutoring Monday through Thursday, 12:30 to 5 p.m. and again from 7 to 9 p.m.; Friday from 12:30 to 3:30 p.m.; and Sunday from 3 to 5 p.m. Statistics tutoring hours vary, so please check with the MSAC Office for scheduled times. The MSAC is open in the mornings for those who want a quiet place to study.

Students can visit the MSAC on a drop-in basis during the hours above for mathematics help and during various scheduled times for statistics help to get assistance with homework problems. The MSAC also shares the building with a Computer Services lab that has a number of computers that provide support for mathematics and statistics courses, as well as tutorial programs for review and practice. The MSAC has a library of short lectures on video that can be viewed in the MSAC to assist students with particularly difficult topics.

Student Advisory Services

The University of Idaho is comprised of a diverse student population: 25 percent of the students are married; 45 percent of the students live on campus in 20 fraternities, 7 sororities, and 23 living groups in 8 residence halls. Approximately 20 percent of the students are from out of state, and the international students who hold nonresident alien visas who represent 40 different countries. Students spend two-thirds of their time in out-of-class activities including clubs, student government, studying, intramurals, and intercollegiate activities.

A diverse student population requires that UI have a diverse student services program. Student Advisory Services provides a variety of services that focus on assisting students. Programs and services include advising students in living groups as well as those off campus, and ethnic minority students, and veterans. In addition, Student Advisory Services coordinates New Student Orientation, Women's Center, Child Care Center, and National Student Exchange Program, student leadership activities and fraternity/sorority programs, and coordinates student discipline/conduct activities.

This wide range of programs and services includes assisting families and students who may experience crisis situations that disrupt normal academic activities.

Staff members in Student Advisory Services are trained to work with individuals and groups of students and they serve as a liaison between students, departments, and agencies on and off campus.

All of the services and programs of Student Advisory Services are supportive of the academic mission of UI and are an integral part of the student's total education at the university.

Women's Center. The Women's Center serves as the focal point for women's concerns at the university and in the community. It provides a warm, comfortable place where people can explore what it means to be women and men in a changing world. It brings together people of diverse backgrounds who share a commitment to opportunity, equality, and justice for women.

Programs and services at the Women's Center include: lunch programs—presentations and discussions every Tuesday and Wednesday at 12:30 covering a wide variety of topics; library—a circulating library of over 800 books dealing primarily with information and research about women and women's lives; resource files—vertical files of information about women and issues of particular concern to women; information and referral—answers to questions and referral to other agencies and services; advocacy—support and assistance to survivors of rape, domestic violence, and other crimes; crisis intervention—peer counseling, support, assessment and referral for students in crisis; lounge—a place to relax, read, study, meet friends, and exchange ideas; outreach—programs and speakers for campus

and community organizations; newsletter—a monthly publication including information about current programs and services and news about women's issues. The Women's Center is the headquarters for the Campus Rape Education Program, which trains and supervises peer student educators through a Health and Safety class. The center assists with the Non-traditional Students Program.

National Student Exchange. National Student Exchange (NSE) gives University of Idaho students the opportunity to attend one of 120 colleges or universities throughout the United States for one or two semesters. UI students pay UI fees or the resident fees of their host campus. Students normally need to apply by February for the next academic year.

Credits and grades earned on exchange are incorporated into the student's University of Idaho academic record and grade-point average, and credits earned fulfill University of Idaho residence-credit requirements.

To qualify for participation in the NSE, a student should: (1) be a full-time University of Idaho student; (2) be a sophomore, junior, or first-semester senior at the time of exchange; and (3) have a grade-point average of 2.5 at the time the application is filed. Information and applications may be obtained from the NSE Office in Student Advisory Services, UCC 241 (208/885-7979).

Services for Students with Disabilities. The University of Idaho has established services for students with disabilities in accordance with Section 504 of the Rehabilitation Act of 1973 as amended in 1992, and with the Americans with Disabilities Act (ADA) of 1990. Disabled Student Services provides disability support services to students with temporary or permanent disabilities. Students requesting assistance must provide appropriate disability documentation to be kept on file with the Disabled Student Services office and must provide adequate advance notice of such requests. These services include, but are not limited to, readers, note takers, sign language interpreters, disabled parking and campus accessibility information, preregistration assistance, new student orientation, proctor and test-taking arrangements, or help with any other disability needs. The Campus Guide for People with Disabilities describes some of these typical services. The guide is available in several campus locations, including Student Advisory Services and the University Information Center. The guide can also be provided in large print, braille, or on audio cassette tape with 10 working days' notice to Disabled Student Services.

Prospective students are encouraged to visit the campus before their enrollment.

Students are asked to notify Disabled Student Services as soon as possible to discuss specific disability-related concerns and needs. (Students requiring academic assistance and learning disabled students should also contact Student Support Services.) This voluntary self-identification enables Disabled Student Services to determine appropriate and reasonable accommodations to make classes, programs, services, and activities accessible to people with disabilities. This information will be kept in strict confidence and has no effect on admission to the university. Federal law prohibits the Admissions Office from making preadmissions inquiries about disabilities. Information regarding disabilities, voluntarily given or inadvertently received, will not adversely affect any admissions decision.

For further information or to make arrangements, contact the coordinator of Disabled Student Services in Student Advisory Services, UCC 228 (telephone 208/885-7716; TTD [for deaf users] 208/885-7471).

Veterans' Benefits for Educational Assistance. The Office of Veteran Affairs assists veterans, dependents, reservists, and national guardsmen who are eligible for educational benefits through the Veterans Administration. Students expecting to receive veterans benefits must apply for benefits and should contact the Office of Veteran Affairs at least six weeks before the beginning of each semester.

To qualify for payments, all veterans must be released under honorable conditions. To receive full benefits, a veteran must be pursuing an approved course of study leading to a degree or other professional objective. To be considered full time, undergraduate students must carry 12 credits or the equivalent, and graduate students must carry 9 credits or the equivalent (see regulation O-1 in part 3).

An advisory service is available to veterans and additional information, advice on benefits, or application forms may be obtained by writing to the veterans' adviser in Student Advisory Services (UCC 241).

Office of Multicultural Affairs (OMA)

UI is committed to establishing and maintaining a campus environment that promotes cultural diversity. This commitment is backed by the provision of services for needs that are specific to Asian American, African American, American Indian, Hispanic/Latino American, Pacific Islander, and nontraditional students.

The multicultural student adviser as a part of the Office of Multicultural Affairs provides assistance to multicultural students in the areas of advising, scheduling, advocacy, financial aid planning, and accessing student services programs. OMA also targets and resolves issues that threaten recruitment and retention of multicultural students. This includes helping multicultural students access federal and university financial aid, especially scholarships that are targeted for multicultural students.

The multicultural student adviser also coordinates multicultural student activities and student organizations. Multicultural student associations assist the OMA in planning and carrying out campus activities of special interest to their group's members. Some of the activities are the cultural heritage months, student leadership retreat, regional student meetings, and campus cultural educational activities. Multicultural student organizations serve a vital role in helping to promote cultural diversity on the UI campus. For further information contact the director, OMA, (208) 885-2958 or e-mail ljmorris@uidaho.edu.

Student Support Services

Student Support Services is a federally funded educational assistance program that helps participating students to identify and pursue their educational goals, to establish, maintain, or improve their academic performance, and to work through the challenges of university life.

Designed to complement other campus resources, the Student Support Services program offers participating students **individualized** educational planning, academic monitoring, learning and study skill development, and tutoring. Specialists in reading, writing, and mathematics are also available to work with students who are seeking to improve their basic skills or who are experiencing difficulty in these areas. In addition to academic assistance, Student Support Services provides one to one personal support. This support is particularly helpful for students with special needs (e.g., delayed or re-entry, nontraditional preparation, a physical or learning disability, academic probation and reinstatement, or provisional admission).

To be eligible for services, a student must be a U.S. citizen or permanent resident and must be either low income, OR from a first generation family (neither parent has earned a baccalaureate degree) OR have a learning/physical disability. Students are accepted into the program on a first-come, first-served basis and are encouraged to contact the office as early in the semester as possible. For more information, stop by or call, Continuing Education 106 (208/885-6746).

Learning Disabled Students

Students with learning disabilities are encouraged to contact the Student Support Services office as soon as possible in order to obtain timely information and to arrange for accommodative services (e.g., extended examination time, private test space, reader services). Although the program offered through Student Support Services is not designed exclusively for students with learning disabilities, many of the services and support available through this pro-

gram are essential for academic achievement. Documentation is required for academic accommodation and limited on-campus assessment is available. Contact Student Support Services, Continuing Education 106, or telephone 208/885-6746 for more information.

Student Counseling Center

Many students find that it is helpful to discuss their concerns with a professional who takes the time to listen and understand. Psychologists at the Student Counseling Center are available to meet with students to discuss personal, educational, or vocational concerns. Counseling can help students learn more about themselves and develop new skills to deal more effectively with personal problems, problems with alcohol or other substances, relationships, and academic pressures. Counseling sessions are confidential.

The center offers the following services: individual counseling, group counseling, couples counseling, educational and career counseling, educational presentations, referral, testing, and assessment of learning disabilities. In addition to psychological and vocational testing, the center coordinates and administers all of the national testing programs such as the GRE, ACT, NTE, LSAT, and TOEFL.

The Counseling Center also offers the following career development and counseling services to help students select a major and a career direction that is right for them: (1) individual and group counseling for major and career decision making, (2) career interest testing and interpretation, (3) career information including books, pamphlets, and vocational biographies, (4) computerized career exploration system (Discover), and (5) college catalogs for the Northwest region.

Counseling services are available to full-time students without charge. Limited services are available for spouses. A fee is charged for some assessment and testing services. students may schedule an appointment by coming to the Student Counseling Center, UCC 309, or by calling 208/885-6716.

Student Health Service

The Student Health Service is open when the university is in session, providing care to full-time and part-time students, student spouses, and dependents.

Patient care is available for fall, spring, and summer sessions, except during university holidays. During fall and spring semesters, the Student Health Service is open Monday through Friday, 7:30 a.m. to 6 p.m. (Thursdays it opens at 9 a.m.). Summer hours are 8:30 to 11 a.m. and 1 to 4 p.m. The office operates on a walk-in basis, with no appointment necessary. Appointments are also available for illness and injuries, physical examinations, and PAP smears by calling 885-6693. Emergency care is available at Gritman Medical Center in Moscow when the Student Health Service is closed.

The Student Health Service provides out-patient care only. When hospitalization is necessary, patients will be admitted to Gritman Medical Center. Psychiatric evaluation is available from consulting psychiatrists, by referral from the Student Health Service or the Student Counseling Center. Nominal fees are charged for out-patient visits, certain procedures, and special services such as lab tests, x-rays, and medications.

Students and eligible family members are encouraged to visit the Student Health Service and acquaint themselves with the services available (phone 885-6693; Pharmacy 885-6535).

A 24-hour Dial-a-Nurse Program is available by calling 336-4151.

Health and Accident Insurance Coverage

All students enrolled in academic courses for credit (faculty, staff, retirees, and senior citizens excepted) are automatically covered by **accident insurance** during the academic sessions. The insurance does not cover illness. Full-time students are covered 24 hours a day subject to exclusions and limitations in the policy. Coverage for part-time students is limited to accidents that occur on the university campus, at the student's residence, on property leased or owned by the university wherever located, and—except as otherwise limited—to participation in official university programs and travel authorized by the university. Benefits are payable at 80 percent of usual, customary, and reasonable medical expenses due to accident, subject to exclusions and limitations in the policy. Limits of this coverage are $10,000 in benefits paid after a $150 deductible per accident ($500 deductible for Club Sports and intramural accidents). This insurance is excess of other valid and collectible insurance.

A **health and extended accident insurance** plan and a separate **catastrophic medical insurance** plan are available to University of Idaho students enrolled for academic credit and paying fees for six or more credit hours, and their spouses/children. These insurance plans are intended to supplement the services provided at the Student Health Center and the insurance protection provided by the basic accident insurance described above.

Health and extended accident insurance is designed to offset expenses resulting from a major accident or serious illness that might require medical care, hospitalization, and surgery beyond services provided at the Student Health Center or covered by basic student accident insurance. When purchased for the academic year (or by semester), health and extended accident insurance provides coverage for a full year whereas the Student Health Service and the protection of the basic accident plan are available only during regular academic sessions. Health and extended accident insurance supplements Student Health Services by providing coverage for medical services that must be obtained elsewhere such as hospitalization or referral to a specialist.

Students who do not decline insurance when preregistering for classes will be covered by optional health and extended accident insurance providing $50,000 in coverage at 80% of UCR subject to a $150 deductible per year. Students may also elect to purchase optional catastrophic insurance extending coverage to $250,000 for a student ($100,000 for dependents), payable at 80% UCR, subject to a $50,000 deductible (the amount covered by the other optional plan). Insurance may also be purchased directly from the agent. Students who do not have other health insurance and students with dependents are especially urged to purchase health and extended accident insurance. Dependents must purchase insurance within the 30-day enrollment period following registration. International students who hold nonresident alien visas must either purchase health and extended accident insurance or document coverage by equivalent insurance for themselves and any accompanying dependents as part of their obligation to establish proof of financial responsibility for expenses incurred while attending the university. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment.

Brochures describing the Student Health Service, the accident insurance plan, the health and accident insurance plan, and the optional catastrophic major medical plan are available from the Student Health Service, the Office for Administrative Affairs, or the agent's office and are distributed during registration.

Student Financial Aid Services

Financial aid is federal, state, university, and local assistance provided to eligible students through the Office of Student Financial Aid Services in the form of scholarships, grants, loans, and part-time work to help pay the cost of attending college. These programs may include scholarships, Federal Pell Grants, Federal Supplemental Educational Opportunity Grants (FSEOG), State Student Incentive Grants (SSIG), Federal or Idaho State Work Study Programs (FWS or IDWS), Federal Perkins Loans, William D. Ford Federal Direct Loans, and Federal Direct Parent Loans to Undergraduate Students (PLUS). Financial aid is expected to supplement student and family resources. While many students do live on their financial aid, it was never intended to be the sole source of income.

Application Process

Priority Dates. Because funds are limited, to receive priority consideration for all funds the student applicant must submit the Free Application for Federal Student Aid (FAFSA) so it is received by the servicer by the priority date each year. The priority date is February 15. This priority date applies to students attending both fall and spring semesters. The FAFSA should be mailed no later than the end of January in order for it to reach the processor by the priority date. In addition to the FAFSA, all students who are new to the university must also have applied for admission by the February priority date. Students who meet all of these priority dates will receive first consideration for all funds for which they qualify. Students who do not meet all of these priority dates will still be considered for Federal Pell Grants and William D. Ford Federal Direct Loans, which are available throughout the year.

Enrollment. Financial aid during the academic year is usually awarded in expectation of full-time enrollment: 12 credits per semester for undergraduate students, 10 credits per semester for law students, or 9 credits per semester for graduate students. If a student is receiving aid as a full-time student, he or she must be preregistered as a full-time student to receive the aid at registration. Students are required to enroll full time to receive scholarships, unless the donor specifies special circumstances allowing part-time enrollment. Students who meet all priority dates, but who enroll less than full time, will be considered for federal financial aid at a lower priority than those who are enrolled full time. Any aid given for less than full-time enrollment is generally in proportion to the student's credit load. All students must enroll at least half time (6 credits per semester for undergraduate students or 5 credits per semester for graduate or law students) to be considered for most types of financial aid.

Scholarships. Students who wish to apply ONLY for scholarships not based on financial need and no other types of financial aid must do one of the following in order to receive consideration: (1) Students who are attending the university for the first time only need to have a complete application for admission on file by the February 15 priority date. (2) Students who are enrolled at the university during the prior spring semester in at least 9 credits for undergraduate students, 10 credits for law students, or 6 credits for graduate students will be considered automatically (without completing any additional forms) for scholarships not based on financial need. (3) Students who are enrolled at the university for the prior spring semester but in less than 9 credits for undergraduate students, 10 credits for law students, or 6 credits for graduate students will need to notify the scholarship coordinator in Student Financial Aid Services by February 15 of their interest in scholarships not based on financial need. (4) Students who previously attended the university, but were not enrolled during the prior spring semester, must file an "Application for Readmission" with the Admissions Office by the February 15 priority date.

Work Study. Students who are awarded Federal Work Study or Idaho State Work Study will be offered part-time employment in order to earn their award amount. Applications for these programs are part of the general application for financial aid. Awards are made based on financial need to students who meet all the priority dates.

Direct Loans. The University of Idaho participates in the William D. Ford Federal Direct Loan Program. Students applying for loans will not need to complete a loan application from a lender or guarantee agency used with the Federal Family Educational Loan Program. Loan funds will be provided to the student directly from the U.S. Department of Education through the University of Idaho rather than funds coming from a bank or lender. Students will be awarded these loans and asked to sign and return a promissory note to UI. Once the signed promissory note is received, the funds will be credited to the student's account.

Eligible Programs. Students who have one or more bachelor's degrees, who are working toward an additional undergraduate degree or a teaching certificate and who are not yet admitted to graduate school, are considered to be second undergraduates and are not eligible for federal grant programs (Pell, SEOG, or SSIG). They are restricted to undergraduate borrowing limits for loan programs. Students who are admitted or enrolled in the College of Graduate Studies or the College of Law are considered to be graduate students, and are eligible to apply for all financial aid programs except Federal Pell Grants and Federal Supplemental Educational Opportunity Grants. Nonmatriculated students (those not enrolled in a degree program) may not be considered for any type of financial aid. Correspondence classes may not be funded by any type of federal financial aid.

Satisfactory Academic Progress. To receive state and federal financial aid, a student must be in good academic standing according to the financial aid academic satisfactory progress standards. (It should be noted that the eligibility criteria for financial aid differ from those for academic eligibility contained in regulation L-5.) All students receiving federal financial aid will be evaluated for satisfactory progress at the end of each academic year to determine continued eligibility for the following year.

Undergraduate Requirements. An undergraduate student is considered to be making satisfactory academic progress for financial aid purposes if he or she has a cumulative GPA of at least 1.6, having completed 0-32 credits; or 1.8, having completed 33-64 credits; or 2.0, having completed 65 or more credits. In addition, the student must have completed (received a grade for) a minimum of 24 credits if he or she was enrolled full time for the academic year, or a minimum of 12 credits if he or she enrolled full time in only one semester. If the student is enrolled less than full time, he or she must complete a minimum of 12 credits for the academic year (6 for one semester) if enrolled half time, or 18 credits for the academic year (9 for one semester) if enrolled three-quarter time. Students must meet both the minimum cumulative grade-point requirement and the minimum completed credit requirement to be in good standing. A student who fails one or both standards is suspended from eligibility for federal financial aid. Once a student has accumulated 152 credits (184 credits for architecture majors) toward a baccalaureate degree but has not graduated, or completes 150% of the published time frame of the program for a full-time student, he or she is not eligible for federal financial assistance as an undergraduate student.

Graduate Requirements. A graduate student is considered to be making satisfactory academic progress for financial aid purposes with a cumulative grade-point average of at least 3.0. In addition, the student must have also completed (received a grade for) a minimum of 18 credits if enrolled full time for the academic year, or a minimum of 9 credits if enrolled full time in only one semester. If the student is enrolled less than full time, he or she must complete a minimum of 10 credits (5 for one semester). Once a student has accumulated 42 credits toward a master's degree, 72 credits toward a specialist or Master of Fine Arts degree, or 96 credits toward a doctoral degree, he or she is no longer eligible for federal financial assistance.

Appeals Process. Students who are suspended from eligibility for federal financial aid may appeal this decision. The student must contact the academic dean of the college they were enrolled in when suspended from financial aid. The student's academic dean may recommend a waiver of the above criteria in a signed memorandum to the director of the Office of Student Financial Aid Services, who makes the final decision. A denial by the director of student financial aid services may be appealed in writing to the Student Financial Aid Committee, and then to the Administrative Hearing Board. Students suspended from receiving financial aid for reasons other than too many cumulative credits may also reinstate their aid eligibility by successfully completing a semester of 12 credits with a GPA of at least 2.0 for undergraduate students, or 9 credits with a GPA of at least 3.0 for graduate students, without receiving federal financial aid. Once the successful semester has been completed, a written request for reinstatement must be submitted by the student to the Office of Student Financial Aid Services for review.

Students who have had their athletic scholarship aid reduced or eliminated may appeal the loss of funds by submitting an appeal in writing to the chair of the Student Financial Aid Committee.

Financial aid policies and procedures are subject to change without notice to assure compliance with federal and university regulations. The Office of Student Financial Aid Services may be contacted for current information. Additional information is available in a student financial aid brochure published each year.

Leadership and Academic Achievement

Many awards are made each year in recognition of outstanding achievement both in academic and nonacademic pursuits. For information on academic awards, contact the individual academic department. For other awards, contact the ASUI Office in the Student Union.

Recreational, Social, and Extracurricular, and Co-curricular Activities

The Student Union is the center of campus life and provides programs, amenities, and services to enhance the educational experience of UI students, their families, and guests. Located at 6th and Deakin Streets, the newly renovated Student Union serves as the campus center of the University of Idaho.

Many of the programs and activities at the Student Union are co-curricular in design, linking students' academic endeavors with out-of-class learning experiences. Students may choose to become involved in numerous Student Union functions and activity programs that meet their personal goals for individual growth and leisure time activity. UI students and student organizations in the union are integral to the planning and implementation of educational, cultural, and recreational activities for the campus.

Programs and activities in which students may become involved in the union include:

Student Media—responsible for publishing the *Argonaut* newspaper, the *GEM* yearbook, and for operation of the 24-hour student radio station KUOI-FM. Students work in all aspects of writing and producing the newspaper and yearbook, and for 24-hour-a-day programming on the radio.

ASUI Productions—responsible for development of entertainment and special event programs throughout the school year. Events include dances, concerts, films, speakers, and traditional activities such as Homecoming and the Blood Drive.

ASUI Government—this includes the Senate and Executive Branch, committees, and boards. ASUI also maintains an office for the attorney general and publishes an off-campus housing list. In addition, the Graduate Student Association maintains an office in the Student Union.

Outdoor Program—responsible for creating a well rounded program of instructional and recreational outdoor experiences. Trips and activities include rock climbing, mountaineering, rafting, kayaking, cross country skiing, backpacking, winter camping, sea kayaking, and mountain biking. Eight credit classes are offered as part of the Outdoor Recreation minor. The program also offers an extensive rental inventory for outdoor activities.

Leadership Development—formalized credit and noncredit leadership training opportunities are available through the Student Union. Training takes the form of short workshops as well as a two-credit academic course. A resource center for leadership development is located in the Student Organization Center.

Student Organizations—the Student Organization Center is home to a variety of organizations along with mailboxes for registered student groups. Organizational development workshops, funding, and other resources are available through an application process.

Multicultural Area—multicultural student groups plan activities and develop their organizations through resources provided at the Multicultural Center. The center provides resources, office space, and a lounge area for multicultural student organizations.

Underground Recreation Center—the center offers the recreational activities of bowling, billiards, and darts. Special nights, tournaments, and bowling leagues are planned. An intercollegiate bowling team is sponsored and physical education classes in bowling are offered.

BRIDGES—the service-learning program places students in volunteer service opportunities locally, nationally, and internationally, and coordinates efforts with academic courses to include service as a part of the curriculum.

University of Idaho students may organize or join associations to promote their common interests. There are over 130 student organizations on campus with varied objectives and programs. A list of these organizations, together with names of current officers, is maintained and information concerning them may be obtained from the ASUI secretary.

Other services offered at the Student Union include meeting rooms for nonacademic programs, a PC/Macintosh computer lab, a video arcade, the new food court, catering services, outdoor equipment rental, ticket sales to local and regional cultural events, ongoing art exhibitions, a copy service, a hair salon, the credit union, bank machines, lounges, and administrative offices. Tours of the building and the campus originate from the Office of New Student Services on the ground floor. Further information on Student Union activities and services may be found at 208/885-6484.

Recreational facilities located on the campus include the Kibbie-ASUI Activity center, indoor and outdoor tennis and handball courts, a climbing wall, golf course, and swimming pools.

Intercollegiate Athletics

Idaho has a strong intercollegiate athletic program for men and women.

The teams are known as the Vandals. The men's program includes football, basketball, cross country, indoor and outdoor track and field, tennis, and golf.

The women's program consists of basketball, volleyball, cross country, indoor and outdoor track, tennis, and golf.

The Vandal teams compete in NCAA Division I and football competes in I-A with over 100 other institutions across the country.

The men's and women's programs compete as members of the prestigious Big West Conference. In addition to Idaho, Big West Conference members include Boise State University, California Polytechnic State University at San Luis Obispo, California State University at Fullerton, Long Beach State University, New Mexico State University, University of California at Irvine, University of California at Santa Barbara, University of Nevada, University of North Texas, University of the Pacific, and Utah State University.

The athletic program is fortunate to have splendid facilities that are among the best in the Northwest. The Kibbie-ASUI Activity Center (also known as the "Dome") houses the Athletic Department offices, team locker rooms, weight room, and athletic training room. The Dome itself is the site for football and basketball games. The 16,000 seats for football and approximately 6,000 seats for basketball make it an outstanding facility. The historic Memorial Gymnasium is home for Idaho volleyball and women's basketball games. Track and field and tennis make great use of the Dome as well with the five-lane, 290-meter track and the nine indoor tennis courts. The 400-meter outdoor track stadium is a real asset. The 18-hole championship golf course and numerous outdoor tennis courts complete the facility picture.

New Student Services

The Office of New Student Services is the outreach arm of the Admissions Office. NSS counselors represent the University of Idaho to prospective students and assists those students and their counselors and parents with decisions about higher education. Staff members visit high schools and present programs about the university to interested students, attend college fairs, distribute brochures, coordinate the flow of information from UI's colleges to students who express particular educational interests, and answer questions raised by students, counselors, and parents.

New Student Services also sponsors a campus visitation program that offers prospective students an opportunity to spend a day on campus. Visiting students and their families may tour campus and living groups. NSS can provide overnight lodging, arrange appointments with faculty members, suggest classes and activities that prospective students may attend. For more information, call the Office of New Student Services, 208/885-6163, or 800/422-6013.

Career-Related Services

The university is committed to assisting students with a wide range of career-related issues from determining career interests, choosing majors and careers, developing skills and experience through academically relevant work, preparing professional job or intern search materials, and helping with job searches, to providing on-campus interviews. Career-related services are available through a number of different offices on campus. Students are encouraged to use a full range of services throughout the university including seeking advice from academic departments, faculty members, and other appropriate campus programs. Three programs with primary responsibilities related to career development are listed below.

Student Counseling Center. All students face decisions about selecting a major and a career direction that is right for them. Counseling and testing are available through the Student Counseling Center to help students explore and define their interests, abilities, values, and other needs related to choosing a major and a career.

The Counseling Center offers the following services: (1) individual and group counseling for major and career decision making, (2) career interest testing and interpretation, (3) career information including books, pamphlets, and vocational biographies, (4) computerized career exploration system (Discover), and (5) college catalogs for the Northwest region.

For more information, contact the Student Counseling Center, UCC 309 (208/885-6716).

Cooperative Education. Cooperative Education is an academic program in which students participate in academically relevant work experiences to clarify career and academic goals, and reinforce and expand classroom study. The university's program serves undergraduate and graduate students of all majors. The program is supported by a network of faculty and administrative cooperative education coordinators who are central to getting information to students and advising students about academic options based on departmental requirements. To be eligible for Cooperative Education experiences, students must be in good academic standing in their degree program. Students must continue to be in good academic standing and perform to the employer's satisfaction at the work site to remain in the Cooperative Education placement.

National, regional, and local employers request Cooperative Education students in a wide variety of majors and for placements during any semester. Placements are typically one semester; however, more employers are requesting students with the flexibility to work two semesters. Specific compensation is determined by the employer offering the position. Cooperative Education also has listings for non-paid (volunteer) internships that provide students with valuable skills and experience.

Cooperative Education works closely with employers, faculty, and students to ensure that work experiences have academic merit, to develop appropriate learning agreements, and to monitor work experience progress. The granting of credit and course grades is determined by academic departments based on departmental requirements, the number of hours spent during the placement, and the nature of additional projects assumed by the student. With departmental approval, students may register for credit through a 298/398/498/598 internship course sequence.

The Cooperative Education staff assists students in finding appropriate placements, in developing effective application materials including resumes and cover letters, and in seeking opportunities to fit their individualized academic and career interests. This assistance is provided through individual resume critique and internship search sessions. Students are encouraged to work with Cooperative Education to ensure a smooth transition from university to work site through workshops and individual contact.

Several new programs have been developed to provide support to students. A Career Fair cosponsored with Career Services is held each year. In 1995, over half the employers represented offered internship or cooperative education opportunities. In 1994-1995 outreach to employers included workshops to better acquaint students with internship opportunities with local businesses. In 1995, a staff person was hired to work in the UI/Boise Center to develop additional placements with employers in the Treasure Valley area. Outreach will also include similar efforts at the university's centers in Coeur d'Alene and Idaho Falls.

Many of the workshops and special services are coordinated with Career Services and promoted through *Career Development News (CDN)*. A weekly Cooperative Education Orientation is scheduled Tuesdays from 12:30 p.m. to 1:15 p.m. For more information including a complete listing of programs and services, contact Cooperative Education, Education 204 (208/885-5822), e-mail cooped@uidaho.edu. Information is also updated regularly on our home page (http://www.uidaho.edu/cooped).

Career Services. The purposes of the Office of Career Services are to (1) assist UI students in any field of study and at any academic level in identifying and working toward their career objectives; (2) assist students and alumni in obtaining employment appropriate to their ability, education, and experience; and (3) service the state, region, and nation by providing information on curricula and promoting UI graduates to prospective employers. This includes an active campus recruiting program that attracts employers interested in hiring UI graduates upon graduation. The UI is the most heavily recruited campus in Idaho.

Each semester Career Services produces a new issue of *Career Development News (CDN)*. This newsletter, written with contributions from Cooperative Education and the Counseling Center, contains articles on contemporary career issues and a calendar of special events and regular programs offered across the campus to help students build career selection and job finding skills. These include everything from an annual Career Fair featuring dozens of visiting employers, to small group sessions on resume writing and related topics. Nearly 100 programs and events were scheduled for the fall 1994 edition of *CDN*. Copies of *CDN* are distributed throughout the campus and are also available at Career Services.

Career Services prides itself on offering individual advising to all UI students and prospective students. Although appointments are strongly recommended, many students find an appointment with a Career Services professional is available the same day they make a request for assistance.

For further information contact Career Services, Brink Hall G-11 (208/885-6162).

Student Employment Opportunities

Student and Temporary Employment Services (STES), located in the Student Union Building, is open to assist students in gaining employment experience and supplementing financial support. Office hours are Monday through Friday from 8 a.m. to 5 p.m. Hiring departments across campus post available positions through the STES office. All University of Idaho students are eligible to participate in the program. Hiring departments and students work together to identify a work schedule that emphasizes the student's main objective—obtaining a higher education degree. The learning/working experience goal is to provide a work environment that enhances the student's academic experience. Job vacancies and applications are available at the STES office or information is available on the Internet at http://www.uidaho.edu/hrs/sep. *All employment and payroll forms for students are completed at the STES office, SUB, phone 208/885-4500 or 885-2889.*

Alumni Association

The University of Idaho Alumni Association exists to help create and coordinate the support of alumni and friends of the university in strengthening the academic, research, service, and leadership-building programs of the institution. It also provides individual alumni services to its members throughout the world.

All former students who earned 90 or more credits at UI and associate and honorary alumni are members of the association. Those stu-

dents with 26-89 credits may be added if they request membership. The director of alumni relations and staff, along with an elected board of directors, guide the many programs and activities of the more than 63,000 members.

The Alumni Association strives to keep alumni informed about their alma mater, encourage alumni moral and material support, and apprise the university community of alumni opinion. Through a variety of awards, the association honors outstanding alumni, students, or other individuals who provide exceptional service to the institution or state of Idaho. Scholarships are given by the association to help both entering and continuing students at the university.

Alumni maintain close ties with the university as a result of Alumni Association services, such as travel tours, continuing-education programs, and campus and worldwide gatherings for special UI occasions, including Homecoming and Silver and Gold Days. The Alumni Office gathers and maintains records of alumni, and this contact service is available to the university and its alumni. The association also provides and organizes support for the university through active organizations, such as the Parents Association and the Student Alumni Relations Board.

Areas of recent emphasis for the association include informing prospective students about the university, providing continuing education opportunities, establishing a Career Network, and increasing volunteer support through the development of alumni chapters and constituency groups. The association is also strengthening and expanding its membership services, with the Alumni Visa Card, the Alumni Network long distance affinity program, and the Quest travel discount program.

Religious Activities

The university is served by three campus religious centers: Campus Christian Center, corner of University and Elm; LDS Institute of Religion, 902 Deakin; and St. Augustine's Roman Catholic Center, corner of Sixth and Deakin. These centers provide opportunities for the study and practice of religion as well as resources in counseling and guidance.

All of Moscow's churches provide opportunities for religious development for University of Idaho students.

Nontraditional/Adult Student Services

Are you older than 24? If so, you belong to a large part of our student body: 40 percent of our students are nontraditional, adult re-entry learners. The university's faculty and staff are aware of the unique experiences, interests, and concerns of our older students and the university provides a range of services and programs to help meet your needs.

The following university faculty and staff members are contact people for assisting nontraditional/re-entry students:

Bruce Pitman, Dean of Students, 208/885-6757
Roxanne Schreiber, Student Support Services, 208/885-6746
Judy Wallins, Tutoring and Academic Assistance Center, 208/885-6307
Betsy Thomas, Women's Center, 208/885-6616
Martha Kitzrow, Student Counseling Center, 208/885-6716

Getting Started

Transition Seminar: The Tutoring and Academic Assistance Center offers a two-credit orientation class each fall for nontraditional/re-entry new students; the class provides students with a support group as well as information about campus and community resources and study skills. Call the TAAC (208/885-6307) for registration information for this class.

Academic Support Services

The university offers a range of academic assistance programs, designed to help students enhance academic achievement and/or improve performance in specific course areas. These programs include:

Student Support Services. Student Support Services is a federally funded program that is particularly helpful for nontraditional students (e.g., delayed or re-entry students, nontraditional preparation, and students with families). Designed to complement other campus resources, this program helps participating students to adjust to the university experience, to identify educational goals, to establish or improve their academic performance, and to work through the challenges of university life. Phone 208/885-6746. For more information, see "Student Support Services" in part 2.

Tutoring and Academic Assistance Center. See "Tutoring and Academic Assistance Center" in part 2.

Mathematics and Statistics Assistance Center. This program was developed to give assistance to students taking elementary mathematics or statistics courses. Students can go to the center to work, ask questions, and learn mathematics or statistics outside of class. Individual help is available on a drop-in basis, or students can attend regularly scheduled small group sessions for specific classes. The MSAC is located on the corner of 7th and Line Streets, and offers weekday, evening, and weekend hours; stop by or call the MSAC (208/885-5717) for information and a schedule of hours.

Writing Center. The English Department offers peer tutoring assistance in writing to all UI students. Students can see tutors on a drop-in basis or they can schedule an appointment by calling the center. Writing Center tutors assist students with analyzing writing strengths and weaknesses, developing ideas, and improving focus, organization, grammar, and punctuation. Tutors do not proofread or edit papers, write papers for students, grade papers, or speculate on grades papers will receive. The Writing Center is located in Room 5 of the Psychology Building and offers weekday, evening, and weekend hours; stop by or call the Writing Center (208/885-6644) for information and a schedule of hours.

Career Decision-Making and Information

Many students at UI are exploring major and career options and can benefit from the university's career-related programs. For a description of these programs, see "Career-Related Services" in part 2.

Child Care Services

UI Childcare Resource and Referral Center. The UI Childcare Resource and Referral Center provides information about child care, costs, and financial assistance in the Moscow community. Contact the R and R office from 12:30 to 4:30 p.m., Monday-Friday, at 208/885-5927.

University Programs. The Early Childhood Learning Center, located on the edge of campus, offers child care, early schooling, and after school programs for children through 12 years of age. Call 208/885-6414 for information.

The Margaret Ritchie School of Family and Consumer Sciences's Child Development Laboratory provides child care opportunities for preschool children. Call 208/885-6332 for information.

Computer Education

Re-entry students may find that they need to acquire or sharpen computer skills in order to complete class assignments. The university's Computer Services Office provides workshops in computer skills throughout the school year; call the Computer Help Desk (208/885-APAL) for information on these workshops. See "Computer Services" in part 1 for a complete description of this office's services.

Counseling Services

Individual and Couples Counseling. The university's Student Counseling Center offers students counseling for personal, educational, or vocational concerns; couples counseling is also provided. Student Counseling Center services are free to full-time students and with some limitations to spouses. The center also provides assessment and testing for learning disabilities; a fee is charged for this service. The Student Counseling Center is located in UCC 309, phone 208/885-6716.

Family Counseling. The Family and Children Services Office, at 200 South Almon Street in Moscow, provides family counseling on a sliding-scale fee basis to families with children under 18, for child-centered problems. Call 208/882-2432 for information.

Credit for Life Experiences

Nontraditional re-entry students often have university-level knowledge or competence gained from work, community service, travel, or private study. Students may be awarded lower- or upper-division credit for such knowledge; see regulation I-5 under "Advanced Placement for Undergraduates" in part 3 for an explanation of how to seek credit for external study/experience.

Disabled Student Services

See "Student Advisory Services" in part 2.

Financial Aid Information

Nontraditional/re-entry students who have worked the year before enrolling at UI should visit the Office of Student Financial Aid Services to discuss possible special circumstances concerning their financial aid eligibility. The office is located on the south end of the Student Union Building; phone 208/885-6312. For a complete description of the Office of Student Financial Aid Services, see part 2.

Finding Employment

On-Campus Employment. The Student Employment Office, on the first floor of the Student Union Building, assists students to find on-campus jobs; phone 208/885-4500. Information about on-campus employment is also available at the Human Resource Services Office, 415 West 6th Street, phone 208/885-3595.

Off-Campus Employment. The Idaho Department of Employment Office is located at 221 East 2nd Avenue, phone 208/882-7571.

Health Services

The university offers health care to full- and part-time students, student spouses, and dependents. See "Student Health Service" in part 2. For information about community health services, contact the Latah County Health Department Office, 208/882-7506.

Housing for Nontraditional/Re-entry Students

On-Campus Living. See "University Residences" in part 2 for information on residence halls, graduate student housing, and family housing.

Off-Campus Living. Moscow offers a variety of off-campus housing options. Information sources for off-campus housing include: (1) the Off-Campus Housing List, published weekly by ASUI (UI's student government) and available at the Student Union Building, phone 208/885-6331, and (2) Moscow's daily paper, the *Moscow-Pullman Daily News*, phone 208/882-5561.

Recreational and Social Opportunities

The university offers nontraditional/adult students many opportunities to meet and share interests with other students.

On-Campus Living Groups. Students living in the residence halls or university apartment complexes are invited to participate in social and educational events organized by Residence Life staff members.

Women's Center. The Women's Center provides many programs and services to students (see "Women's Center" in part 2). The Women's Center hosts an orientation reception at the beginning of each semester for nontraditional/re-entry students. In addition, the Women's Center provides a gathering place for nontraditional students to meet each other, study, participate in a weekly noon discussion group, rest, care for infants, or to learn that they are not the only student over 30. The center also co-sponsors projects with other organizations to expand the public's awareness and knowledge of concerns and issues related to gender equity. The Women's Center is located mid-campus, on Line Street, and the phone number is 208/885-6616.

College and Department Organizations. Each of the university's colleges and departments sponsors clubs and honoraries for students in specific majors or interest groups. Contact college or department offices for information.

Student Union Activities. The Student Union organizes many programs and activities for students and their families. See "Recreational, Social, and Extracurricular Activities" in part 2.

Recreational Facilities. Campus recreational facilities include the Kibbie-ASUI Activity Center, indoor and outdoor tennis courts, a climbing wall, golf course, and two swimming pools.

Veterans' Services

See "Student Advisory Services" in part 2.

International Programs

The International Programs Office (IPO) has campus-wide responsibility for international activities, including student and faculty exchanges, intensive English language training, and study abroad, and serves as a liaison with the community regarding international interests. IPO also acts as a clearinghouse for international education activities, training, development programs, and research agreements, and provides support for international activities in the colleges. IPO is located in 223 Morrill Hall, telephone 208/885-8984; fax 208/885-2859.

International Students

International students are an integral part of the ethnic diversity of the University of Idaho. Representing more than 80 countries from around the world, international students contribute significantly to the rich cultural atmosphere of UI.

International student services are provided by international student advisers (ISAs) in IPO. All matters pertaining to students' status with the U.S. Immigration and Naturalization Service (INS in the Department of Justice) are handled by the ISAs, and they also serve as official liaisons between students and their consular offices or sponsoring agencies. ISAs are involved with the progress of international students at every stage of the educational process, and students are encouraged to visit an ISA regularly to discuss concerns or questions related to educational, financial, or cultural adjustments.

Once a student has been admitted, general information is provided about what to bring to the U.S., the U.S. educational system, and housing. A mandatory orientation before classes begin answers initial questions and provides new students with information and skills to succeed in their academic programs and cultural adjustment. Community contacts are arranged through the International Friendship Association. The Students' International Association, a group of U.S. and international students, sponsors additional social, cultural, and educational activities.

International students who hold nonresident alien visas must either purchase health and extended accident insurance for themselves and all accompanying dependents or document coverage by equivalent insurance as part of their obligation to establish proof of financial responsibility for expenses incurred while attending the university. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See the insurance section in this catalog for more information.

American Language and Culture Program

The American Language and Culture Program (ALCP) offers full-time programs in intensive English. Courses are offered throughout the year, with two eight-week sessions during each of the fall and spring semesters and one eight-week session in the summer. The program also offers specialized short-term programs by arrangement.

Students wishing to improve their English or achieve the required level of proficiency on the Test of English as a Foreign Language (TOEFL) for admittance to UI (or other educational institutions) can work toward that goal while living on the UI campus (if desired) and attending the American Language and Culture Program. The curriculum teaches reading, writing, speaking, and listening skills at various levels from beginning to advanced. Students take part in special cultural activities and learn about the "Culture of the USA and the U.S. University."

For more information and/or applications, contact the ALCP coordinator through the International Programs Office.

Study Abroad

With access to 185 universities in 50 countries, the University of Idaho has the largest study abroad program in the state of Idaho and one of the most extensive programs in the Pacific Northwest. Each year more and more students are taking advantage of UI's quality study abroad programs in order to gain a competitive edge in the global marketplace. The university's commitment to international education was highlighted when it was recognized as one of the leading exchange partners at the 15th anniversary conference of the International Student Exchange Program held in Washington, D.C., in 1994.

With so many study sites throughout the world, students in virtually any field can enhance their UI education as well as chances for future employment. For example, students can study developmental issues in Fiji, engineering in Sweden, ecology in Costa Rica, or business in Italy. A number of these programs are taught in English so that students without foreign language skills are still able to study abroad. However, those students who are interested in learning a foreign language will find that there are excellent opportunities for study overseas through one of the university's programs.

Some exchange programs such as Ecole Superiéure de Commerce de Chambéry, and Fachhochschule für Technik und Wirtschaft - Berlin offer the possibility for students to participate in an internship with a company or agency following their studies overseas. Other programs such as the University Studies Abroad Consortium, and the Cooperative Center for Study Abroad enrich classroom teaching with regularly scheduled field trips to local sites or points of interest.

While program costs vary, in many cases a study abroad experience will cost about the same amount of money as studying on campus. Students receiving federal or state financial aid may be able to apply their entire award to UI study abroad programs.

Students may receive credit for study abroad or other experience overseas in the following ways:

1. Resident credit—with the exception of the ISEP program, students receive resident credit for all official UI study abroad programs. Students register under the 206, 406, or 506 study abroad course number within each department.
2. Transfer credit—students who participate in the ISEP program receive transfer credit. In some instances, it may be possible to receive transfer credit for study at accredited foreign institutions that do not presently hold agreements with the University of Idaho, or through study abroad programs administered by other U.S. universities. IPO has a variety of reference materials available for students to look through.
3. Directed study—students may plan their own educational experiences abroad, and arrange *in advance* for credit from any appropriate department. This is for education comparable to that gained in the other courses of the department, but it may be as general and inclusive as the department will allow.
4. Course challenge—certain courses may be challenged on the basis of knowledge gained abroad. See regulation D-4.
5. External study/experience—credit may be awarded to students for knowledge and/or competence gained in foreign travel. See regulation I-5. In view of the documentation required, the procedure noted in 3 above is much more effective than this "after-the-fact" procedure.

UI participates in the following study abroad programs:

Study Abroad Programs	Placement Sites	Duration	Credit	Grades	GPA	Program Eligibility					Other Reqs
						Fr.	So.	Ju.	Sr.	Grad.	
International Student Exchange Program (ISEP)	111 institutions 39 countries	semester, year	Transfer	P/F	2.75		x	x	x	x	foreign language 14 cr.*
University Studies Abroad Consortium (USAC)	Costa Rica, Italy, Spain, Chile, France, Germany, Thailand, Australia, England, New Zealand	semester, year, summer	Resident	A/F	2.50-3.00	x	x	x	x	x	
Council of International Educational Exchange (CIEE)	33 institutions 24 countries	semester, year	Resident	A/F	2.50-3.00			x	x	x	foreign language 8-14 cr.*
Cooperative Center for Study Abroad (CCSA)	England, Scotland, Ireland, Australia	fall semester summer, winter break	Resident	A/F	2.00	x	x	x	x	x	

Study Abroad Programs	Placement Sites	Duration	Credit	Grades	GPA	Program Eligibility					Other Reqs
						Fr.	So.	Ju.	Sr.	Grad.	
Pontificia Universidad Católica del Ecuador (PUCE)	Ecuador	year	Resident	P/F	2.50			x	x		Spanish 14 cr.
Southern Denmark Business School (SDBS)	Denmark	semester, year	Resident	P/F	2.50			x	x	x	Some business/ economics
Fachhochschule für Technik und Wirtschaft Berlin (FHTW)	Germany	year	Resident	P/F	2.50			x	x		German 14 cr. Some business/ economics
Ecole Superiéure de Commerce de Chambéry	France	spring semester, year, summer	Resident	P/F	2.50			x	x		French 14 cr. Some business/ economics
Växjö University	Sweden	semester, year	Resident	P/F	2.00		x	x	x		
Brighton University	England	fall semester	Resident	A/F	2.80			x	x		Physical education, dance, sport science & recreation majors
Napier University	Scotland	spring semester, year	Resident	P/F	2.50			x	x	x	Communication majors
Universidad de Zaragoza	Spain	year	Resident	P/F	2.50			x	x		Spanish 14 cr.
Instituto Technológico y de Estudios Superiores de Monterrey (ITESM)	Mexico	semester, year, summer	Resident	P/F	2.50		x	x	x		
Haagse Hogeschool	Netherlands	semester, year	Resident	P/F	2.50		x	x	x		Some business/ economics
KCP International Language Institute	Japan	semester, year, summer	Resident	P/F	2.00	x	x	x	x	x	

*Not all sites require knowledge of foreign languages.

All students who participate in USAC, CIEE, CCSB, PUCE, Chambéry, Växjö, Napier, FHTW, Brighton, Newcastle, and Southern Denmark Business School exchange programs do not pay their normal UI registration fees. Instead, they pay a $75 registration fee (in addition to the program cost) for each semester they are abroad.

All students participating in study abroad programs are required to be registered as full-time students unless special arrangements have been made.

For more information on study or work abroad or volunteering overseas, call or visit the study abroad coordinator in 216 Morrill Hall (telephone 208/885-8984). Information about the following programs can also be obtained from exchange program coordinators in the departments listed below:

PUCE: Foreign Languages and Literatures, Administration 324 (208/885-8965)

Chambéry: Foreign Languages and Literatures, Administration 312 (208/885-8926)

Zaragoza: Economics, Administration 339 (208/885-7147); and Foreign Languages and Literatures, Administration 304A (208/885-8985)

FHTW: Economics, Administration 339 (208/885-7147), and Foreign Languages and Literatures, Administration 304A (208/885-8985)

SDBS: Economics, Administration 339 (208/885-7147)

ITESM: Economics, Administration 339 (208/885-7147)

Haagse Hogeschool: Economics, Administration 339 (208/885-7147)

Brighton: HPERD, Physical Education Building 108 (208/885-2189)

General Requirements and Academic Procedures

These regulations were in effect as of Fall Semester 1996. See the Time Schedule for any substantive changes that may have been approved after this catalog went to press.

The following procedures and regulations have been adopted to help students, faculty members, and administrators carry out UI's overall academic program successfully. Students have the ultimate responsibility for meeting university, college, and departmental graduation requirements and academic procedures. Students, with the help of faculty advisers, should check their records each time they prepare to register to ensure that they are correctly and systematically fulfilling their degree requirements. It is the responsibility of advisers, major professors, and deans to assist students in understanding and complying with these requirements and procedures. The registrar assists by checking students' records for compliance with the regulations in this section of the catalog. Requests to waive curricular requirements, academic provisions, or academic standards should be presented to the appropriate department and/or college.

Students may petition the appropriate committee for exceptions to the administrative and academic regulations of UI. Petitions are submitted to one of the following committees depending on the nature of the petition.

Academic Petitions Committee. Student petitions for exceptions to the requirements and procedures in this catalog section (part 3) should be presented to the Academic Petitions Committee on forms available in college offices.

Academic Hearing Board. This committee hears student appeals from decisions made by college authorities concerning, but not limited to, such matters as (1) eligibility for advanced placement or credit by examination, (2) objectivity or fairness in making, administering, and evaluating class assignments, (3) maintenance of standards for conscientious performance of teaching duties, and (4) scheduling of classes, field trips, and examinations. The board does not hear appeals concerning requirements or regulations of the College of Graduate Studies or the College of Law.

Administrative Hearing Board. Students submit appeals to the Administrative Hearing Board on administrative decisions in such matters as residence status for tuition purposes, granting of student financial aid, and assessment of fees or charges (except in connection with parking regulations), and disputes involving interpretation and application of policies concerning such matters as student records, smoking, and treatment of disabled persons.

Appeals from decisions of the Academic Petitions Committee and the Academic Hearing Board are submitted to the provost. If the provost concurs with the body whose decisions was appealed, the appellant then may appeal to the president and regents if the president and regents consent to hear the appeal.

Decisions of the Administrative Hearing Board may be appealed to the president and regents when they consent to hear such appeals.

Rights Reserved to the University

Catalogs, bulletins, and course or fee schedules shall not be considered as binding contracts between UI and students. UI reserves the right at any time, without advance notice, to: **(1)** withdraw or cancel classes, courses, and programs; **(2)** change fee schedules; **(3)** change the academic calendar; **(4)** change admission and registration requirements; **(5)** change the regulations and requirements governing instruction in and graduation from UI and its various divisions; and **(6)** change any other regulations affecting students. Changes go into effect whenever the proper authorities so determine and apply not only to prospective students but also to those who are matriculated in UI. When economic and other conditions permit, UI tries to provide advance notice of such changes. In particular, when an instructional program is to be withdrawn, UI will make every reasonable effort to ensure that students who are within two years of completing graduation requirements, and who are making normal progress toward completion of those requirements, will have the opportunity to complete the program that is to be withdrawn.

UI also reserves the right, when a student has failed to discharge any obligation to UI, to deny that student the privilege of reregistering or to withhold the student's records or information based on the records. Students may verify the status of their accounts and be informed of any financial obligation to UI by inquiring at the cashier's window of the Business and Accounting Services Office in the Administration Office Building.

A—Matriculation

Applicants for enrollment in any course offered by UI for college credit, except correspondence study, submit personal data and credentials covering all previous academic work. (See "Admission to the University" in part 2.) After UI has received these credentials and approved the application, registration forms are prepared and the applicant's first registration at UI concludes the matriculation process.

B—Registration

B-1. Preparation of Registration Materials. Official registration forms are prepared for new students as described above. They are also prepared for students enrolled in a given semester or summer session for the succeeding semester. Former students who have not been enrolled in UI for a semester or longer should notify the registrar of their intention to reregister at least one month before the opening of the term. Such students will be required to submit transcripts from any institutions attended since their last registration at UI, and they may also be required to complete a residence questionnaire. Failure to meet the deadline may cause a delay in registration.

B-2. Admission to Classes.

B-2-a. Instructors do not admit anyone to class whose name does not appear on the class roster or for whom they have not signed an "add" card. UI professors are given the authority to grant or deny access to classes by visiting scholars.

B-2-b. At the beginning of each academic session, students with their advisers' aid complete a trial study list. The information is then transcribed to the official registration form, which is signed by the adviser and is checked by such intracollege procedures as the student's college may require. After obtaining necessary approvals and receiving departmental validation for each course, the student files the completed registration form with the registrar. On payment of fees, admission to classes is authorized.

B-3. Auditing Classes. Auditing a course consists of attendance without participation or credit. Only lecture classes may be audited. Audited courses are not recorded on a student's permanent record, except as provided in the chart with regulation C-1.

B-4. Registration for Zero Credit. Any course offered for credit may be taken for zero credit. The implications of zero credit are:

B-4-a. Registrants are expected to do the assigned work and attend class sessions. Grades are received on the same basis as if the course were taken for credit and are entered on permanent records.

B-4-b. Students enrolled in a course for zero credit may take it P/F. This is separate from the "pass-fail option" outlined in B-11.

B-4-c. Courses taken for zero credit do not fulfill requirements.

B-4-d. Zero-credit grades have no effect on a student's grade-point average. Neither do they affect academic eligibility, disqualification, or reinstatement.

B-4-e. Students enrolled for zero credit count as regular registrants for statistical purposes, such as listing course enrollments, computing instructors' loads, and determining departmental services.

B-5. Correspondence-Study Courses. A student enrolled in the regular program is permitted to carry correspondence-study courses for college credit only with the prior written approval of his or her academic dean. Credit for correspondence-study courses will not be accepted without such approval.

B-6. Registration for Courses Without Completion of Prerequisites. Students who have not completed the prerequisites to a course for which they are otherwise eligible may register for the course with the instructor's approval.

B-7. Registration of Lower-Division Students in Upper-Division Courses. All academic programs give priority in the first two years to meeting the general requirements for the appropriate degree and acquiring the foundation for advanced study; therefore, lower-division students may not take upper-division courses. Exceptions may be made for students who have fulfilled the prerequisites and who are well prepared in their field of study. In such cases, the instructor may, with the concurrence of the student's adviser and academic dean, authorize the exception.

B-8. Registration of Undergraduate and Nondegree Students in Graduate Courses. Undergraduate and nondegree students may register in graduate courses under the conditions outlined in the *Graduate Catalog* with the prior written approval of the instructor of the course, the student's adviser, and the dean of the College of Graduate Studies.

B-9. Registration of Students with Baccalaureate Degrees as Undergraduates. To register as undergraduates, students with baccalaureate degrees must secure the permission of the dean of the undergraduate college and file a statement with the registrar indicating that they understand that the work will not be classified as graduate work and cannot be used toward a graduate degree at a later date. (See J-7-b and c.)

B-10. Registration for Accelerated and Other Short Courses. Students may register for accelerated and other short courses at any time up to and including the starting date of the course without petition.

B-11. Pass-Fail Option.

B-11-a. Undergraduate Students.

(1) After consultation with their advisers, undergraduates who have a cumulative grade-point average of 2.00 or higher are permitted to enroll in one course a semester under this P/F option. (The grade-point requirement is not applicable to students who are taking university-level courses for the first time.) This procedure is separate from taking courses that are regularly graded P/F. Within the limitations specified above, an undergraduate may enroll under the pass-fail option in any course EXCEPT: **(a)** courses listed by number and title in the student's major curriculum as printed in part 5; **(b)** courses taken to meet the distributional requirements of the college or curriculum, unless allowed for P/F enrollment by the department in which the student is majoring; **(c)** courses in the major subject field; and **(d)** courses in closely related fields that are excluded from this option by the student's department. (See B-11-d for "Reporting of Grades.")

(2) Students in officer education programs (OEP) may enroll under this regulation in courses required because of their affiliation with the OEP ONLY with the permission of the administrator of the OEP department concerned.

(3) A maximum of 12 credits earned in courses under this regulation may be counted toward a baccalaureate degree.

B-11-b. Graduate Students.

(1) With the approval of the major professor concerned (or adviser in the case of an unclassified student) and the vice provost for research and graduate studies, graduate students may enroll in a limited number of courses under this P/F option. This procedure is separate from taking courses that are regularly graded P/F.

(2) Courses that may be taken by graduates under this regulation are: **(a)** any course that the student's graduate committee deems not essential to the major field and **(b)** any course required to remove a deficiency or to provide background for the student's program, unless the major department stipulates that such deficiency courses must be taken on a regular-grade basis and completed with an A or B.

(3) Of the minimum number of credits required for a degree, no more than three credits in a master's or specialist program or nine in a doctoral program may be taken under this P/F option.

(4) To have P recorded for courses taken under this regulation, a graduate student must earn a C or above. A grade of D will be converted to an F on the student's records.

(5) An unclassified student may enroll for courses under this option with the approval of his or her adviser (if assigned) and the vice provost for research and graduate studies. If, however, at a later date an unclassified student is admitted to a degree program, the above regulations apply and no changes to regular letter grades will be permitted.

B-11-c. Adds, Drops, and Changes. Students may add or drop a P/F option course in the same manner as a regular course, and they may change from P/F to regular-grade classification, or vice versa, if they do so no later than the deadlines stated in regulation C and the academic calendar. Students may make these changes by securing the signatures of the adviser or major professor and dean concerned.

B-11-d. Reporting of Grades. Instructors are not notified as to which students are enrolled in courses under this P/F option. Grades are reported in the same manner as grades in courses taken on a regular-grade basis. The registrar is responsible for converting Cs or above to Ps on students' records and, for graduates, Ds to Fs. Grades of D reported for undergraduates are recorded on students' records and are not converted.

B-12. Registration for Fewer Credits than Authorized. Students may register for a particular course for fewer credits than indicated in the Time Schedule (they may also register for zero credit under the conditions outlined in B-4); likewise, departments may list courses in the Time Schedule for fewer credits than the number authorized by this catalog.

C—Changes in Registration

C-1. Students may change their registration as provided in the "Semester Schedule for Changes in Registration" accompanying this regulation. All registration changes are effective on the date they are filed with the registrar, except in the case of withdrawal from the university before the end of the second week following midterms, which is effective on the date the indefinite-leave-of-absence card is filed in the office of the student's academic dean (see G). Students may not drop a course by simply staying out of class. Students are expected to obtain the signature of the adviser on the drop card.

Semester Schedule for Changes in Registration

See calendar in the front of the catalog for dates. The schedule for changes in enrollment in accelerated or short courses or during summer session is prorated, based on the number of class meeting hours (see notes below). The calendar in the front of the summer bulletin lists the dates for summer session.

DESIRED CHANGE	First six days of classes*	Seventh day of classes through fourth week*	Fifth week to end of second week following midterms**	After end of second week following midterms***
Drop course	Drop course on line or by telephone, if withdrawal is permitted (see regulations C-1 and C-2). No grade recorded.****		Permission of adviser required. File form with registrar. Grade recorded as withdrawal (W).****	For compelling reasons only, upon successful petition to Academic Petitions Committee (file petition through dean's office). Grade recorded as withdrawal (W).****
Add course (regular credit or audit).	Add course on line or by telephone.	Permission of instructor and adviser required. File form with registrar.		
Change course section.	Change section on line or by telephone.	Permission of instructor of new section required. File form with registrar.		

DESIRED CHANGE	First two weeks of classes*	Third and fourth weeks*	Fifth week to end of second week following midterms**	After end of second week following midterms***
Change from regular credit to audit.	File form with registrar. No grade recorded.		File form with registrar. Grade of W recorded and counted in 20-credit limit for withdrawal.	Not permitted.
Change from audit to regular credit.	File form with registrar.	Permission of instructor, adviser, and dean required. File form with registrar.		
Change from regular basis to pass-fail or reduce number of credits in course.	File form with registrar.		Not permitted.	
Change from pass-fail to regular basis.	File form with registrar.	Not permitted.		
Register late.	File form with registrar.	File form with registrar. Pay late-registration fee.	For compelling reasons only, upon successful petition to Academic Petitions Committee (file petition through dean's office). Pay late-registration fee.	
Withdraw from university. (See regulation G.)	Obtain form from Student Advisory Serv., then file it in academic dean's office. No grade recorded.		Obtain form from Student Advisory Serv., then file it in academic dean's office. Grade recorded as withdrawal (WU).****	For compelling reasons only; complete medical withdrawal or petition Academic Petitions Committee (file petition through dean's office). Grade recorded as withdrawal (WU).****
Change in undergraduate curriculum or major. (Consult the *Graduate Catalog* for procedures applicable to graduate students.)	Anytime. File form with registrar. The request to change must be approved by the dean of the college in which the new curriculum is offered. If the new curriculum is in a different college, students must meet the admission requirements of that college. Students must also see the dean of the college they are transferring out of for counseling and information purposes (not for permission to transfer). A cumulative grade-point average of 2.00 or better is normally required to transfer from one UI college or another; however, any student may transfer to the General Studies Program by consulting the director of the program (the signatures in this case are only to certify that the student's academic records have been forwarded). The change of curriculum is official when the student files the completed form with the registrar.			

* In the case of accelerated or short courses, when no more than 12.5 percent of the class-meeting hours have been completed.

** In the case of accelerated or short courses, after 12.5 percent but less than 60 percent of the class-meeting hours have been completed.

*** In the case of accelerated or short courses, after 60 percent of the class-meeting hours have been completed.

**** In the College of Law, consult the dean's office for information concerning grades assigned when students withdraw from law courses after the second week of classes.

C-2. Credit Withdrawal Limitation.

C-2-a. The number of credits that may be dropped and recorded on the student's permanent record is limited to 20 credits during a student's undergraduate career at UI. Petitions must be submitted to the Academic Petitions Committee to drop more than 20 credits during a student's undergraduate career at UI.

C-2-b. If a student attempts to drop a course that would bring the total credits he or she has dropped above 20, the student will not be allowed to do so. If a student attempts to drop two or more courses simultaneously and together they would bring his or her total credits dropped above 20, the student will be asked, through the dean's office, to submit a revised request to drop only one course or a combination of courses that would not cause the limitation to be exceeded. If the student cannot be reached or fails to submit a revised request, the registrar will record dropping the course or combination of courses that bear the highest course numbers and not cause the limitation to be exceeded; the dropping of the remainder will not be allowed.

D—Credit and Continuing Education Unit

D-1. Unit of Credit Defined. One unit of credit represents what a typical student might be expected to learn in one week of full-time study (40-45 hours including class time and preparation). Each course is evaluated by a system of credits related to time spent in class, lab, study-preparation, or field investigation. A semester credit is expected to require a total of three hours of scholarly activity each week. Ordinarily one 50-minute hour of class attendance is scheduled for each credit, but any combination of class attendance, lab, study-preparation, or field investigation may be arranged. When students are permitted to register for credit in workshops and similar short courses, credit is granted on the basis of one semester credit for each week of full-time scholarly activity required. Exceptions to this policy for undergraduate courses must be approved by the University Curriculum Committee. Exceptions for graduate courses must be approved by the Graduate Council and the University Curriculum Committee.

D-2. Credit-Load Limitations. (Also see J-5.) The maximum loads specified below include credits for which the student is concurrently registered at other institutions (e.g., Washington State University and Lewis-Clark State College).

D-2-a. Regular Semester. An undergraduate student may register for no more than 20 credits in a semester. This number may be increased to 22 with specific written approval by his or her academic dean. Registration for more than 22 credits (except for students enrolled in the WAMI Medical Education Program) is permitted only on approval of a petition to the Academic Petitions Committee (petition forms are available in deans' offices). See *Graduate Catalog* for the credit limitation for a graduate student who is not a graduate assistant.

D-2-b. Summer and Other Sessions. Credit limitations for summer and other sessions are as follows:

Weeks	Credit Limitations
12	15
11	15
10	15
9	13
8	12
7	10
6	9
5	7
4	6
3	4
2	3
1	1

Registration for courses with conflicting or overlapping meeting times is prohibited. **This regulation prohibits students from registering for two 1-credit workshops in the same week.** Registration for more than the above stated limits is permitted only on approval of a petition to the Academic Petitions Committee (petitions are available in the deans' offices) or by prior approval of the University Curriculum Committee.

D-2-c. Graduate-Student Appointees. A graduate assistant may register for no more than 12 credits in a semester or 6 credits in an eight-week period. On the written recommendation of the employing dean and approval by the vice provost for research and graduate studies, an appointee is permitted to register for more than 12 credits in one semester but not more than an aggregate of 24 credits during two successive academic-year semesters.

D-2-d. Full-Time Employees. A full-time UI employee may register for no more than six credits in a semester or three credits in an eight-week period. Written approval by the employee's departmental administrator and dean or director must accompany the registration form.

D-2-e. Nonmatriculated Students. Nonmatriculated students are subject to the limitations stated in D-2-a and D-2-b. In addition, a nonmatriculated student who has been registered for 12 or more credits in each of two semesters must petition the Admissions Committee for permission to register for 12 or more credits while continuing as a nonmatriculated student.

D-3. Transfer Credit. Credit is accepted for work completed in accredited institutions of higher education as provided in the regulations covering the admission of transfer students. (See "Transfer Admission Requirements" in part 2; also see E-4 and J-5.)

D-4. Challenged Courses (Credit by Examination). Degree-seeking students may challenge UI lecture and associated laboratory courses—earn credit by examination—as follows:

D-4-a. No examinations under this regulation may be conducted during the last two weeks of any academic session.

D-4-b. Students are not permitted to challenge a prerequisite course after having completed the advanced course or to challenge a course after already having received a grade in it. (See I.)

D-4-c. Credit in courses offered by the College of Law may not be obtained by this procedure.

D-4-d. Students must submit evidence to the instructor that they have sufficient knowledge to challenge a course. After a student has been granted permission to challenge a course by the instructor, by the administrator of the department in which the course is offered, and by his or her academic dean, the advanced standing exam fee is paid and the complete petition is filed with the registrar. The registrar checks the student's record and, if the student is eligible to take the advanced-credit examination, notifies the instructor to proceed with the examination.

D-4-e. Undergraduates must score C or higher to pass and obtain credit. Graduates must score B or A to pass and obtain credit. A passing grade is entered as P and is not included in grade-point computations. If students do not meet these standards, no entry is made on their records.

D-4-f. Results of the challenged courses must be forwarded to the registrar no later than the beginning of the last week of the semester. In the case of graduate students, the results are sent to the registrar via the chair of the student's major department and the vice provost for research and graduate studies.

D-5. Review and Prerequisite Courses. Students will not receive credit for courses taken in review or for courses that are prerequisites of courses they have already completed in the same subject area, except as stated in I-1.

D-6. Continuing Education Unit. Learning activities for which regular university-level credits are not awarded may be evaluated by a system of uniform continuing education units. Such units are granted in accordance with the following guidelines, which are set forth by the (national) Task Force on the Continuing Unit: A continuing education unit is expected to require 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instructors. Continuing education, as used in this definition, includes all instructional and organizational learning experiences in organized formats that impart noncredit education to post-secondary-level learners. These properties of continuing education may be applied equally under the system regardless of the teaching-learning format, program duration, source of sponsorship, subject matter, level, audience, or purpose. The number of units to be awarded is determined by considering the number of contact hours of instruction, or the equivalent, included in the educational activity. Reasonable allowance may be made for activities such as required reports, lab assignments, field trips, and supervised study.

E—Grades

E-1. Grading System.

E-1-a. For purposes of reporting and record, academic work is graded as follows: **A**-superior; **B**-above average; **C**-average; **D**-below average; **F**-failure; **I**-incomplete work of passing quality (see regulation F); **W**-withdrawal; **WU**-withdrawal from the university; **P**-pass (see below); **IP**-in progress (see E-2); **N**-unsatisfactory and must be repeated (used only in Engl 101 and 102 and Chem 050).

E-1-b. Grades of P may be reported at the option of the department on a course-by-course basis in noncompetitive courses such as practicum, internship, seminar, and directed study. Grades of P are also reported in courses carrying the statement, "Graded P/F," in the course description. In courses in which Ps are to be used, the method of grading will be made known to the students at the beginning of the semester, and the grading system will be uniform for all students in the courses, except as provided in B-4-b. Grades under the pass-fail option are not affected by this regulation because the conversion of the regular letter grade is made by the registrar after instructors turn in the class rosters.

E-1-c. Midsemester grades in undergraduate courses must also conform to the above regulations. It is permissible to report Ps at midsemester ONLY in courses that have been approved for grading on this basis.

E-2. IP Grades.

E-2-a. Grades in Undergraduate Senior Thesis or Senior Project. The grade of IP (in progress) may be used to indicate at least minimally satisfactory progress in undergraduate courses such as senior thesis or senior project that have the statement "May be graded IP" in the course description. When the thesis or project is accepted, the IP grades are to be removed (see E-2-c). Grades of IP in undergraduate courses are considered to represent grades of at least C or P. If, in any given semester, the instructor considers the student's progress unsatisfactory, an appropriate letter grade (D or F) should be assigned for that semester.

E-2-b. Grades in Graduate Research Courses. The grade of IP (in progress) may be used in courses 500 (Master's Research and Thesis), 599 (Research), and 600 (Doctoral Research and Dissertation). When the thesis, dissertation, or other research document is accepted, or when a student ceases to work under the faculty member who is supervising his or her research, the IP grades are to be removed (see below). Grades of IP in graduate courses are considered to represent at least grades of B or P. If, in any given semester, the faculty member supervising the student's research considers the student's progress unsatisfactory, a regular letter grade (C, D, or F) should be assigned.

E-2-c. Removal of IP Grades. Departments may use on a department-wide basis either the P/F grading system, or regular letter grades, as well as P, when removing the previously assigned IP grades (e.g., a student who enrolled for six credits in course 500 one semester, four credits another semester, and five credits an additional semester could have 15 credits of IP grades removed with different grades for each of the blocks of credit registered for each semester, such as six credits of A, four credits of B, and five credits of P).

E-3. Grades in Law Courses. For additional provisions applicable to grades in law courses, see the College of Law section in part 4.

E-4. Computing Grade-Point Averages. Grades are converted by assigning the following number of points per credit for each grade: A-4, B-3, C-2, D-1, F-0. In computing the grade-point average, neither credits attempted nor grade points earned are considered for the following: courses graded I, IP, P, W, WU, or N, correspondence courses, advanced placement credit, credit by examination, or courses taken at another institution. Credit earned at non-U.S. institutions is recorded as pass (P) or fail (F).

E-5. Replacing a Grade by Repeating a Course. A student who has received a D or F in a course at UI or elsewhere may repeat the course at UI in an effort to replace the grade, provided a more advanced course in the same subject field for which the first course is a prerequisite has not been completed in the meantime. To replace a grade of D or F, the course must be repeated in residence, not through correspondence study or at another institution. Although all grades remain on the record, only the most recent grade is counted for grade-point purposes. (See the College of Law section in part 4 for the exception to this regulation applicable to students in that college.)

E-6. Reports of Grades and Grade Changes. Grades are reported to the registrar for all courses at the end of each academic session and at midsemester for undergraduate courses (see deadlines in the academic calendar). Students are furnished copies of grade reports. The assignment of grades and changes in grades are the sole prerogative of the instructor and are reported by the instructor directly to the Registrar's Office on forms provided by that office. With respect to grade changes, an instructor may only change a grade to a new grade that he or she could have assigned initially. After a grade has been reported to the registrar, it may not be altered except by a written request stating the reasons for the alteration, signed by the instructor who submitted the original grade. If it is determined that a grade change is warranted and the instructor cannot be reached, the departmental administrator may assume the prerogatives of the instructor in connection with the grade change.

F—Grades of "Incomplete"

F-1. A grade of "Incomplete" is assigned only when the student has been in attendance and has done satisfactory work up to a time within three weeks of the close of the semester, or within one week of the close of the summer session. It may be assigned in the case of withdrawal from UI only if the withdrawal occurs within the last three weeks of the semester. If a final grade of "Incomplete" is recorded, the instructor specifies in writing on the class roster what the student must do to make up the deficiency. The instructor also specifies the grade that is to be entered on the student's record in the event that the incomplete work is not made up by the deadline.

F-2. Removal of "Incomplete" Grades. Incomplete work should be made up within six weeks after the first day of classes of the following academic semester (not including summer session). A grade of "Incomplete" that is not removed before that date automatically converts to the grade specified by the instructor on the class roster (see F-1) unless the student previously has filed with the registrar a "Permit for Extension of Time" card, signed by his or her academic dean and the instructor concerned. If the "Incomplete" grade is not removed within the six-week period, the period may be extended once for not more than one calendar year from the date such extension is approved. If an extension is granted and the work is not made up before the expiration date, the grade automatically reverts to the grade specified by the instructor on the class roster. It is the student's responsibility to see that the incomplete work is made up before the expiration date. The instructor must submit a "Removal of Incomplete" card to the registrar within 72 hours following the expiration date. In some cases, a student's eligibility to reregister is contingent on removal of "Incomplete" grades. In such cases, an extension of time for removal of the grades may not be granted. Moreover, if a student becomes academically disqualified (see L) when an "Incomplete" grade is removed, his or her registration may be cancelled. [See E-6 for further discussion on conditions for grade changes.]

F-3. "Incomplete" Grades on Record at End of Final Term. A student cannot graduate with a grade of "Incomplete" on his or her record. At the end of the term in which the student applies for a degree, a grade of "Incomplete" in any UI course reverts to the grade that the instructor had specified on the class roster (see F-1). Reverted grades that replace grades of "Incomplete" at the end of the final term are included in the computation of the student's cumulative grade-point average at graduation. Nonetheless, a student who has graduated may make up the incomplete work within the usual time limit in an effort to raise the grade on the permanent record.

G—Withdrawal Procedures.

G-1. Standard Withdrawal Procedures.

G-1-a. A student who wishes to withdraw from UI before the end of the second week following midterms must go to Student Advisory Services (241 UCC) where the process of withdrawal is started and further instructions will be furnished for completing the indefinite-leave-of-absence card. The date on which the card is filed in the office of the student's academic dean is the official date of withdrawal. Deans will not accept indefinite-leave-of-absence cards after the end of the second week following midterms.

G-1-b. A student is permitted to withdraw from UI after the end of the second week following midterms for compelling reasons only and after approval by the Academic Petitions Committee *or* after completing a medical withdrawal as explained in G-2. Examples of compelling reasons are: serious illness or injury of the student or death or serious illness or injury in the student's immediate family. Petitions for permission to withdraw after the end of the second week following midterms are forwarded *via the student's academic dean* to the Academic Petitions Committee on forms available in department and college offices. If the student's petition is approved, the Academic Petitions Committee will determine the effective date of the withdrawal. (See "Refund of Fees" in part 2.)

G-2. Medical Withdrawal Procedures.

G-2-a. The director of the Student Health Service is authorized to grant or require a student's withdrawal from UI for medical reasons.

G-2-b. Voluntary Medical Withdrawal. Students desiring to withdraw from UI for medical reasons will consult the director of the Student Health Service who will evaluate the request. If granted, the dean for student advisory services will be notified in writing to process the medical withdrawal.

G-2-c. Emergency Transfer to Institutional Care. The director of the Student Health Service is authorized to act as the representative of the president in emergencies that, under Idaho laws, require the transfer of a student to a community or state health facility. The student may be granted a medical withdrawal from UI at the discretion of the director.

G-2-d. Mandatory Medical Withdrawal. It is the responsibility of the dean for student advisory services to order a medical examination of a student if the dean has reason to believe that the student has a serious medical or psychiatric disability that substantially threatens or interferes with the welfare of the student, other members of the university community, or the educational processes of the university. The dean notifies the student and the director of the Student Health Service that such an evaluation is to be conducted. This process may be started by the director of the Student Health Service for patients under care or counseling by notifying the student and the dean for student advisory services in writing.

(1) **Request for Evaluation.** On notification from the dean for student advisory services, the director of the Student Health Service requests the student to undergo immediate professional evaluation by the director or the director's designee, or, at the student's request and expense, by a private physician or psychiatrist deemed appropriate by the director. A report of this evaluation is presented to the director with a specific recommendation as to whether a medical withdrawal is warranted.

(2) **Evaluation Conference.** The director of the Student Health Service provides the student written notice of a time and place at which the director and student will confer on the final determination as to mandatory withdrawal. The student may have the assistance of a representative at this conference. The director refers to reports, recommendations, and evaluations pertinent to the case and is empowered to request additional relevant medical or psychiatric examinations of the student.

(3) **Determination of Director.** Based on the evaluation and the conference, the director of the Student Health Service may determine: **(a)** that mandatory withdrawal **is** warranted by the student's medical or psychiatric condition; **(b)** that mandatory withdrawal **is not** warranted by the student's medical or psychiatric condition; or **(c)** that the student may remain enrolled subject to conditions specified by the director. The director transmits this decision in writing to the student and the dean for student advisory services. If withdrawal is ordered, the dean will process it.

(4) **Finality of Determination.** Decisions made by the director of the Student Health Service pursuant to these procedures are final.

(5) **Refusal of Evaluation.** If, after a request by the director of the Student Health Service, the student refuses to consult with a physician or psychiatrist, the director will, if practicable, seek the help of the student's family in persuading the student to seek appropriate professional assistance. Should these efforts not result in the student taking the desired action, the director summarizes the steps taken to secure needed information and the reasons for the withdrawal and instruct the dean for student advisory services to process the withdrawal. A copy of this order for withdrawal is sent to the student. The dean will process the withdrawal as mandatory, but involuntary.

(6) **Appeal.** A student may appeal to the coordinator of student services either **(a)** to revoke the order of the dean for student advisory services for a medical examination or **(b)** in case a procedural error is alleged, to order the determination of the director of the Student Health Service reopened.

G-2-e. Any student placed on medical withdrawal may, if appropriate, be informed, in writing, by the director of the Student Health Service, that he or she is eligible to return to UI at a later date on the favorable recommendation of the director. When applying for readmission, the student is responsible for providing the director with evidence of satisfactory treatment of the condition that necessitated medical withdrawal. Medical withdrawals are subject to the same refund rules and procedures as other withdrawals (see "Refund of Fees" in part 2).

G-3. Grades for Students Who Withdraw. Grades for a student who withdraws are recorded as provided in C and F-1. A student who withdraws from, or leaves, UI without official approval will receive Fs in all courses in which he or she is registered and for which the grade has not already been assigned.

H—Final Examinations

H-1. The last five days of each semester are scheduled as a final exam week (two-hour exams) in all divisions except the College of Law. The following provisions apply:

H-1-a. No quizzes or exams may be given in lecture-recitation periods during the week before finals week. Exams in lab periods and in physical education activity classes, final in-class essays in English composition classes, and final oral presentations in speech classes are permitted.

H-1-b. Instructors must meet their classes during the exam period for which they are scheduled in the finals week, either for an exam or for a final class session.

H-1-c. Final exams or final class sessions are to be held in accordance with the schedule approved by the Faculty Council and published in the Time Schedule. Instructors may deviate from the schedule only on the recommendation of the college dean and prior approval by the provost.

H-1-d. Where exams common to more than one course or section are required, they must be scheduled through the Registrar's Office and are regularly held in the evening.

H-1-e. Students with more than two finals in one day are permitted, at their option, to have the excess final(s) rescheduled to the conflict period or at a time arranged with the instructor of the course.

H-1-f. Final grades for each course must be filed with the registrar within 72 hours after its scheduled exam period.

H-1-g. Athletic contests are not to be scheduled during finals week; further, if a change in the calendar causes a scheduled athletic contest to fall within finals week, every reasonable effort must be made to reschedule the athletic contest.

H-2. Students who miss final exams without valid reason receive Fs in the exams. Students who are unavoidably absent from final exams are required to present evidence in writing to the instructor to prove that the absence was unavoidable.

H-3. Instructors, with the concurrence of their departments, may excuse individual students from final exams when such students have a grade average in the course that will not be affected by the outcome of the final exam. In such instances, the grade earned before the final exam is to be assigned as the final grade.

H-4. Early final exams are permitted for students, on an individual basis, who clearly demonstrate in writing that the reasons for early final exams are compelling (such requests require approval by the instructor and by the administrator of the department and the dean of the college in which the course is offered).

I—Advanced Placement for Undergraduates

(NOTE: See part 2 for special fee for extramural credits.)

I-1. With prior approval by the administrator of the department concerned, undergraduate degree-seeking students may bypass an elementary course and enroll in a higher vertically related course. When subject mastery of the bypassed course is regarded by the department to be essential to the understanding of the advanced course, the student with a C or better in the advanced course is eligible to receive credit and a P for any bypassed courses in the same subject-matter area. The necessary forms must be filled out and forwarded by the department concerned. *Advisers should make sure that students are aware of this opportunity for obtaining advanced-placement credit.*

I-2. Students who have completed courses at other institutions after bypassing lower vertically related courses, but have not been awarded advanced-placement credit, will be granted such credit on completion of a yet higher vertically related course at UI.

I-3. Credit is granted for advanced-placement courses completed in high school in which a rating of 5, 4, or 3 is attained in College Board advanced-placement tests.

I-4. UI also grants credit for the successful completion of tests under the College Level Examination Program (CLEP), as approved for specific courses by UI departments, and for courses completed at military schools, as recommended by the American Council on Education.

I-5. With the approval of the University Curriculum Committee's Subcommittee on External Study/Experience and payment of the applicable fees, undergraduates may be awarded lower-division and/or upper-division (100-499 series) credit in recognition of university-level knowledge or competence gained in situations outside of UI's jurisdiction (e.g., in business, industry, government, or community agencies, through travel or private study, or while studying at a proprietary institution). Petitions for such credit must be approved by the student's departmental administrator and academic dean, and must be supported by such evidence as is needed to provide a sound basis for evaluating the student's achievements. Credits granted under this regulation are recorded as "external study/experience" and a P is assigned. The applicability of credits earned through external study/experience toward the satisfaction of specific degree requirements will be determined by the department and division through which the degree is to be granted. (See J-5.) Petition forms for external study/experience are available from Correspondence Study.

I-6. Advanced-placement credit granted by other accredited institutions will be honored on transfer to UI.

I-7. A statement on all forms of advanced placement can be obtained from the Admissions Office.

J—General Requirements for Baccalaureate Degrees

Candidates for baccalaureate degrees must fulfill the following requirements. (See the *Graduate Catalog* for the requirements for graduate degrees. See the College of Law section in part 4 for the requirements for the degree of Juris Doctor.)

J-1. Credit Requirements.

J-1-a. Students must have earned a minimum of 128 credits to be granted a baccalaureate degree from the University of Idaho. Some programs require a higher minimum. For the minimum number of credits required in each degree program, see the major curricula of the various degree-granting units in part 5.

J-1-b. A minimum of 36 credits in courses numbered 300 or above is required for a baccalaureate degree.

J-2. UI Course Requirements.

J-2-a. After a student has completed 88 credits (120 credits in the case of a student working toward the degree of Bachelor of Architecture), he or she must complete a minimum of 32 credits in UI courses. No credits awarded for correspondence study, bypassed courses, credit by examination, College Level Examination Program (CLEP), external study/experience, or technical competence can be counted among these 32 UI credits. Exceptions to this requirement are stated below; exceptions are also made for study abroad and student exchange programs with prior approval by the student's academic dean.

J-2-b. Candidates for baccalaureate degrees at UI centers away from the Moscow campus and candidates whose curricula specifically require the completion of courses offered by institutions other than UI are exempt from the requirement stated in J-2-a. Instead, they must complete a minimum of 32 of the last 64 credits in UI courses other than those offered by correspondence study.

J-2-c. Candidates for the B.S.Ed. degree in vocational education are exempt from the requirement stated in J-2-a; instead, they must complete a minimum of 64 credits in UI courses other than those offered by correspondence study.

J-3. Subject Requirements (Core Curriculum). A university education is a preparation both for living and for making a living. It offers an opportunity not only to lay the foundations of a career, but also to develop the mind to its highest potential, to cultivate the imagination as well as the power to reason, and to gain the intellectual curiosity that makes education a life-long enterprise. A central component of this preparation is the requirement that a student working toward a baccalaureate degree must complete 30-32 credits of course work in the four categories described below. This requirement is to be satisfied by earning the minimum number of credits specified for each category. (Transfer students have two options for fulfilling this requirement; these are described under "Admission Requirements" in part 2 of this catalog—see the section on "General Education Requirements for Transfer Students.") **Courses that have been approved for the fulfillment of the requirement in each category are listed below; students are advised to check with deans' offices for courses that may have been added after the publication of this catalog.** Generally, the approved courses are open to lower-division students and do not have prerequisites. Note: Though a given course may be listed under more than one category, it may be used to satisfy the requirement in only one category; remedial courses may not be used to satisfy any of this requirement. **Degree-seeking students must be enrolled in Math 107 or in a course that meets the core requirement in mathematical, statistical, and computer sciences and in Engl 101 or 102 in their first year in residence and in subsequent years until the core requirements in mathematical, statistical, and computer sciences and Engl 102 have been satisfied.**

J-3-a. Communication (5-7 cr). The purpose of this requirement is to develop the ability to organize one's thoughts, to express them simply and clearly, to observe the standards and conventions of language usage, and to suit tone to audience. The requirement is proficiency in written English equal to that needed for the completion of UI course Engl 102 and the completion of one additional course in this category. The following specific provisions apply to the English composition component:

(1) Students who attain a satisfactory score on the College Board English Achievement or Scholastic Aptitude (Verbal) Test or the American College Testing (ACT) English Test will be awarded credit and grades of P for Engl 101 and 102. Also, students who attain a score of 4 on the Advanced Placement Test in English will be awarded credit and a grade of P for Engl 101 and students who attain a

score of 5 on the Advanced Placement Test in English will be awarded credit and grades of P for Engl 101 and 102.

(2) Students who do not meet the conditions stated in paragraph (1) will be tentatively placed, on the basis of their scores on the tests cited above, in either Engl 101 or 102.

(3) UI accepts credits earned in comparable writing courses taken at other accredited institutions. (See credit limitation in J-5-d.)

Chin 101, Chinese First Semester (4 cr)
ComG 101, Fundamentals of Public Speaking (2 cr)
Engl 207, Persuasive Writing (3 cr)
Engl 208, Personal and Exploratory Writing (3 cr)
Engl 209, Inquiry-Based Writing (3 cr)
Engl 317, Technical and Engineering Report Writing (3 cr)
Fren 101, Elementary French I (4 cr)
Germ 101, Elementary German I (4 cr)
Grek 341, Elementary Greek (4 cr)
Japn 101, Elementary Japanese I (4 cr)
Latn 101, Elementary Latin (4 cr)
Russ 101, First Semester Russian (4 cr)
Span 101, Elementary Spanish (4 cr)

J-3-b. Natural and Applied Science (8 cr). The purpose of this requirement is to develop a better understanding of the physical and biological world by learning some of the principles that explain the natural phenomena of the universe, the experimental method used to derive those principles, and their applications.

Biol 100, Introduction to Biology (4 cr)
Biol 201, Introduction to the Life Sciences (4 cr)
Chem 100, Chemistry and the Citizen (4 cr)
Chem 101, Introduction to Chemistry I (4 cr)
Chem 111, Principles of Chemistry I (4 cr)Chem 112, Principles of Chemistry II (4 cr)
Chem 113, Inorganic Chemistry and Qualitative Analysis (5 cr)
Ent/Biol 211, General Entomology (4 cr)
Geog 100, Physical Geography (4 cr)
Geol 101, Physical Geology (4 cr)
Geol 102, Historical Geology (4 cr)
MMBB 154, 155 Principles of Microbiology and Lab (4 cr)*
Phys 100, Fundamentals of Physics (4 cr)
Phys 111, General Physics I (4 cr)
Phys 112, General Physics II (4 cr)
Phys 211, Engineering Physics I (4 cr)
Phys 212, Engineering Physics II (4 cr)

*To be counted toward satisfaction of this requirement, the full four credits (that is, both the lecture course and the accompanying laboratory course or component) must be completed.

J-3-c. Mathematical, Statistical, and Computer Sciences (3 cr). The purpose of this requirement is to develop logical reasoning processes; skills in the use of numbers, space, symbols, and formulas; and the ability to apply these skills to realistic problems.

CS 101, Introduction to Computer Science (3 cr)
CS 112, Introduction to Problem Solving and Programming (3 cr)
Math 123, The Spirit of Mathematics (3 cr)
Math 130, Finite Mathematics (4 cr)
Math 137, Algebra with Applications (3 cr)
Math 143, Pre-calculus Algebra and Analytic Geometry (3 cr)
Math 160, Survey of Calculus (4 cr)
Math 170, Analytic Geometry and Calculus I (4 cr)
Stat 150, Introduction to Statistics (3 cr)
Stat 251, Principles of Statistics (3 cr)

J-3-d. Humanities and Social Sciences (14 cr, including at least 6 cr in humanities and 6 cr in social sciences). The purpose of this requirement is to explore the collective experience of mankind as it is reflected in literature, philosophy, the arts, and history, to develop an understanding of the inner workings of social processes and institutions, and to provide knowledge of how individuals develop and interact with society.

Humanities
AmSt 301, Interpreting America (3 cr)
Art 100, Visual Art (3 cr)
Engl 257 and/or 258, Literature of Western Civilization (3 cr each)
Intr 126, Film and International Culture (3 cr)
MusH 101, Survey of Music (3 cr)
Phil 103, Ethics (3 cr)
TheA 101, Introduction to the Theatre (3 cr)

Social Sciences
Anth 100, Introduction to Anthropology (3 cr)
Econ 201 and/or 202, Principles of Economics (3 cr each)
Econ 272, Foundations of Economic Analysis (4 cr)
Geog 200, World Regional Geography (3 cr)
Hist 101 and/or 102, History of Civilization (3 cr each)
PolS 101, Introduction to Political Science and American Government (3 cr)
Psyc 101, Introduction to Psychology (3 cr)
Soc 101, Introduction to Sociology (3 cr)

J-4. Grade Requirements. To qualify for the baccalaureate degree, a candidate must have a cumulative grade-point average of 2.00 or better. See exceptions under E-4 and E-5.

J-5. Credit Limitations. A candidate may count toward a baccalaureate degree no more than:

J-5-a. Seventy credits earned at junior or community colleges, or one-half of the total credits required for a student's intended baccalaureate degree, whichever is the higher number.

J-5-b. Forty-eight credits in any combination of credits granted for courses taken at vocational-technical schools, external study/experience, technical competence, correspondence study, credit by examination, or advanced placement (such as CLEP, College Board advanced-placement tests, courses completed at military schools, and credit for bypassed courses). This 48-credit limitation may be exceeded for good cause with the approval of the Academic Petitions Committee (file petition through dean's office). **Note**: credits earned through any combination of external study and technical competence cannot exceed a maximum of 32 of the allowable 48 credits.

J-5-c. Twelve credits earned under the pass-fail option (see B-11).

J-5-d. Six credits in English composition.

J-5-e. Six credits in remedial-level courses; to be counted, these credits must have been earned before the fall semester 1983; no such credits earned after summer session 1983 may be counted.

J-6. Assignment of Curricular Requirements (Catalog Issue). In addition to fulfilling the general university requirements for degrees, candidates must satisfy the particular requirements specified for their curricula. The pertinent requirements are those contained in the UI catalog issue that was in effect at the time of or subsequent to the candidate's enrollment as a degree-seeking student at UI or another institution accredited by one of the regional agencies, such as the Northwest Association of Schools and Colleges. In any case, the catalog issue designated must have been in effect within seven years of the date on which the candidate is to receive the degree.

J-7. Second Baccalaureate Degree.

J-7-a. Students may concurrently pursue two different majors leading to two different baccalaureate degrees (e.g., B.A. and B.S.Ed.) from UI by working to fulfill the general university requirements for one degree and the departmental and college subject-matter requirements for each. For exceptions to this regulation, see notes with the curricula in general studies and general agriculture in part 5. Students who plan to pursue two degrees concurrently should develop a schedule of studies that combines the degree requirements and present it to the dean(s) of the college(s) concerned as early as possible, preferably before the end of the junior year.

J-7-b. Students who have earned a baccalaureate degree at UI and who wish to complete the requirements for a different major and receive a second baccalaureate degree must earn at least 16 credits in UI courses other than those offered by correspondence study after the receipt of the first degree and fulfill the departmental and college subject-matter requirements for the second degree. (See B-9.) Students may return to UI and earn a second degree carrying the same name as one previously granted by UI so long as the requirements for a different major are satisfied and the students earn at least 16 credits in UI courses other than those offered by correspondence study after the receipt of the first degree. For exceptions to this regulation, see notes with the curricula in general studies and general agriculture in part 5. This regulation does not apply to students who were concurrently pursuing two different degrees under regulation J-7-a or to students who were concurrently pursuing two different majors under regulation J-8.

J-7-c. Students who have a baccalaureate degree from another recognized institution and who wish to earn another baccalaureate degree at UI must earn a minimum of 32 credits in UI courses other than those offered by correspondence study after the receipt of the first degree and fulfill the departmental and college subject-matter requirements for the degree. (See B-9.)

J-8. Degree with Double Major. Students may complete two different majors (curricula) offered under a particular baccalaureate degree and have both majors shown on their academic records and diplomas, e.g., Bachelor of Arts with majors in history and political science. Each of the majors must lead to the same degree. When majors leading to different degrees are involved, see the requirements applicable to the awarding of a second baccalaureate degree (J-7).

J-9. Academic Minors.

J-9-a. An academic minor is a prescribed course of study consisting of 18 or more credits. For descriptions of minor curricula, see the programs of the degree-granting units in part 5. In the following paragraphs of J-9, "minor" denotes "academic minor," which is to be distinguished from "teaching minor"; for information on the latter, see the College of Education section of part 4.

J-9-b. A student may pursue one or more minors in addition to a major by filing with the registrar a declaration of intention to do so. Completion of a minor is required only if specified by the degree-granting unit, but any minor completed is recorded on the student's academic record.

J-9-c. Transfer credits may be applied to a minor with the approval of the department offering the minor; however, the last nine credits applied to completion of the minor must be earned in UI courses and may not include credits earned through correspondence study.

J-9-d. student may complete an undergraduate minor even though he or she has already earned a baccalaureate degree. If the sole objective is to complete an undergraduate minor, the student normally registers as a major in the department offering the minor or as "undeclared" in the college in which the minor is offered. If the baccalaureate degree was earned at UI, the student must complete at least six additional UI credits that apply to the minor (these six credits may not include any earned through correspondence study). If the degree was earned elsewhere, the conditions stated in J-9-c apply.

K—Academic Honors

K-1. Graduation with Honors. Candidates for baccalaureate degrees are graduated with honors if their cumulative grade-point averages are as specified in K-1-a, K-1-b, or K-1-c and if they have earned at least 56 credits in UI courses. No credits earned through correspondence study, bypassed courses, credit by examination, College Level Examination Program, external study/experience, or technical competence may be counted among these 56 credits. With prior approval by the student's academic dean, credits earned in special programs, such as study abroad and student exchange programs, may be counted. Candidates for the degree of Juris Doctor are graduated with honors under the same conditions, except that at least 88 credits in law courses are required and the grade-point average considered is based exclusively on the student's record in the College of Law. Honors are not awarded with degrees earned through the College of Graduate Studies.

K-1-a. Candidates whose grade-point averages would place them within the top 3 percent of graduates from their respective colleges over the preceding five years are graduated *summa cum laude* (with highest distinction).

K-1-b. Candidates whose grade-point averages would place them within the top 6 percent (but below the top 3 percent) of graduates from their respective colleges over the preceding five years are graduated *magna cum laude* (with great distinction).

K-1-c. Candidates whose grade-point averages would place them within the top 10 percent (but below the top 6 percent) of graduates from their respective colleges over the preceding five years are graduated *cum laude* (with distinction).

K-2. Dean's List. Students who are carrying 14 credits (10 in the College of Law) and attain a grade-point average of 3.30 (3.00 in the College of Law) for a given semester are placed on lists prepared for the college deans. (Except for grades of P earned in Engl 101 and 102, credits for which a student was graded P are not computed in the specified minimums.) These lists are publicized within UI and are distributed to news agencies.

L—Academic Probation, Disqualification, and Reinstatement

L-1. Academic Probation for Undergraduates.

L-1-a. At the end of a semester, undergraduate students who do not attain the cumulative grade-point average required for their rank (see L-5) are placed on academic probation for the next semester of enrollment and are referred to the appropriate academic dean for advising. The effect of this probationary status is to serve notice that if a student's cumulative record at the end of the next semester in residence is unsatisfactory he or she will be disqualified and ineligible to continue at UI.

L-1-b. Students on academic probation who attain a cumulative grade-point average higher than the minimum required for their rank are automatically removed from probation.

L-1-c. Students on academic probation who attain a grade-point average of 2.00 or higher during the next or subsequent semester after being placed on probation, but whose cumulative grade-point average is still below the minimum required for their rank, remain on academic probation.

L-2. Disqualification for Undergraduates. Students on academic probation will be disqualified at the end of a probationary semester unless the minimum cumulative grade-point average required for their rank, or a semester grade-point average of at least 2.00, is attained. To reregister after being academically disqualified, students must be reinstated.

L-3. Reinstatement for Undergraduates.

L-3-a. After a first disqualification, students may be reinstated (i.e., have their eligibility to continue restored) by petition to and favorable action by the college in which they are enrolled OR by remaining out of UI for at least one semester. Summer does not qualify for a semester lay-out period.

L-3-b. After a second disqualification, students may be reinstated at any time only by petition to and favorable action by the college in which they are enrolled.

L-3-c. Students disqualified for a third time may be reinstated only after successful petition to the college in which they are enrolled and the Academic Petitions Committee.

L-3-d. Students who have been reinstated may continue to be reinstated with the approval of the dean of the college in which they are enrolled so long as they attain a 2.00 or better grade-point average for each semester following the first disqualification.

L-3-e. Students who attend another institution while under a first disqualification at UI will have an automatic reinstatement at UI if they maintain a grade-point average of 2.00 or higher at the other institution (see L-3-a). If a grade-point average of 2.00 or higher is not maintained, the student must meet the requirements applying to the admission of transfer students in order to reenter UI.

L-3-f. Students who are disqualified and reinstated are reinstated on academic probation.

L-4. Dean's Referral for Undergraduates. Students who attain a grade-point average below 1.50 during a given semester without dropping below the cumulative grade-point average required for their rank receive a dean's referral. Although this does not affect their eligibility to register, the students are referred to the appropriate academic dean for advising.

L-5. Academic Probation and Disqualification Cutoff by Rank for Undergraduates.

Rank (by Credits Earned)	Minimum Cumulative Grade-Point Average
0 through 32	1.60
33 through 64	1.80
65 and up	2.00

L-6. Registration Pending Removal of Incompletes for Undergraduates. Regulation F-2 provides that in cases where a student's eligibility to reregister is contingent on removal of incomplete grades, the student may not be granted an extension of time for such a removal.

L-7. Summer Session. Disqualification at the end of a spring semester does not affect a student's eligibility to continue in the immediately ensuing summer, but to register in any subsequent term the student must be reinstated.

L-8. Fresh Start. Qualified undergraduate students who wish to reenter the university in a specific degree program after a period of absence will be allowed a "Fresh Start" as described below.

L-8-a. To qualify for a Fresh Start, students (1) must not have been enrolled in any college or university as a full-time matriculated student for at least the five years immediately before applying for the program, (2) must have a UI cumulative GPA of less than 2.00, and (3) must be approved for the program by the college that administers the academic program they wish to pursue.

L-8-b. Once the student has completed an additional 24 credits of course work with a Fresh Start cumulative GPA of at least 2.00 and has been in the program at least two semesters, the cumulative GPA will be reset to 0.00 as of the time of admission to the Fresh Start Program.

L-8-c. Students in the Fresh Start Program will be allowed a maximum of six credits of "W" during the first two semesters after admission to the program. If the Fresh Start is successfully completed, the count for the 20-credit limit on withdrawals (see C-2) will be reset to 0 as of the time of admission to the Fresh Start Program.

L-8-d. University probation and disqualification regulations apply throughout the Fresh Start process.

L-8-e. To graduate with honors, a student in the Fresh Start Program must have at least 56 credits in UI courses after the Fresh Start (see K-1). Fresh Start Program participants are eligible for the dean's list (see K-2) on a semester-by-semester basis.

L-8-f. Application forms and explanatory materials are available at the Registrar's Office.

L-9. This regulation L does not apply to law, graduate, or full-time nonmatriculated students.

M—Attendance, Repeated Absences, Field Trips, and Official Student Travel

M-1. Attendance. Students are responsible for class attendance; in all cases of absence, students are accountable for the work missed. In the case of officially approved absence and on the request of the student, the instructor is obligated to provide an opportunity for the student to make up for missed work. In general, an absence is considered "official" when the student is: (a) participating in an approved field trip or other official UI activity (e.g., athletics, debate, music, or theatre arts); (b) confined under doctor's orders; (c) called to active military duty during emergency situations; or (d) granted a leave of absence from UI for reasonable cause by his or her academic dean.

M-2. Repeated Absences. In courses where a substantial amount of the content can be mastered only or primarily through class participation, regular and punctual attendance is essential and may, therefore, be reflected in grading. Instructors will make clear at the beginning of each course the extent to which grades are dependent on attendance. Instructors may report to the registrar students who are repeatedly absent from classes (a form is available from departmental and college officials). Absences may be considered excessive when their number equals or exceeds the number of credits in a particular course.

M-3. Field Trips and Official Student Travel. "Field trip" is defined as any required, course-related student travel that exceeds 25 air miles from the campus or conflicts with other classes that the students involved are taking. (A trip taken within 25 air miles during the time scheduled for the particular class or at a time that does not conflict with other classes the students involved are taking is a "local trip," not a "field trip.")

M-3-a. Missed Class Work. Students participating in field trips, as defined above, or other official UI activities are responsible for conferring in advance with the instructors of any classes that will be missed in order to be eligible for making up missed class work. (See M-1.)

M-3-b. Approval of Course-Related Field Trips. Administrative approval for course-related field trips will be obtained by the person in charge of the trip as follows:

(1) Each field trip as identified in the catalog course description requires prior approval by the department in accordance with divisional procedures (application for approval should be made at least one week before the expected departure).

(2 Each field trip NOT identified in the catalog course description requires prior approval by the departmental administrator, the dean of the college, and the provost (application for approval should be made at least two weeks before the expected departure).

M-3-c. Approval of Other Official Student Travel. Administrative approval for official student travel that is NOT course related is obtained from the coordinator of student ser-

vices (application for approval should be made at least two weeks before the expected departure).

M-3-d. Costs. When a college can cover all or part of the cost of a course-related field trip from allocated funds, the college should do so. If the college cannot cover the cost, or a portion thereof, the cost (or remaining portion) must be borne in proportionate share by the students in the course. Students missing required field trips identified in the catalog course description must pay their proportionate shares.

M-3-e. Field-Trip Completion Deadline. All field trips and other UI-approved student travel must be completed before 7:30 a.m. on the fifth day of classes before the start of final examinations.

M-3-f. Unofficial Student Travel. UI student accident insurance does not cover injuries sustained in the course of travel unless the travel has been officially authorized by the appropriate UI agent.

M-3-g. Vehicle Information. Information concerning privately owned vehicles (registration, insurance, driver's license, etc.) to be used for field trips or other official student travel must be filed in the Business and Accounting Services Office (Rm. 101, Ad. Office Bldg.). Administrators of departments and divisions are responsible for ensuring that the required information is filed before the initial use of each privately owned vehicle in a given academic year.

M-4. Accommodation of Religious Observances in the Administration of Examinations. When tests or examinations fall on days objectionable to a student because of religious beliefs, the student should contact the instructor as soon as possible. The instructor may require the student to submit a concise, written statement of the reasons for the request. If the request appears to be made in good faith, the instructor should make alternate arrangements for the administration of the examination or test. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the departmental administrator, dean, or provost, in that order.

N—Class Rating

Class ratings of undergraduates are determined as follows: sophomore-26 credits, junior-58 credits, and senior-90 credits.

O—Miscellaneous

O-1. Credit Requirements for Full-Time Students.

O-1-a. For purposes other than fees, UI students in all divisions except the College of Graduate Studies must carry 12 credits each semester to be classified as full time.

O-1-b. For fee and tuition purposes only, students carrying eight or more credits (or equivalent in audits and zero-credit registrations) and all teaching/research assistants on full appointment, regardless of the number of credits they register for, are classified as full-time students.

O-1-c. Students in the College of Graduate Studies are considered full time: **(1)** when registered for nine credits (or equivalent) of course and/or thesis work; or **(2)** when on regular appointments as teaching assistants or research assistants.

O-1-d. Veterans and war orphans attending UI on the G.I. Bill must carry certain minimum credit loads to be considered by the Veterans' Administration for benefits as indicated in the table accompanying this regulation. (Audits do not count; repeats and reviews may be included when the student's adviser certifies that the course is required in the student's curriculum or is needed to remove a deficiency or to provide essential background for the student's program; file a copy of the program with the veterans' clerk at Student Advisory Services.)

MINIMUM CREDIT LOADS FOR VETERANS' BENEFITS

Benefits	Academic Year Undergraduate	Academic Year Graduate	Summer Session Undergrad. & Grad.
Full	12 or more	9 or more	Must be arranged
Three-fourths	9-11	6-8	
Half	6-8	4-5	
Fees & tuition only	fewer than 6	fewer than 4	

O-1-e. During the eight-week summer session, students are considered full time for fee and other purposes when carrying six or more credits (or equivalent).

O-1-f. The president, vice president, and senators of the Associated Students University of Idaho are considered full time when carrying at least the following credit loads: president, three credits; vice president and senators, six credits. The editor and associate editor of the *Argonaut* are considered full time when paying full-time student fees and carrying at least the following credit loads: editor, three credits; associate editor, six credits.

O-2. Academic Performance. Instructors and students are responsible for maintaining academic standards and integrity in their classes. An instructor may reduce a student's grade for dishonesty in a course, but the effect may not be greater than the proportionate value of the work involved to the total requirements. If the student deems the reduction of the grade unfair, he or she may appeal through the appropriate departmental administrator and college dean, and finally to the Academic Hearing Board. Disciplinary penalties for academic dishonesty must be handled by the Student Judicial System.

O-3. Application for Degrees. Candidates for degrees must, at the beginning of the last semester or summer session in residence, pay the diploma fee and file an application with the dean of the division through which the degree is offered. If two degrees are to be received concurrently, separate applications must be filed with the dean(s) of the division(s) concerned. The application must be filed with the dean after the diploma fee has been paid at the Business and Accounting Services Office. (See "Fees and Expenses" in part 2.) The last day for filing applications for baccalaureate degrees is the beginning of the third week of the semester or the beginning of the second week of summer session. The last day for filing applications for graduate degrees is the beginning of the fourth week of the semester or the beginning of the third week of summer session. If applications for degrees are transmitted by the dean to the registrar less than one month before the end of the academic session in which graduation requirements are completed, the applications will be held by the registrar and processed with those received at the beginning of the next academic session.

O-4. Commencement. Formal commencement exercises are held only at the close of the spring semester; however, diplomas are also issued at the close of the summer session and the fall semester to such candidates as have completed their graduation requirements at that time. All students who graduate in the summer, fall, or spring are entitled to participate in the annual commencement exercises. Candidates who DO NOT intend to participate in the formal commencement exercises must notify the dean of the division in which the degree program is offered before the close of the academic session in which graduation requirements are completed so that appropriate arrangements can be made. Reservations for caps, gowns, and hoods must be made by the date specified by the registrar. Diplomas are ready about five weeks after the end of the academic session in which graduation requirements are completed.

O-5. Limitations on Class Size.

O-5-a. Limitations on class size must have prior approval by the dean of the college in which the course is offered. If it becomes necessary to limit the size of a class on a continuing basis (more than two semesters), the limitations must be approved through faculty channels—University Curriculum Committee and university faculty—and be made part of the catalog description of the course.

O-5-b. Preference for enrollment in courses with limitations on class size is given to students enrolling in them for the first time. At the option of the department, students repeating courses for any reason may be placed on standby status. Students in that status are allowed to register for the course, if there is available space, by permission of the department offering the course. In no case may a student be held in standby status for any one course for more than two consecutive semesters.

O-5-c. Any student denied admission to a class may appeal in writing to the provost for a review of the circumstances involved.

O-6. Students' Right to Change Course Sections. Students have the right to change from one section of a course for which they are qualified to another section of the same course during the first two weeks of classes so long as the section into which they wish to transfer has not reached the maximum number of students that may be accommodated. (See appeal procedure in O-5.)

O-7. Availability of Instructors' Names. As a matter of principle, students and their academic advisers and deans have the right to know the names of the instructors who will teach course sections to be offered during the immediately ensuing semester or summer session. Departments are required to submit the names of instructors for all course sections for publication in the Time Schedule. Where it is impossible to determine the teaching assignments of individual members of the instructional staff before the deadline for the Time Schedule, departments are responsible for making information concerning adjustments in teaching assignments generally available to students, advisers, and deans at such time as they occur.

O-8. Confidentiality of Academic and Counseling Records. See the student records policy in the booklet entitled "Policies and Information of Interest to Students," available from the Office of Student Advisory Services (UCC 241), the Office of the Vice President for Student Affairs (Student Union Building), and other locations around the campus.

O-9. Deviations from Established Class Schedules.

O-9-a. The provost periodically reminds deans and departmental administrators of their responsibility to ensure that classes meet in conformity with the course descriptions and Time Schedule. (It is the responsibility of the University Curriculum Committee to see that the time requirements stated in new or revised course descriptions satisfy general regulation D-1, "Credit Defined"; it is the responsibility of the registrar to see that listings in the Time Schedule conform to the respective course descriptions.)

O-9-b. The cancellation of a particular class session or sessions on an occasional basis, normally due to unusual circumstances affecting the instructor of or the students in the class, is a matter for the instructor's discretion. Nonetheless, instructors should keep such cancellations to a minimum, be satisfied that the grounds for cancellation are defensible, give as much advance notice of the cancellation as is possible, and, if time permits, obtain the concurrence of the departmental administrator in advance. Frequent failure of an instructor to meet classes, except for reasons clearly recognizable as adequate, may be grounds for disciplinary action.

O-9-c. The scheduling of required class meetings at times other than those specified in the Time Schedule or authorized in the course descriptions (e.g., field trips) requires approval by the provost. In addition to securing the provost's approval, the instructor must give the students at least two weeks' notice, provide alternative means of completing class requirements for students who have irreconcilable conflicts with the irregular meetings, and, normally, cancel regularly scheduled class meetings equivalent to the irregular meetings. (If it is proposed that such irregular meetings be made a continuing practice, they are to be incorporated in the course description and the revised description submitted to the University Curriculum Committee for routine faculty approval.)

O-9-d. Authorized class meetings at times other than those shown in the Time Schedule is one of the topics that instructors are to discuss at the first or second class session.



College of Agriculture

David R. Lineback, Dean (53 Iddings Wing, Ag. Sc. Bldg.; 208/885-6681); Al J. Lingg, Associate Dean and Director of Academic and International Programs; LeRoy D. Luft, Associate Dean and Director of the Cooperative Extension System; Richard C. Heimsch, Interim Associate Dean and Interim Director of the Idaho Agricultural Experiment Station.

The College of Agriculture provides quality programs in agriculture, family and consumer sciences, and related areas to all of Idaho. In addition to academic programs, the college also advances knowledge in these areas through research conducted through the Idaho Agricultural Experiment Station and provides information transfer and application of new knowledge to the state and the nation through the Cooperative Extension System. The college also actively participates in international development and student and faculty exchange programs around the world. The College of Agriculture was established in 1901. The Margaret Ritchie School of Family and Consumer Sciences became part of the college in 1983.

Advantages

The College of Agriculture offers a quality education in a professional and friendly atmosphere. Each student has a faculty adviser who is readily available to assist in academic and career planning. There is also a peer advising program to help first-time students become acquainted with the college and the university. Undergraduate students often have the opportunity to experience their major by working on research projects and internships directed by faculty members. The college also offers leadership opportunities through 18 departmental and college student organizations.

Faculty

The faculty are the key to quality education. In the College of Agriculture, there is a low student/teacher ratio and most classes are taught by faculty members. They bring to their students a strong commitment to teaching and a richness of depth, experience, and research.

Units

The College of Agriculture offers 23 majors through 8 academic units. The units are Agricultural Economics and Rural Sociology; Agricultural and Extension Education; Animal and Veterinary Science; Biological and Agricultural Engineering; Family and Consumer Sciences; Food Science and Toxicology; Microbiology, Molecular Biology and Biochemistry; and Plant, Soil and Entomological Sciences.

Facilities of the College

The College of Agriculture is housed in five buildings on campus and in many other facilities around the state. Some of the unique facilities include a child development laboratory, student computer laboratories, an agricultural engineering laboratory, a food science and toxicology research center, and research farms of more than 2,500 acres for beef, dairy, sheep, plant science, and other programs. In addition to facilities at Moscow, there are offices in 42 counties and research and extension centers at 10 locations throughout Idaho.

Agricultural Experiment Station

The Idaho Agricultural Experiment Station was established in 1892 as the research function of the College of Agriculture and has the responsibility to conduct applied and basic investigations leading to problem solving and new knowledge for agricultural industries, rural communities, and family living. The Idaho Agricultural Experiment Station is coordinated with and provides research for teaching and extension to more effectively meet the needs of Idaho citizens.

The Idaho Agricultural Experiment Station is integrated into all departments of the college. Thus, most of the college's teaching faculty also have partial research appointments in the experiment station. Other faculty members have combined extension and research appointments and some are assigned to full-time research.

The Idaho agricultural research program is statewide. Research is conducted in a number of areas related to agriculture and on all major agricultural commodities. The center for the research program is located on the Moscow campus. In addition, there are 10 research and extension centers in strategic agricultural areas around the state where resident research and extension personnel are located.

The Idaho Agricultural Experiment Station shares the responsibility of developing and educating future scientists through graduate assistantship programs. Currently, there are approximately 190 graduate students enrolled in the College of Agriculture, most of whom are on assistantships or stipends. These appointments are generally for two years at the Master of Science level and for three years in Ph.D. programs during which time the students conduct research as a part of their graduate education.

Cooperative Extension System

The Cooperative Extension System was established by the Smith-Lever Act, signed May 8, 1914, to help extend research to the people of the United States in order to improve their farms, families, and communities. The Idaho legislature approved the Cooperative Extension concept in 1915. In 1917, additional state legislation brought the county boards of commissioners into the cooperative three-way federal, state, and county partnership.

The Cooperative Extension System is an integral part of the University of Idaho and the College of Agriculture and is administratively coordinated with the teaching and research functions of the college. The extension function is organized to extend the knowledge created through research to the people of the state of Idaho so that they can apply the findings to their particular situations, thereby solving their problems and improving their quality of life.

The headquarters of the Cooperative Extension System is at Moscow. District offices are located at Moscow, Boise, Twin Falls, and Idaho Falls. The state is the campus for the Cooperative Extension System.

Educators live and work in the areas to which they are assigned by mutual agreement of the university and the counties involved. Agricultural, family and consumer sciences, and youth educators are located in 42 of Idaho's 44 counties and are also involved in multi-county programming.

Backstopping the county faculty are state Extension specialists located at Idaho Falls, Parma, Caldwell, Aberdeen, Boise, Sandpoint, Soda Springs, Twin Falls, Moscow, and Kimberly. These specialists, in turn, keep up to date by cooperating with research scientists of the College of Agriculture and the U.S. Department of Agriculture.

Extension educational programs are conducted in four broad areas. These are: (1) agriculture and natural resources, (2) family and consumer sciences, (3) 4-H and youth development, and (4) rural development. Programs are both disciplinary and interdisciplinary and are designed to address the issues facing Idahoans. Major programming issues include water quality, youth at risk, waste management, food quality, nutrition, and agricultural sustainability.

The University of Idaho Cooperative Extension System helps people improve the social, economic, and environmental qualities of their lives through research-based education and leadership development focused on issues and needs. To accomplish this mission, the Cooperative Extension System works under the basic philosophy that programs planned with people will achieve greater success than programs planned for them. Extension takes the resources and research of the land-grant university out into the state so that Idaho's citizens can benefit from their university.

Degrees and Curricula Offered

Students in the College of Agriculture are encouraged to pursue a broad education. In each curriculum, minimum requirements are specified in agriculture or family and consumer sciences disciplines; in the life, physical, and social sciences; and in humanities to qualify the graduate to enter professional fields in agriculture and family and

consumer sciences. Each curriculum also permits students to choose elective courses that will assist in personal and professional growth, development of communication skills, and a better understanding of the world in which we live.

Undergraduate. Baccalaureate degrees and major curricula offered by the College of Agriculture include Bachelor of Science degrees in General Agriculture; Agricultural Education; Agricultural Economics (with majors in agricultural economics, agribusiness, and natural resources and rural development); Agricultural Systems Management; Animal Science (with majors in animal science, agribusiness, dairy science, and range-livestock management); Entomology; Family and Consumer Sciences (with majors in child, family, and consumer studies; clothing, textiles, and design; and food and nutrition); Food Science; Microbiology; Molecular Biology and Biochemistry; Plant Science; Soil Science; and Veterinary Science. See the departmental sections below for the programs of study leading to these degrees.

Graduate. Graduate study leading to the degree of Master of Science is offered in Agricultural Economics; Agricultural Education; Animal Science; Entomology; Family and Consumer Sciences; Food Science; Microbiology, Molecular Biology and Biochemistry; Plant Science; Soil Science; and Veterinary Science. Graduate study leading to the degree of Doctor of Philosophy is offered in Animal Physiology; Entomology; Microbiology, Molecular Biology and Biochemistry; Plant Science; and Soil Science. Both M.S. and Ph.D. programs in Agricultural Engineering are offered through the College of Engineering. Students must fulfill the requirements of the College of Graduate Studies and the units in which they study. Consult the *Graduate Catalog* for further information.

General Requirements for Graduation

University Requirements. See regulation J in part 3 for requirements that all students in the university must meet.

College Requirements. See part 5 for specific degree requirements within each department.

Major Curricula

The specific requirements for the undergraduate majors are listed in part 5. Each student is assigned an adviser who assists in the planning of his or her program; however, the student has the final responsibility for the completion of all university, college, and departmental requirements.

College of Art and Architecture

Paul G. Windley, Dean (Art and Arch. North Annex; 208/885-6272).

The College of Art and Architecture was established in 1981 to bring together disciplines that deal with creation of the visual and physical human environment. The specific disciplines are art, architecture, landscape architecture, and interior planning and design. This combination not only increases the resources available to students, but also brings together a community of creative scholars with a common dedication to a high quality physical environment. The quality of these programs has earned the college an excellent and widespread reputation.

The objective of the College of Art and Architecture is to provide an educational experience for qualified students in the design-related disciplines. Upon completion of a program in one of these disciplines, a person should develop into a professionally competent individual, capable of making useful and valuable contributions to his or her profession and society.

Aptitudes

Students likely to succeed in the design fields are those with a serious purpose and willing to work hard. Equally important are: (1) ability to visualize in three dimensions; (2) ability to be creative and inquisitive; (3) ability to draw; (4) facility in the use of written and spoken English; and (5) possession of personal attributes that enable one to inspire associates and assistants to work together effectively.

Faculty

The faculty is the key to the quality of the educational experience obtained through the college programs. Combining the energies of a well recognized, scholarly and creative faculty with the innovative talents of experienced architects, designers, and artists, the college develops the skills of future professionals by preserving the balance between the theoretical and practical aspects in each of the programs represented. Within the design professions focus is placed on the application of contemporary design techniques, with an understanding of their historical development.

Facilities

The College of Art and Architecture is housed in five buildings which are located in the very center of the university campus. These buildings are all in close proximity, and well placed in relationship to university classroom buildings, library, administrative offices, and recreational facilities. The Ridenbaugh Hall Gallery on campus and the Prichard Gallery in downtown Moscow are administered by the college and provide support to all college disciplines.

Departments

There are three departments in the college: Architecture, Art, and Landscape Architecture. An interior planning and design program is offered through the Department of Architecture. Although these departments are separate entities, the teaching, research, and service missions of all the departments are integrated and coordinated at the college level.

Fees

Students in the College of Art and Architecture pay a general fee and special fees for certain courses. See "Fees and Expenses" in part 2 of this catalog.

Preparation and Admission

A statement of admission requirements is included in part 2 of this catalog. Students who contemplate entering the College of Art and Architecture with advanced standing from a junior college or other institution should complete as many of the freshman and sophomore requirements listed in the curricula as possible. Certain courses are prerequisites to many advanced courses, and their omission will delay graduation. Certain grade-point averages and other conditions are required for entering into particular programs in the college. See the preface to each curriculum.

Degrees

Curricula leading to the following degrees are offered by the college: Bachelor of Architecture (B.Arch.), Bachelor of Fine Arts in studio art, interior planning and design, or photography (B.F.A.), Bachelor of Science in Art Education (B.S.Art Ed.), and Bachelor of Landscape Architecture (B.L.Arch.). In addition, a Bachelor of Arts degree (B.A.), with a major in art, is available through the College of Letters and Science. The majority of courses taken in the B.A. curriculum are housed within the College of Art and Architecture. Both the B.A. and B.F.A. degrees in art are available with eight areas of emphasis: drawing, painting, ceramics, sculpture, textile design, printmaking, photography, and graphic design. Graduate degrees are offered in the following areas: Master of Architecture (M.Arch.), Master of Fine Arts (M.F.A.), Master of Arts in Teaching (M.A.T.), and Master of Arts (M.A.) with a major in architecture.

Undergraduate Program

The undergraduate curricula are designed to provide both a general and a professional education. All curricula within the college include

a first-year basic design core as well as foundation courses unique to each discipline. The college design core for all undergraduate majors consists of Art 100, 111-112, and 121-122. The curricular options in each department offer many courses in common with other college departments. Flexibility and individuality in each student's program are provided by curriculum choice, by options within curricula, and by elective credits.

Graduate Programs

Graduate programs in the College of Art and Architecture offer the flexibility of independent studies and the guidance of an assigned faculty adviser/mentor. Students are responsible for formulating a detailed plan of study under faculty guidance. It is intended that graduate study serve as a transition from undergraduate apprenticeship to the student's emergence as a fully independent, creative artist or designer. Assistantships are available to help highly qualified students in their graduate program. More complete information on graduate studies is contained in the Graduate Catalog, which may be obtained from either the College of Graduate Studies or the registrar.

Scholarships and Awards

Scholarships and awards are available to students and prospective students. See "Financial Aid" and "Special Awards" in the Student Advisory Services section of part 2. Also, get in touch with specific program administrators.

General Requirements for Graduation

University Requirements. See regulation J in part 3 for the all-university requirements for graduation.

College Requirements. See part 5 for specific degree requirements within each department.

On registering for any course offered in this college, the student agrees that the department offering the course may retain work completed by the student. The department will make retained work available to the student for photographing.

College of Business and Economics

Byron J. Dangerfield, Dean (211-A Admin. Bldg.; 208/885-6478); Dana Wekerle, Administrative Coordinator; Cheryl A. Wallace, Secretary of the College Faculty.

The College of Business and Economics is an integral part of the University of Idaho, a statewide comprehensive university and the land-grant institution. The university is a residential campus and has the lead role in both the liberal arts and the traditional land-grant areas of study. The programs offered by the College of Business and Economics are built on the foundation of a well-rounded, broad education in the humanities, the social and natural sciences, and mathematics. The college's core curriculum and its specialized programs support and complement the university's professional programs in areas such as agriculture, architecture, education, engineering, forestry, law, medicine, mining, and tourism.

The College of Business and Economics serves the public and private sectors of the Northwest by providing business-oriented education, research, and extension services to meet the needs of organizations and individuals in the region. These services are delivered in three ways: (1) academic programs built on a broad foundation in the liberal arts that develop critical and creative thinking, programs that facilitate the acquisition of professional knowledge and the mastery of related skills, and cultivate attitudes conducive to life-long learning; (2) research programs that advance the body of knowledge and create the scholarly atmosphere essential to good teaching, and (3) programs and applied research that foster communication between the academic community and the private and public sectors of the region.

The college was established as a professional division of the university in 1925. Long known as the College of Business Administration, it became the College of Business and Economics (CBE) in 1969. Its principal objective is to provide a sound background in the basic business principles that will help graduates as they advance into positions of responsibility. As part of a state-supported land grant university, the CBE also aims to give its students an appreciation of the social importance and responsibilities of businessmen and businesswomen, and both the values and the knowledge to discharge those responsibilities.

Through the Center for Business Development and Research, the college contributes to business development and the advancement of knowledge about our state's economy and its business activities. The center conducts management development programs for business and governmental organizations including the annual Public Utilities Executives' course, a business publications program to provide data on the Idaho economy, and funded research projects that involve CBE and other UI faculty members and students in solving practical problems in Idaho and the Northwest.

International Business Programs. There are various programs by which a UI student can pursue international business. The following programs are available in connection with a B.S.Bus. degree: a major or minor in a foreign language; a major or minor in international studies; a major or minor in political science. For students seeking a B.S.Bus. degree, a minor is offered in international business (see Department of Business below). In addition, a student may have a dual major in business and foreign languages or major in foreign languages (B.A.) with a business option. A third option is the international studies program (B.A.), which may be selected by itself or as a dual major with business. Contact the Dean's Office in the College of Business and Economics for further information on international business programs.

Curricula and Degrees Offered

Undergraduate. The degree of Bachelor of Science in Business is offered with seven majors through three departments, as follows: Department of Accounting — accounting; Department of Business — finance, human resources management, information systems, marketing, and production/operations management; Department of Economics — economics.

Specific requirements for each major are described in part five, "Departments of Instruction," under the appropriate department. The program of study includes three principal components: the general university requirements, the business and economics core, and the requirements for the selected CBE major field. Detailed statements of college requirements are under "General Requirements for Graduation."

Graduate. The CBE, through the College of Graduate Studies, offers the degrees of Master of Accountancy (M.Acct.) in accounting and the Master of Science (M.S.) in economics. The M.Acct. degree qualifies students to enter the public accounting profession in auditing, tax, or other positions ultimately requiring a Certified Public Accountant (CPA) license. The M.S. in economics provides students with a firm background in theory, and then emphasizes training in policy analysis and applied studies.

Graduate students must fulfill the requirements of the College of Graduate Studies and the department in which they study. Consult the *Graduate Catalog* for further information.

Standing of the College

Fully accredited by the American Assembly of Collegiate Schools of Business (AACSB) and the Northwest Association of Schools and Colleges, the College of Business and Economics keeps apace of developments in business through membership in various professional organizations and by consultation with Idaho business leaders, particularly through the CBE Advisory Board. The outstanding achievements of CBE graduates in business and

government, and in professional certification examinations, such as the CPA exam, attest to the quality of the programs.

General Requirements for Graduation

University Requirements. See regulation J-3 in part 3 for requirements that all students in the university must meet.

College Requirements. Before proceeding to upper-division work, students registered in the College of Business and Economics must: (1) complete at least 58 semester credit hours with a minimum cumulative grade-point average of 2.00 and (2) earn at least a 2.40 grade-point average in Econ 272, Foundations of Economic Analysis, or Econ 201 and 202, Principles of Economics; Acct 201 and 202, Introduction to Financial Accounting and Introduction to Managerial Accounting; and Stat 271, Statistical Inference and Decision Analysis.

A student is required to take at least 64 credits of nonaccounting, nonbusiness law, and nonbusiness course work. Undergraduate students enrolled as majors in the College of Business and Economics may not take any CBE course on a pass/fail basis, with the exception of those courses offered only on a P/F basis.

Courses completed at a two-year college for transfer into the CBE core or major must be validated before they will be accepted for upper-division course requirements. Validation procedures are established by the faculty members of the CBE department offering these courses. Validation techniques include a proficiency examination, CLEP testing, or successful completion of an additional advanced course in the given field.

Candidates for the B.S.Bus. degree must be accepted officially as majors in the College of Business and Economics for at least their last two semesters before graduation, excluding summer sessions, and complete at least the last 24 credit hours applicable toward their degree during this period.

All majors require the completion of at least 128 credit hours. The required program of study includes: (1) at least 64 credit hours of nonaccounting, nonbusiness law, and nonbusiness course work, (2) 34 credit hours in the business and economics core, and (3) the major-specific required credit hours in the selected CBE major field. Additional undesignated electives are included in the 128 required credit hours.

A. *UNIVERSITY/CBE GENERAL CORE REQUIREMENTS:*

Course	Credits
Communication:	
ComG 101 Fundamentals of Public Speaking	2
Engl 101 Introduction to College Writing	3
Engl 102 College Writing & Rhetoric	3
Engl 207 Persuasive Writing or 208 Personal & Exploratory Writing or 209 Inquiry-Based Writing or 313 Business Writing or 317 Technical & Engineering Report Writing	3
Mathematics:	
Math 130 Finite Mathematics and 160* Survey of Calculus or 170 Analytic Geom & Calculus I; or Math 170 and 175 Analytic Geom & Calculus I, II	8
Stat 271 Statistical Inference & Decision Analysis	4
Social Sciences:	
Econ 272** Foundations of Economic Analysis or Econ 201, 202 Principles of Economics	4-6
Social science elective***	3
Humanities:	
Phil 103 Ethics	3
Humanities elective***	3
Literature elective	3
Natural and Applied Sciences:	
Natural and applied sciences electives***	8
Other courses:	
Acct 201, 202 Intro to Financial Accounting & Managerial Accounting	6
BLaw 265 Legal Environment of Business	3
Nonbusiness electives	6-8

* Accounting majors take Math 160 and 161 or Math 170 and 175.
** Students selecting Econ 272 must take one additional UI core course in humanities or social science.
*** To be chosen from courses that will satisfy regulation J-3; accounting majors must select Anth 100, Psyc 101, or Soc 101 under social sciences.

B. *CBE COMMON PROGRAM REQUIREMENTS:*

Course	Credits
Bus 340 Business Systems I	3
Bus 341 Business Systems II	3
Bus 342 Team Building	1
Bus 343 Planning & Decision-Making in Organizations	2
Bus 344 Product/Service & Process Planning	3
Bus 345 Managing the Firm's Resources	4
Bus 346 Business Operating Decisions	4
Bus 490 Strategic Management	3
Upper-division economics electives	3

Note: Students who complete Bus 301, 311, 321, 332, 350, 370, and 380 will be treated as having met the Bus 340-346 CBE Common Program Requirements.

C. *REQUIREMENTS IN MAJOR* (major-specific required credits).

D. *ELECTIVES.* Chosen in consultation with the student's adviser.

Undeclared Status

A student may enter CBE as a freshman in an undeclared status. Because the first two years are equivalent programs in all CBE majors, he or she may remain in the undeclared status until reaching junior level (completion of 58 credits). At that time, a major in the college should be selected. The undeclared status allows a student time to become acquainted with the majors within the college and to solidify career objectives before choosing a major.

College of Education

N. Dale Gentry, Dean (301 Educ. Bldg.; 208/885-6772); Patricia Lineback, Secretary of the College Faculty.

The College of Education was organized as an independent unit of the university in 1920. It is the principal teacher-education unit and consists of the Division of Adult, Counselor, and Technology Education, Division of Health, Physical Education, Recreation and Dance, and the Division of Teacher Education, which includes the Department of Educational Administration and the Department of Special Education. Undergraduate programs leading to degrees in teaching fields are offered in business education, dance (teaching option), elementary education, industrial technology education, marketing education, office occupations education, physical education, school and community health education, secondary education, special education, technology education, and vocational education (teaching option). Programs leading to nonteaching degrees include: dance, industrial technology, office administration, physical education, recreation, and sport science.

The education of professional personnel for the public schools constitutes a service to the state and its people and to the education profession. One of the first duties of the college is that of ensuring that anyone who applies for admission to a program leading to educational service is qualified by preparation and personal attributes for this important work. Once admitted, the student undertakes a program that has as its objective the assurance that the candidate has laid the foundation for a broad, general education, has completed a basic study of the professional functions of the teacher, and has gained substantial competence in the subjects to be taught or in the area in which he or she will serve.

Besides preparing personnel for the schools, the college provides educational leadership for the people of Idaho, to the state's education system, and to the teaching profession through consultation, participation in organizational activities, and research. Preparation is provided in all of the major areas of professional education.

Accreditation and Program Approval

The College of Education is fully accredited by the National Council for the Accreditation of Teacher Education and the National Association of State Directors of Teacher Education and

Certification. The programs of study in education are planned to meet certification requirements in Idaho, those of most other states, and the requirements of the various accrediting agencies, such as the Northwest Association of Schools and Colleges.

Center for Educational Research and Service

The Center for Educational Research and Service was established to conduct research, to facilitate research by College of Education faculty members and graduate students, and to be of assistance to local school districts and to other educational institutions. Research, study, and statistical facilities are made available to students and faculty through the center. The Upward-Bound Program, designed to help youth from low-income families achieve a college education, is housed in the center.

Center personnel have cooperated with local school districts and with the Idaho State Department of Education in such activities as school district surveys, the development and implementation of programs under federal acts, school district reorganization studies, and certification studies. Research reports or monographs on these and other activities are published through the center.

The center is financed in part through cost-reimbursement funds from state and federal sources.

Admission Requirements

Admission to the University. For a statement of general admission requirements, see part 2 of this catalog.

Transfer Students. Students who have attended college, whether at another institution or in another division of the university, before matriculation in the College of Education, must have a grade-point average of 2.00 (C) or better. The approval of the dean of the College of Education is necessary for the admission of transfer students.

Degrees and Programs Offered

Undergraduate. Baccalaureate degrees offered by this college are the Bachelor of Science in Education, Bachelor of Science in Business Education, Bachelor of Science in Office Administration, Bachelor of Science in Physical Education, Bachelor of Science in Recreation, Bachelor of Dance, and Bachelor of Science in Technology. See part 5 for the programs of studies leading to these degrees.

Graduate. The College of Graduate Studies offers work toward advanced degrees in several disciplines of the college. Students must fulfill the requirements of the Graduate College and of the department in which they intend to study. Consult the *Graduate Catalog* for further information.

In the College of Education, graduate programs include advanced degrees and a planned fifth year in teacher education. Upon the completion of the appropriate programs of study, the following degrees are conferred: Master of Science, Master of Education, Specialist in Counseling and Human Services, Specialist in Education, Specialist in Educational Administration, Specialist in School Psychology, Specialist in Special Education, Specialist in Vocational Education, Doctor of Education, and Doctor of Philosophy.

Studies at the master's level are offered in business education, counseling and human services, educational administration, elementary education, industrial technology education, physical education, recreation, secondary education, special education, and vocational education.

Sixth-year specialist degrees are offered in counseling and human services, education, educational administration, school psychology, special education, and vocational education.

Doctoral candidates majoring in education may concentrate in adult education, counseling and human services, education, educational administration, elementary education, higher education, physical education, secondary education, special education, or vocational education.

Teacher Education Programs

At the University of Idaho, the preparation of teachers is a cooperative enterprise between the College of Education and other colleges. Coordination is achieved through the Teacher Education Coordinating Committee, which is made up of representatives from the professional and academic areas involved. The screening of all applicants for admission to Teacher Education Programs is the responsibility of the College of Education, and the dean of the College of Education is the recommending authority for certification.

Students preparing for a career in secondary teaching have the option of completing their bachelor's degrees in the College of Education (except for agricultural education, family life education, and music education) or in the department of their subject major.

Secondary teacher education students have an adviser from the College of Education who is the primary adviser on teacher education requirements, and an adviser from the academic discipline. When a student identifies teacher education as his or her objective (this could be as early as the freshman year and certainly no later than admission to Teacher Education Programs), the education adviser is designated.

Admission to Teacher Education Programs. Upon completion of the first semester of the sophomore year, or 40 semester credits, all students in the College of Education and all students majoring in other colleges who plan to enter Teacher Education Programs must make application for admission to the program. A standing committee of the college reviews and acts on each application. Criteria for admission to Teacher Education Programs include the following: (1) completion of at least 40 semester credits with a 2.50 cumulative GPA including any transfer credits and/or credits earned in a prior degree program; (2) completion of ComG 101 with a grade of "C" or higher; (3) completion of Engl 102 or equivalent transfer English composition course with a grade of "C" or higher; (4) completion of a university core mathematics or statistics courses with a grade of "C" or higher; (5) completion of ED 201 with a grade of "C" or higher and verification of successful completion of field experience; (6) signature of an authorized education faculty adviser; and (7) approval of the College of Education Admission, Petition, and Retention Committee. The approval of the dean of the College of Education is required for admission to Teacher Education Programs. Admission to Teacher Education Programs does not carry with it permission to enroll in the student teaching semester. Additional procedures and conditions apply as noted elsewhere in this section and as noted in the prerequisites to specific courses.

Clinical Experience in Teacher Education

The study of teaching and learning theory is given practical application through laboratory experience in both campus and field settings. Students preparing to become teachers have early involvement with school pupils and experienced teachers through laboratory components for all students in ED 201, Introduction to Teaching, and campus or field laboratory components for special education majors. Additional experience is provided students as they continue professional studies through simulated teaching situations on campus and through field laboratory components for students in methods courses. A culminating clinical teaching experience is provided in student teaching or a graduate internship.

Student Teaching

Admission. For admission to senior practicum courses (AgEd 460, Dan 433, ED 430, 431, EDTE 435, FCS 471, MusT 432, PE 431, EDSP 480, and VoEd 471), the student must have satisfied the following requirements: (1) have been admitted to or continued in Teacher Education Programs; (2) have a grade-point average of at least 2.50; (3) have a grade of C or better in the common core education courses; (4) have a minimum 2.25 GPA in the teaching majors or minors; (5) have satisfied the other prerequisites stated in the description of the particular practicum course for which he or she wishes to register; and (6) have applied for admission to student

teaching by December 1 of the school year before enrolling for the field experience. Consult the director of clinical experiences in teacher education for more specific information.

The Program. Student teaching is carried out in cooperating public schools so that students may obtain experience under typical school conditions. Normally it is scheduled for a semester of full-time teaching in centers designated by the College of Education.

Students should register for ED 445, Proseminar in Teaching, the same semester as their student teaching.

The College of Education does not permit students enrolled in any student teaching course to concurrently function as head coach in any school sponsored sport at any grade level, whether paid or voluntary. Students who desire to function as assistant coaches must have written approval of the division chair and the director of clinical experiences (adopted 1996).

Graduate Practicum and Internship in School Positions

Admission. Admission to practicum and internship courses is conditioned upon acceptance in a graduate program and approval of the major professor and/or student's committee.

The Program. Graduate students are provided clinical experience in the study of teaching and learning and in the performance of other school positions through graduate practica and internships (see courses 597 and 598 in the various subject fields in the college).

Teacher Certification

Students who complete Teacher Education Programs at the university are eligible to receive the Idaho Standard Elementary School Certificate, the Standard Secondary School Certificate, the Exceptional Child Certificate, or the Standard Vocational Certificate. Those who complete an approved, planned fifth-year program in teacher education or an approved master's degree program are eligible to receive the Advanced Elementary School Certificate or the Advanced Secondary School Certificate. Students who complete the professional certificate program in school counseling or school psychology qualify for the Idaho Pupil Personnel Services Certificate. Students completing a master's degree, specialist degree, or doctorate in educational administration may qualify for an administrator's certificate. The College of Education reserves recommendations for initial teacher certification to students who have completed the approved teacher preparation program and hold a bachelor's degree.

Procedures. The student initiates the certification process by obtaining an application for teacher certification from the College of Education. The application is completed and signed by the student's adviser and is then forwarded to the dean of the College of Education who works with the registrar to get the necessary supporting credentials and forwards the materials to the State Department of Education Office of Teacher Certification. The College of Education maintains a record of all students recommended for teacher certification, and it is understood that recommendations concerning a student's competence are made by the department in which the skills and concepts are taught.

Secondary School Teaching Certification for Majors Outside the College of Education

Students admitted to Teacher Education Programs who are enrolled in an academic department other than education normally satisfy the requirements for the Idaho Standard Secondary School Certificate by including the core listed below as electives in their program for the baccalaureate degree and by completing one of the following options: (1) one 60-credit teaching major; (2) one 40-credit teaching major and one 20-credit teaching minor; (3) one 30-credit teaching major and one 20-credit teaching minor; or (4) two 30-credit teaching majors. (See "Teaching Majors and Minors" at the conclusion of the College of Education section.)

Core. Introduction to Teaching, 2 cr (ED 201); Educational Psychology, 2 cr (ED 312); Educational Measurement, 1 cr (ED 313); Strategies for Teaching, 3 cr (ED 314); Special Methods, 3 cr (EDTE 474, 475, 476, 477, 478, 479, or another approved special methods course); Literacy Methods for Content Learning, 3 cr (EDTE 463); Proseminar in Teaching, 3 cr (ED 445); Practicum, 14 cr (ED 431 or another approved practicum course); Historical and Philosophical Foundations of Education, 3 cr (ED 468). Note: Psyc 101, Introduction to Psychology, is the prerequisite to ED 312.

Exceptions. Teacher education students majoring in the College of Education, the Department of Agricultural and Extension Education, the Ritchie School of Family and Consumer Sciences, or the Hampton School of Music have slightly different requirements. See the curricula for these fields in the corresponding appropriate departmental sections.

Application for Certification. See procedures listed under Teacher Certification.

General Requirements for Graduation

University Requirements. See regulation J in part 3 for requirements that all students in the university must meet.

College Requirements. All candidates for a baccalaureate degree in the College of Education must complete 128 semester credits, of which at least 36 must be in upper-division courses. The following course requirements apply to all undergraduate teacher education students in the college (see the major curricula in dance, office administration, recreation, sport science, technology, and vocational education for the special requirements applicable to those programs):

A. *GENERAL STUDIES REQUIREMENTS FOR ELEMENTARY SCHOOL TEACHING (57 credits minimum).* In order to apply toward this requirement, courses must be other than education and be selected from among the humanities, social sciences, and natural sciences. Credits earned in these fields to satisfy the teaching minor may apply if they do not deal primarily with the methodology, procedures, or materials of teaching. Each of the following areas must be represented as indicated:

1. *Communications (8 credits)* (prerequisite basic skills for writing), including essay writing (Engl 102), advanced composition, and speech. The UI core curriculum requires Engl 102 and 2-4 credits from the core list.
2. *Humanities (10 credits),* including 6 credits of literature, 2 credits of art, and 2 credits of music selected from nonmethods courses. Six to eight credits should be selected from the core curriculum humanities list.
3. *Psychology (6 credits),* including introductory psychology (Psyc 101) and developmental psychology (Psyc 305).
4. *Social Science (12 credits),* including one course in American history (Hist 111 or 112), one course in American government (PolS 101), and 6 other credits from social sciences (other than psychology). Three to five credits must be from the UI core curriculum list.

A total of 14 credits must be from the humanities and social science core list categories.

5. *Science (12 credits),* including biological, earth, and physical science courses requiring laboratory work. Select 4 credits each from the areas of (a) life sciences, (b) earth sciences, and (c) physical sciences. At least 8 credits must be from the UI core curriculum list in natural and applied sciences.
6. *Mathematics (9 credits):* Math 235-236, Math for Elementary Teachers I-II, and Math 137 or 140 (refer to prerequisites for Math 235-236).

B. *GENERAL STUDIES REQUIREMENTS FOR SECONDARY SCHOOL TEACHING (34 credit minimum).* In order to apply toward this requirement, courses must be other than education and be selected from among the humanities, social sciences, and natural sciences. Credits earned in these fields to satisfy the teaching major or teaching minor may apply if they do not deal primarily with the methodology, procedures, or materials of teaching. Each of the following areas must be represented as indicated:

1. *Communications (8 credits)* (prerequisite basic skills for writing), including essay writing (Engl 102), advanced composition, and speech. The UI core curriculum requires Engl 102 and 2-4 credits from the core list.
2. *Humanities (6 credits),* including at least 3 credits of literature. The UI core curriculum requires that 6 to 8 credits be selected from the humanities category.
3. *Psychology (3 credits):* Psyc 101, Introduction to Psychology.
4. *Social Science (6 credits),* including at least one course in American history (Hist 111 or 112) or American government (PolS 101). Three credits must be selected from the UI core list in this category (other than psychology).

The UI core curriculum requires 14 credits in the combined categories of humanities and social sciences. The core social science list includes Psyc 101.

5. *Science-Mathematics (11 credits),* including biological, earth, or physical science courses requiring laboratory work. The UI core curriculum requires 8 credits from natural and applied sciences and 3 credits of mathematics/statistics/computer science.

C. UNIFORM REQUIREMENTS FOR ELEMENTARY AND SECONDARY TEACHING (29-35 CREDITS):

ED 201 Introduction to Teaching 2
ED 312 Educational Psychology 2
ED 313 Educational Measurement 1
ED 314 Strategies for Teaching 3
ED 328 Introduction to Educational Technology 2
ED 430 or 431 or EDSP 480 Practicum 14
ED 445 Proseminar in Teaching 3
ED 468 Historical & Philosophical Foundations of Education 3

Note: Secondary education majors must take EDTE 463, Literacy Methods for Content Learning, and the special methods course appropriate to their discipline.

Major Curricula

Students in the College of Education must complete a major curriculum that leads to a degree granted by the college (B.Dan., B.S.Ed., B.S.Bus.Ed., B.S.P.E., B.S.Rec., B.S.Tech., or B.S.O.Ad.). These major curricula (with the degree goal identified) are listed in part 5.

Careful distinction should be made between a student's "major curriculum" and any additional "teaching majors" or "teaching minors" leading to certification.

Teaching Majors and Minors in the College of Education

Students seeking certification or a degree in secondary education must complete the options for teaching majors and minor as noted.

The various teaching majors and teaching minors required to accompany several of the curricula are outlined below. Because the College of Education reserves the right to approve or disapprove the content of all proposed majors and minors, students should confer closely with their college advisers and with advisers in the academic department concerned in the selection of these courses.

AGRICULTURAL EDUCATION

The major in agricultural education is offered only in the major curriculum leading to the degree of B.S.Ag.Ed. (see below). A teaching major in agricultural education is not offered.

AMERICAN STUDIES

There is no teaching endorsement in American studies in the state of Idaho. However, students earning a degree in American studies through the College of Letters and Science are able to work toward endorsements in English, history, or social science depending on which emphasis they choose in the American studies curriculum and by choosing their electives carefully. Students seeking endorsement in English will take EDTE 475 as their special methods course, and students seeking endorsement in history or social studies will take EDTE 476 as their special methods course. American studies students seeking endorsement should read the appropriate section under the English heading, the history heading, or the social science heading in this part of the catalog.

ART

A. 42-CREDIT ART TEACHING MAJOR

Art 100 Visual Art 3
Art 111-112 Drawing I-II 6
Art 121-122 Visual Communication & the Design Process 6
Art 211 Drawing III 3
Art 241 Sculpture I 3
Art 301 History of Art: 19th Century 3
Art 302 History of Art: 20th Century 3
Courses selected from the following 12
  Art 214 Textile Design I
  Art 221 Graphic Design I
  Art 231 Painting I
  Art 251 Printmaking I
  Art 261 Ceramics I
  Art 281 Watercolor I
  Comm 281 Understanding Photography
One art studio course (Art 311, 321, 331, 341, 351, or 361) 3

B. 22-CREDIT ART TEACHING MINOR

Art 100 Visual Art 3
Art 111-112 Drawing I-II 6
Art 121-122 Visual Communication & the Design Process 6
Courses selected from Art 211, 214, 221, 231, 241, 251, 261, 281, Comm 281, or Art 311, 321, 331, 341, 351, 361 7

BIOLOGICAL SCIENCES

Note: Organic chemistry is a prerequisite to required botany and zoology courses; Math 143 is a prerequisite to required physics courses. A grade of "D" in any of the required courses listed below will not count toward completion of the degree in either the 60-credit composite teaching major or the 25- or 26-credit composite teaching minor.

A. 60-CREDIT COMPOSITE TEACHING MAJOR

Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3
Bot 241 Systematic Botany 3
Bot 311 Plant Physiology 4
Bot 425 Developmental Plant Anatomy 3
Geog 100 Physical Geog or Geol 101 Physical Geol 4
MMBB 250 General Microbiology 5
Phys 111-112 General Physics I-II 8
Zool 324 Comparative Vertebrate Anatomy or 472, 473 Developmental Biology & Lab 4
Zool 423 Comparative Vertebrate Physiology 4
Approved electives from bacteriology, biology, botany, entomology, or zoology 4

B. 25- OR 26-CREDIT COMPOSITE TEACHING MINOR

Note: One course in college chemistry is a prerequisite to Biol 201; organic chemistry is a prerequisite to Bot 311 and Zool 423.

Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3
Bot 241 Systematic Botany or 311 Plant Physiology or 425 Developmental Plant Anatomy 3-4
Zool 324 Comparative Vertebrate Anatomy or 423 Comparative Vertebrate Physiology 4

BUSINESS EDUCATION

The major in business education is offered only in the major curriculum leading to the degree of B.S.Bus.Ed.

22- OR 23-CREDIT BOOKKEEPING TEACHING MINOR

BuEd 102 Typewriting II 2
BuEd 491 Teaching Business Education I 2-3
Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
Bus 101 Introduction to Business Enterprises 3
BLaw 265 Legal Environment of Business 3
Econ 201, 202 Principles of Economics 6

CHEMISTRY

Note: See the physics and mathematics prerequisites for the chemistry courses listed below.

A. 42- OR 43-CREDIT CHEMISTRY TEACHING MAJOR

Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 275, 276 Carbon Compounds & Lab and MMBB 380, 382 Intro Biochem & Lab or Chem 277, 278 Organic Chem I & Lab and Chem 372, 376 Organic Chem II & Lab 8-9
Chem 302, 303 Principles of Physical Chemistry & Lab 4
Biol 201 Introduction to the Life Sciences 4
Math 170 Analytic Geometry & Calculus I 4
Phys 111-112 General Physics I-II 8

B. 20-CREDIT CHEMISTRY TEACHING MINOR

Chem 111 Prin of Chemistry I or 101 Intro to Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 275, 276 Carbon Compounds & Lab 4
Chem 302, 303 Principles of Physical Chemistry & Lab 4
MMBB 380 Introductory Biochemistry 3

COMPUTER SCIENCE

Computer science is not an area of endorsement for Idaho certification. Students may complete a secondary minor in computer science only under the 30-20-20 option where the 30 credit major and one of the 20 credit minors are in endorsement areas.

20-CREDIT COMPUTER SCIENCE TEACHING MINOR

CS 112 Introduction to Problem Solving & Programming 3
CS 113 Program Design & Algorithms 3
CS 213 Data Structures 3
CS 241 Computer Organization 3
Math 176 Discrete Mathematics 3
Electives chosen from the following 5
- CS 307 History of Calculating & Computing
- CS 310 Computing Languages
- CS 324 Computer Graphics
- CS 381 Software Engineering
- Math 475/CS 495 Analysis of Algorithms
- Math 485/CS 490 Theory of Computation

CONSUMER ECONOMICS

A teaching major in consumer economics is not offered. Students selecting a minor in consumer economics must have a major in social science, family and consumer sciences, business education, or marketing education to meet both college graduation requirements and state certification requirements.

20-CREDIT CONSUMER ECONOMICS TEACHING MINOR

BLaw 265 Legal Environment of Business 3
BuEd 418 Teaching Consumer Economics 2
Econ 201, 202 Principles of Economics 6
FCS 448 Consumer Education 3
Electives chosen from the following 6
- Acct 201 Introduction to Financial Accounting
- Bus 321 Marketing
- Bus 364 Insurance
- Econ 343 Money & Banking
- FCS 123 Textiles
- FCS 346 Personal & Family Finance & Management
- FCS 428 Family Housing

COUNSELING AND HUMAN SERVICES

An undergraduate major is not offered in counseling and human services. Students who wish to qualify for counseling and human services may qualify as teachers in any subject area and enroll in counseling programs later in graduate school. Those definitely planning to become counselors should seek advice from the counseling faculty. Those who do not wish to qualify as teachers may arrange for a special one-semester counseling internship in addition to the graduate program in counseling and human services.

DANCE

The major in dance is offered only in the major curriculum leading to the degree of B.Dan.

21-CREDIT DANCE TEACHING MINOR

The dance minor provides broad experiences in techniques, composition, production, and teaching.

Dan 105 Dance (ballet, jazz, modern) 4
Dan 112 Recreational Dance Forms 2
Dan 210 Dance Theatre 1
Dan 321 Dance Pedagogy 3
Dan 325 Dance Production 3
Dan 383 Dance Composition 2
Dan 420 Dance Accompaniment or Dan 320 Labanotation 3
Dan 421 Dance History 3

EARTH SCIENCE

Due to extensive course overlap, earth science majors may NOT select geology as a teaching minor.

A. 61-CREDIT EARTH SCIENCE TEACHING MAJOR

Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology or Biol 203 General Botany 4
Chem 111 Principles of Chemistry I 4
Geog 100 Physical Geography 4
Geog 401 Atmospheric Environment 3
Geol 101 Physical Geol or Geol 111 Physical Geol for Sc Majors 4
Geol 102 Historical Geology 4
Geol 212 Principles of Paleontology 4
Geol 260 Survey of Minerals 2
Geol 335 Geomorphology 3
Geol 405 Earth Sciences 4
Geol 408 Field Methods in the Earth Sciences 3
Geol 425 Sedimentology 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
Phys 103, 104 General Astronomy & Lab 4
Phys 111-112 General Physics I-II 8

B. 40-CREDIT COMPOSITE TEACHING MAJOR

Geog 100 Physical Geography 4
Geog 401 Climatology 3
Geol 101 Physical Geol or Geol 111 Physical Geol for Sc Majors 4
Geol 102 Historical Geology 4
Geol 212 Principles of Paleontology 4
Geol 260 Survey of Minerals 2
Geol 335 Geomorphology 3
Geol 405 Earth Sciences 3
Geol 408 Field Methods in the Earth Sciences 3
Phys 103, 104 General Astronomy & Lab 4
Courses selected from the following 6
- Geog 180 Spatial Graphics
- Geog 380 Cartography & Graphic Communication
- Geol 261 Survey of Rocks
- Geol 360 Geologic Hazards
- Geol 361 Geology & the Environment

ECONOMICS

A teaching major in economics is not offered.

20-CREDIT ECONOMICS TEACHING MINOR

Econ 201, 202 Principles of Economics 6
Econ 351 Intermediate Macroeconomic Analysis 3
Econ 352 Intermediate Microeconomic Analysis 3
Additional upper-division credits in economics 8

EDUCATIONAL ADMINISTRATION

No undergraduate major or minor is offered in educational administration. Students who are planning to go into this field must first obtain a bachelor's degree, complete requirements for teacher certification, and have teaching experience, then enter the College of Graduate Studies to pursue a program leading to an advanced degree in educational administration.

ENGLISH

A. 42-CREDIT ENGLISH TEACHING MAJOR

Engl 257 or 258 Literature of Western Civilization 3
Engl 210 Reading - Writing - Texts 3
Engl 309 Advanced Prose Writing 3
Engl 341-342 Survey of British Literature 6
Engl 343-344 Survey of American Literature 6
Engl 345 Shakespeare 3
Engl 401 Writing Workshop for Teachers 3
Engl 441 Introduction to Study of Language 3
Engl 442 or 443 or 496 Linguistics 3
Engl 445 Literature for Adolescents 3
One 400-level area literature course 3
One literature course focusing on multicultural literature (Engl 480, 483, 484; or 295, 404, 481, or 482 when those courses include a major and specific selection of ethnic literature) 3

B. 33-CREDIT ENGLISH TEACHING MAJOR

Engl 210 Reading - Writing - Texts 3
Engl 309 Advanced Prose Writing 3
Engl 341-342 Survey of British Literature 6
Engl 343-344 Survey of American Literature 6
Engl 401 Writing Workshop for Teachers 3
Engl 441 Introduction to Study of Language 3
Engl 442 or 443 or 496 Linguistics 3
Engl 445 Literature for Adolescents 3
One literature course focusing on multicultural literature (Engl 480, 483, 484; or 295, 404, 481, or 482 when those courses include a major and specific selection of ethnic literature) 3

C. 24-CREDIT ENGLISH TEACHING MINOR

Engl 210 Reading - Writing - Texts 3
Engl 309 Advanced Prose Writing 3

Engl 341 Survey of British Literature 3
Engl 343 Survey of American Literature 3
Engl 342 or 344 British or American Literature 3
Engl 401 Writing Workshop for Teachers 3
Engl 441 Introduction to Study of Language 3
Engl 445 Literature for Adolescents 3

D. 33-CREDIT ENGLISH TEACHING MAJOR THROUGH AMERICAN STUDIES

Students complete the College of Letters and Science major in American studies with the following specifications:

Courses from the American Studies requirements
- Engl 343-344 Survey of American Literature 6
- Engl 341 or 342—one of the two required courses in English (British) literature 3
- Electives in American English, selected from the list of electives in the curricular requirements of the lit emphasis in the American Studies degree (incl Engl 441 and 3 cr of a literature course with multicultural emphasis) 12

Courses in addition to those required for the literature emphasis of the American Studies degree:
- Engl 210 Reading - Writing - Texts 3
- Engl 309 Advanced Prose Writing 3
- Engl 401 Writing Workshop for Teachers 3
- Engl 445 Literature for Adolescents 3

ENGLISH AS A SECOND LANGUAGE

A teaching major in English as a second language is not offered.

21-CREDIT ENGLISH AS A SECOND LANGUAGE TEACHING MINOR

Engl 404 Special Topics: ESL Methods 3
Engl 441 Introduction to the Study of Language 3
Engl 442 Introduction to English Syntax 3
Anth/Soc 322 Racial & Ethnic Relations 3
Electives, of which at least two courses are in English language and linguistics (Anth 220 may be used for the third course) 9

FAMILY LIFE EDUCATION

An option in family life education is offered only in the major curriculum leading to the degree of B.S.F.C.S.

FRENCH

Basic language courses taken in high school or elsewhere may be evaluated for college equivalencies as part of this teaching major and minor. Consult the Department of Foreign Languages and Literatures for policies on advanced placement.

A. 42-CREDIT FRENCH TEACHING MAJOR

Fren 101-102 Elementary French I-II 8
Fren 201-202 Intermediate French I-II 8
Fren 301 Advanced French Grammar 3
Fren 302 Advanced French Writing Skills 3
Fren 303 French Civilization: Institutions 3
Fren 304 French Culture 3
Fren 305 Survey of French Fiction & Drama 3
Fren 306 Survey of French Essay & Poetry 3
Fren 449 Practicum in Tutoring 1-2
Electives chosen from the following 7-10
- Engl 441 Introduction to Study of Language
- FLEN 243 English Word Origins
- Approved upper-division course in literature
- Approved upper-division French electives

B. 22-CREDIT FRENCH TEACHING MINOR

Fren 101-102 Elementary French 8
Fren 201-202 Intermediate French 8
Approved upper-div French electives (either Fren 301 or 302 is reqd; lab-based and lit in translation courses are not acceptable) 6

Note: A minor in French of less than 22 credits is not acceptable.

GEOGRAPHY

A. 30-CREDIT GEOGRAPHY TEACHING MAJOR

Geog 100 Physical Geography 4
Geog 165 Human Geography 3
Geog 180 Spatial Graphics 3
Geog 200 World Regional Geography 3
Geog 330 Urban Geog or 240 Econ Geog or 346 Transportation 3
Geog 364 Idaho & Pacific Northwest 3
Geog 385 GIS Primer 3
Geog 401 Climatology or 360 Population Dynamics & Distribution or 427 Decision Making in Resource Management 3
Geog 470 Computer Mapping 3
Additional geography courses to total 30 credits ..... —

B. 22-CREDIT GEOGRAPHY TEACHING MINOR

Geog 100 Physical Geography 4
Geog 165 Human Geography 3
Geog 180 Spatial Graphics 3
Geog 200 World Regional Geography 3
Geog 240 Economic Geography 3
Geog 401 Climatology or 360 Population Dynamics & Distribution or 427 Decision Making in Resource Management 3
Geog 470 Computer Mapping 3

GEOLOGY

A teaching major in geology is not offered.

20-CREDIT GEOLOGY TEACHING MINOR

Geol 101 Physical Geology 4
Geol 102 Historical Geology 4
Geol 212 Principles of Paleontology 4
Geol 260 Survey of Minerals 2
Geol 261 Survey of Rocks 2
Electives chosen from the following 4
- Geol 301 Field Geology & Report Writing
- Geol 335 Geomorphology
- Geol 345 Structural Geology

GERMAN

Basic language courses taken in high school or elsewhere may be evaluated for college equivalences as part of this teaching major and minor. Consult the Department of Foreign Languages and Literatures for policies on advanced placement.

A. 40-CREDIT GERMAN TEACHING MAJOR

Germ 101-102 Elementary German I-II 8
Germ 201-202 Intermediate German I-II 8
Germ 321 German Conversation 3
Germ 322 German Grammar & Composition 3
Germ 325-326 German Culture & Institutions 6
Germ 327-328 Survey of German Literature 3-6
Germ 420 Readings in German Literature 3
Engl 441 Introduction to Study of Language 3
Approved upper-division German electives 0-3

B. 22-CREDIT GERMAN TEACHING MINOR

Germ 121-122 Elementary German 8
Germ 221-222 Intermediate German 8
Approved upper-div German electives (either Germ 321 or 322 is reqd; lab-based and lit in translation courses are not acceptable) 6

Note: A minor in German of less than 22 credits is not acceptable.

HEALTH EDUCATION

A major in school and community health education is offered (see HPERD section for major requirements). Students minoring in health education who plan to apply for teacher certification must include a course in anatomy and physiology or general biology. A current advanced first aid and emergency care card is required upon graduation.

22- OR 23-CREDIT HEALTH EDUCATION TEACHING MINOR

Students minoring in health education who plan to apply for teacher certification must include a course in anatomy and physiology or general biology among the courses they select to meet the general studies requirements.

H&S 150 Wellness Lifestyles 3
H&S 289 Drugs in Society 2
H&S 316 School & Community Health Services 2
H&S 323 Health Education Methods & Administration 3
H&S 350 Stress Management & Mental Health 2
H&S 355 Accident Control, Prevention, & Human Ecology or H&S 450 Contemporary Issues in Health 2
H&S 436 Health & Wellness Promotion 3
FCS 205 Concepts in Human Nutrition or FCS 305 Nutrition Related to Fitness & Sport 2-3
FCS 240 Intimate Relationships or Psyc 330 Human Sexuality 3

HISTORY

A. 33-CREDIT HISTORY TEACHING MAJOR

Hist 101-102 History of Civilization 6
Hist 111-112 Introduction to U.S. History 6
Hist 290 The Historian's Craft 3
American government 3
Additional history courses (incl 3 cr of non-regional U.S. history) 15

Note: In selecting upper-division history courses, balance courses in the history of the Americas with courses in European and Asian history. Students who also have a teaching minor in English should take the history of England survey as part of the teaching major.

B. HISTORY TEACHING MINORS

The teaching minor in history includes one course in American government and a minimum of 20 credits in history. Follow the history teaching major (above) in selecting courses. Students must take 9 credits of U.S. history. Students who also have a teaching major in English should take the History of England courses as part of the history teaching minor.

C. 33-CREDIT HISTORY TEACHING MAJOR THROUGH AMERICAN STUDIES

American studies majors must take 9 credits in European or Asian history to maintain the required balance of old and new world history, plus 3 credits in American government.

INDUSTRIAL TECHNOLOGY EDUCATION

The major in technology education is offered only under the major curriculum leading to the degree of B.S.Ed.

23-CREDIT INDUSTRIAL TECHNOLOGY EDUCATION TEACHING MINOR

For certification to teach industrial technology education, a teaching minor must contain at least 20 credits, including not less than 15 credits distributed among and including each of the areas of metals, wood, drafting, and electricity-electronics. The remainder may be in allied or related areas. No substitution will be permitted for any of the courses required below.

ITED 120 Principles of Technology I 3
ITED 130 Basic Electronics I 3
ITED 218 Power, Energy, & Transportation 3
ITED 250 Introduction to Metals Manufacturing 3
ITED 265 Computer Aided Drafting/Design 2
ITED 280 Building Construction Technology 3
ITED 328 Computer Operating Systems for Technology 3
ITED 360 Graphic Communication 3

JOURNALISM

A. 34-CREDIT JOURNALISM TEACHING MAJOR

ComG 111 Introduction to Communication Studies 4
Comm 121 Media Writing 3
Comm 222 Reporting 3
Comm 275 Introduction to Video Production 3
Comm 281 Understanding Photography 3
Comm 424 News Editing 3
Five courses chosen from the following 15
- Comm 265 Advertising & Society
- Comm 270 Broadcast Commercial Writing/Production
- Comm 278 Intro to Radio/TV Production
- Comm 323 Public Affairs Reporting
- Comm 354 Publications Editing
- Comm 374 Broadcasting Newswriting/Reporting
- Comm 425 Feature Article Writing
- Comm 441 Ethics in Mass Communication
- Comm 444 Communication & Public Opinion
- Comm 445 History of Mass Communication
- Comm 448 Law of Mass Communication

B. 22-CREDIT JOURNALISM TEACHING MINOR

ComG 111 Introduction to Communication Studies 4
Comm 121 Media Writing 3
Comm 222 Reporting 3
Comm 275 Introduction to Video Production 3
Three courses chosen from the following 9
- Comm 270 Broadcast Commercial Writing/Production
- Comm 281 Understanding Photography
- Comm 323 Public Affairs Reporting
- Comm 354 Publications Editing
- Comm 425 Feature Article Writing
- Comm 441 Ethics in Mass Communication
- Comm 444 Communication & Public Opinion
- Comm 445 History of Mass Communication
- Comm 448 Law of Mass Communication

LATIN

Basic language courses taken in high school or elsewhere may be evaluated for college equivalencies as part of this teaching major or minor. Consult the Department of Foreign Languages and Literatures for policies on advanced placement.

A. 40-CREDIT LATIN TEACHING MAJOR

FLEN 211-212 Classical Mythology 4
FLEN 243 English Word Origins 2
FLEN 364 Literature of Rome 3

Latn 101-102 Elementary Latin I-II or 261-262 Intensive Latin 8
Latn 369 Advanced Latin Lab 1-3
A methods course approved by adviser and classics section
or Latn 449 Practicum in Tutoring 2
Upper-division Latin literature courses (minimum) 9
Electives chosen from the following 9-11
- Engl 441 Introduction to Study of Language
- FLEN 363 Literature of Ancient Greece
- FLEN 441 Ancient Greek Civilization
- FLEN 442 Civilization of Ancient Rome
- Grek 341, 342 Elementary Greek
- Hist 442 The Medieval Church
- Hist 443 The Medieval State
- Additional upper-div Latin courses (especially recommended)

B. 20-CREDIT LATIN TEACHING MINOR

Latn 101-102 Elementary Latin or 261-262 Intensive Latin 8
Latn 369 Advanced Latin Lab (minimum) 1
FLEN 243 English Word Origins 2
FLEN 364 Literature of Rome 3
Upper-division Latin literature courses 6

Note: A minor in Latin of less than 20 credits is not acceptable.

LIBRARY SCIENCE

A teaching major in library science is not offered.

24-CREDIT LIBRARY SCIENCE TEACHING MINOR

The teaching minor in library science must total 24 credits. At least 12 of these must be in the areas of selection, organization, and administration of library materials. This teaching minor will qualify the student for the Idaho K-12 Education Media Generalist endorsement. Because library science is not a teaching field, the teacher-librarian must also qualify for a standard Idaho elementary or secondary teacher's certificate.

Note: Departmental approval and approval of site are required for the practicum; it is approved after the majority of the required course work has been completed.

LibS C420 Classification & Cataloging 4
LibS C421 Acquisitions & Collection Development in Libraries 3
LibS C422 Use of School Library and/or C423 Intro to Reference Work 2-5
LibS C425 Organization & Management of Small Libraries 4
LibS C427 Library & Media Center Practicum 1-3
Audiovisual aids and computer electives (minimum) 2
Note: The above selections must total 18 credits
Courses selected from the following 0-6
- EDTE 338 Children's Literature (3 cr)
- Engl 445 Literature for Adolescents (3 cr)
- Communication/graphic arts (6 cr)

MARKETING EDUCATION

The major in marketing education is offered only in the major curriculum leading to the degree of B.S.Ed. A teaching minor in marketing education is not offered.

MATHEMATICS

Note: Students who plan to apply for teacher certification with a mathematics teaching major must take EDTE 418 and 478.

Math 143 and 144 may be necessary prerequisites for students with weak backgrounds.

A. 41-CREDIT MATHEMATICS TEACHING MAJOR

Math 176 Discrete Mathematics 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 215 Seminar in Topology of the Plane 3
Math 286 Theory of Numbers 3
Math 330 Linear Algebra 3
Math 390 Geometry 3
Math 461 Abstract Algebra 3
CS 112 Introduction to Problem Solving & Programming 3
Stat 251 Principles of Statistics or Stat 301 Probability & Statistics
or Math 451 Probability Theory & Mathematical Statistics 3
Two of the following courses (one must be above 400) 6
- Math 326 Linear Programming
- Math 346 Applied Combinatorics
- Math 376 Discrete Mathematics II
- Math 411 Elementary Topology
- Math 420 Complex Variables
- Math 462 Abstract Algebra
- Math 471 Advanced Calculus
- Math 472 Advanced Calculus
- Math 490 Introduction to Set Theory

B. 32-CREDIT MATHEMATICS TEACHING MAJOR

Math 176 Discrete Mathematics 3
Math 170, 175 Analytic Geometry & Calculus 8
Math 215 Seminar in Topology of the Plane 3
Math 286 Theory of Numbers 3
Math 330 Linear Algebra 3
Math 390 Geometry 3
Math 461 Abstract Algebra 3
CS 112 Introduction to Problem Solving & Programming 3
Stat 251 Principles of Statistics or Stat 301 Probability & Statistics
or Math 451 Probability Theory & Mathematical Statistics 3

C. 20-CREDIT MATHEMATICS TEACHING MINOR

Math 176 Discrete Mathematics 3
Math 170, 175 Analytic Geometry & Calculus 8
Math 286 Theory of Numbers or 215 Seminar in Topology of the Plane 3
Math 390 Geometry 3
Stat 251 Principles of Statistics or Stat 301 Probability & Statistics
or Math 451 Probability Theory & Mathematical Statistics 3

Note: Students who plan to apply for teacher certification with a mathematics teaching minor must take EDTE 478 (EDTE 418 is highly recommended).

MUSIC EDUCATION

Majors in music education are offered only in the major curricula leading to the degree of B.Mus.

29-CREDIT VOCAL MUSIC TEACHING MINOR

MusA 147-148 Voice Class (qualified students may substitute
MusA 114 Individual Instruction: Voice) 2
MusA 145-146, 245-246 Piano Class 4
MusA 151 Guitar Class 1

MusA 387 Conducting I 2
MusC 139-140 Aural Skills I-II 4
MusC 141-142 Theory of Music I-II 4
MusH 101 Survey of Music (students may substitute MusH 111, 2 cr) 3
MusT 385 Choral Music in the Secondary School 2
MusT 389 Orff & Kodaly 2
MusT 485 Choral Ensemble Rehearsal Techniques 1
MusX 140 Convocation (two semesters) 0
Vocal ensembles 4

OFFICE OCCUPATIONS EDUCATION

The major in office occupations education is offered only in the major curriculum leading to the degree of B.S.Bus.Ed.

20-CREDIT OFFICE OCCUPATIONS EDUCATION TEACHING MINOR

BuEd J210/J410 Alphabetic Shorthand I 2
BuEd 102 Typewriting II 2
BuEd 185 Machine Calculation 2
BuEd 395 Administrative Office Procedures 3
BuEd 415 Microcomputer Applications 3
BuEd 419 Word Processing 3
BuEd 492 Teaching Business Education II 2
Engl 313 Business Writing 3

OFFICER EDUCATION

20-CREDIT OFFICER EDUCATION TEACHING MINOR

This teaching minor consists of 20 cr in approved courses from aerospace studies, military science, or naval science.

PHYSICAL EDUCATION

Also see dance and health education.

The major in physical education is offered only under the major curriculum leading to the degree of B.S.Ed. (see HPERD section for major requirements).

31-CREDIT SECONDARY PHYSICAL EDUCATION TEACHING MINOR

Students who plan to apply for teacher certification must take first aid and anatomy and physiology. These requirements may be met by taking H&S 288 and Zool 119.

PE Skill & Analysis courses 4
PE 201 Fitness Activities & Concepts 2
PE 260 Motor Development & Control 3
PE 300 Human Kinesiology or 418 Physiology of Exercise 2-3
PE 305 Applied Sports Psychology or 310 Cultural & Philosophical Aspects of Sport 2-3
PE 320 Methods & Materials in Physical Education 3
PE 321 Physical Education Teaching Lab 1
PE 380, 381 Measurement & Evaluation I & II 3
PE 424 Physical Education for Special Populations 3
PE 440 Physical Education & Sport Management 3
Dan 112 Recreational Dance Forms or PE 202 Skill & Analysis: Tumbling & Gymnastics 2
H&S 150 Wellness Lifestyles 3

PHYSICAL SCIENCES

40-CREDIT COMPOSITE TEACHING MAJOR

This is a 40-credit composite teaching major consisting of courses in chemistry, geology, and physics. A teaching minor in mathematics is recommended to accompany this teaching major.

Biol 100 Intro to Biology or Biol 201 Intro to the Life Sciences or Geog 100 Physical Geog or Geog 401 Climatology 3-4
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 275 Carbon Compounds 3
Geol 101 Physical Geology 4
Phys 103 General Astronomy 3
Phys 211, 212, 213 Engineering Physics I, II, III 12
Phys 411 Physical Instrumentation I 3
Additional courses in chemistry, geology, or physics to complete distribution required above ..... —

Recommended electives:
Chem 302 Principles of Physical Chemistry
MMBB 380 Introductory Biochemistry

PHYSICAL SCIENCE-LIFE SCIENCE

63-CREDIT COMPOSITE TEACHING MAJOR

Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Phys 211, 212, 213 Engineering Physics I, II, III 12
Phys 411 Physical Instrumentation I 3
Zool 120 Human Anatomy 4
Zool 121 Human Physiology 4
Courses in biology, chemistry, or physics 8
Electives chosen from the following 11
Biol 331 General Ecology
Geog 100 Physical Geography
Geog 401 Climatology
Intr 394 Technology & Societal Decisions
Intr 490 Technology & Human Values
MMBB 250 General Microbiology
Phys 103 General Astronomy

PHYSICS

A. 40-CREDIT PHYSICS TEACHING MAJOR

Phys 103 General Astronomy 3
Phys 211, 212, 213 Engineering Physics I, II, III 12
Phys 360 Introduction to Modern Physics 3
Phys 411 Physical Instrumentation I 3
Biol 201 Introduction to the Life Sciences 4
Chem 101 Intro to Chemistry I or 111 Prin of Chemistry I 4
Math 170, 175, 275 Analytic Geometry & Calculus 11

B. 20-CREDIT PHYSICS TEACHING MINOR

Phys 211, 212, 213 Engineering Physics I, II, III 12
Phys 360 Introduction to Modern Physics 3
Electives in physics (approved by adviser in Dept of Physics), including at least 2 credits of lab work 5

POLITICAL SCIENCE

A. 30-CREDIT POLITICAL SCIENCE TEACHING MAJOR

The distribution of credits among the five fields below must be as follows: (1) 12-15 credits in U.S. government and political process, including PolS 101, Introduction to Political Science and American Government, and (2) 15-18 credits in the other four fields, including at least 3 credits in each field. Courses listed in more than one field may be counted in only one of those fields. Substitutions in specific courses may be made with the consent of the adviser. All 30 credits must be in political science courses; however, note that 6 additional credits in history are also required for certification in this field.

U.S. Government: Process and Policy
PolS 101, Introduction to Political Science & American Government
And 9-12 cr from the following: PolS 275, 431, 432, 433, 437, 439, 460, 464, 465, 469

Comparative Government and Politics
At least 3 credits from the following:
PolS 380, 381, 382, 480, 482, 483, 484, 485, 487

International Relations
At least 3 credits from the following:
PolS 237, 438, 440, 449

Public Administration and Public Law
At least 3 credits from the following:
PolS 451, 452, 454, 460, 467, 468, 469

Political Thought
At least 3 credits from the following:
PolS 425, 426, 428, 429

B. TEACHING MINOR IN POLITICAL SCIENCE

The teaching minor in political science is a minimum of 20 credits. Six additional credits of U.S. history are also required for certification in this field.

PolS 101 Introduction to Political Science & American Government 3
Three additional credits in U.S. govt (see the list of courses in U.S. Govt: Process and Policy under teaching major above) 3
Three credits in comparative govt (see the list of courses in Comparative Govt and Politics under teaching major above) 3
Other political science courses selected from those listed in the teaching major 11

PSYCHOLOGY

A. 30-CREDIT PSYCHOLOGY TEACHING MAJOR

The basic objective of this teaching major is to provide the undergraduate student with preparation that leads to teaching psychology in secondary schools, and/or to undertake graduate work in several related areas. Though psychology is an endorsement area, it is desirable to present two teaching minors in standard secondary-school subjects. At least a teaching minor in sociology/anthropology is recommended for those anticipating graduate work in guidance and counseling and school psychology. A second teaching major in lieu of two teaching minors is acceptable preparation. The composite teaching majors (e.g., social science or physical science), if elected as a second teaching major, should meet the stipulated credit requirement.

Psyc 101 Introduction to Psychology 3
Psyc 218 Introduction to Research in Behavioral Sciences 4
Psyc 305 Developmental Psychology 3
Psyc 310 Psych of Personality or 456 Psych of Emotion 3
Psyc 311 Abnormal Psychology 3
Psyc 320 Introduction to Social Psychology 3

Psyc 372 Physiological Psychology or 444 Sensation & Perception 3
Psyc 390 Psychology of Learning or 325 Cognitive Psychology 3
Stat 251 Principles of Statistics 3
Approved upper-division psychology elective 2

B. 20-CREDIT PSYCHOLOGY TEACHING MINOR

Psyc 101 Introduction to Psychology 3
Psyc 218 Introduction to Research in Behavioral Sciences 4
Psyc 305 Developmental Psychology 3
Psyc 390 Psychology of Learning 3
Stat 251 Principles of Statistics 3
Approved psychology electives 4

SOCIAL SCIENCE

A. 45-CREDIT COMPOSITE TEACHING MAJOR

Note: Due to extensive course overlap, social science majors may NOT select history as a second major or as a minor.

This 45-credit composite teaching major requires a minimum of 15 approved credits in history and at least 6 approved credits each in economics, geography, political science, and sociology or anthropology (all 6 credits in either sociology or anthropology). The remaining 6 credits are to be distributed among any two of these areas (excluding history and treating sociology and anthropology as one area). Required and other approved courses include:

History—Hist 101, 102, 111, 112, and one or more courses in modern U.S. or European history.

Economics—Econ 201 and 202; then 345 or 390 (if additional 3 credits are elected from this area).

Geography—Geog 165, 200, 330 (choose two or more).

Political Science—PolS 101 and choose one or more from 275, 381, 382.

Sociology—Soc 101 and any other sociology course (excluding courses on social welfare and services).

Anthropology—Anth 100 and any other anthropology course.

B. 45- OR 60-CREDIT TEACHING MAJOR THROUGH AMERICAN STUDIES

American studies majors add Hist 101, 102, 111, 112, and one or more courses in modern U.S. or European history. Also follow the credit distributions and recommended courses as stated above for economics, geography, political science, and sociology or anthropology.

SOCIOLOGY/ANTHROPOLOGY

A teaching major in sociology/anthropology is not offered.

20-CREDIT SOCIOLOGY/ANTHROPOLOGY TEACHING MINOR

Anth 100 Introduction to Anthropology 3
Anth 220 Peoples of the World or 329 North American Indians 3
Soc 101 Introduction to Sociology 3
Soc 230 Social Problems 3
Approved electives in anthropology and sociology 8

SPANISH

Basic language courses taken in high school or elsewhere may be evaluated for college equivalencies as part of this teaching major and minor. Consult the Department of Foreign Languages and Literatures for policies on advanced placement.

A. 40-CREDIT SPANISH TEACHING MAJOR

Span 101-102 Elementary Spanish I-II 8
Span 201-202 Intermediate Spanish I-II 8
Span 381-382 Advanced Spanish Grammar & Composition 6
Span 383-384 Hispanic Culture & Institutions 6
Span 384-385 Survey of Spanish Literature 6
Span 388 Survey of Spanish-American Literature 3
Upper-division courses in Spanish language 3

A maximum of 3 credits in FLEN 391, 393, or 394 may be counted toward a teaching major in Spanish.

B. 22-CREDIT SPANISH TEACHING MINOR

Span 101-102 Elementary Spanish I-II 8
Span 201-202 Intermediate Spanish I-II 8
Approved upper-div Spanish electives (either Span 381 or 382 reqd; lab-based and lit in translation courses are not acceptable) 6

Note: A minor in Spanish of less than 22 credits is not acceptable.

SPEECH

A. 34-CREDIT SPEECH TEACHING MAJOR

ComG 101 Fundamentals of Public Speaking 2
ComG 111 Introduction to Communication Studies 4
ComG 132 Oral Interpretation 2
ComG 134 Nonverbal Communication 2
ComG 233 Interpersonal Communication 3
ComG 235 Organizational Communication 3
ComG 331 Conflict Management 3
ComG 332 Communication & the Small Group 3
ComG 333 Interviewing 3
Comm 431 Professional Presentation Techniques 3
Comm 441 Ethics in Mass Communication 3
Ed 475 Secondary School English Methods 3

B. 23-CREDIT SPEECH TEACHING MINOR

ComG 101 Fundamentals of Public Speaking 2
ComG 132 Oral Interpretation 2
ComG 233 Interpersonal Communication 3
ComG 331 Conflict Management 3
ComG 332 Communication & the Small Group 3
Ed 475 Secondary School English Methods 3
Courses selected from those specified for the speech teaching major 7

THEATRE ARTS

A. 40-CREDIT THEATRE ARTS TEACHING MAJOR

TheA 102 Theatrical Make-up 3
TheA 103-104 Theatre Technology I-II 4
TheA 105-106 Basics of Performance 6
TheA 150 Performance Lab 1
TheA 190 Theatre Practice 2
TheA 201 Scene Design I 3
TheA 202 Costume Design I 3
TheA 305 Intermediate Acting 3
TheA 320 Stage Management 2
TheA 371 Play Analysis 3
TheA 467-468 The Theatre 6
TheA 471 Directing 3

B. 23-CREDIT THEATRE ARTS TEACHING MINOR

TheA 103-104 Theatre Technology I-II 4
TheA 105-106 Basics of Performance 6
TheA 190 Theatre Practice 2
TheA 201 Scene Design I 3
TheA 202 Costume Design I 3
TheA 320 Stage Management 2
TheA 471 Directing 3

THEATRE ARTS-SPEECH

39-CREDIT COMPOSITE TEACHING MAJOR

ComG 101 Fundamentals of Public Speaking 2
ComG 132 Oral Interpretation 2
ComG 134 Nonverbal Communication 2
ComG 233 Interpersonal Communication 3
ComG 331 Conflict Management 3
ComG 332 Communication & the Small Group 3
Comm 431 Professional Presentation Techniques 3
TheA 103-104 Theatre Technology I-II 4
TheA 105-106 Basics of Performance 6
TheA 201 Scene Design I 3
TheA 202 Costume Design I 3
TheA 320 Theatre Management 2
TheA 471 Directing 3

VOCATIONAL EDUCATION

Vocational education is offered only in the major curriculum leading to the degree of B.S.Ed. Teaching minors in vocational education are not offered.

College of Engineering

Richard T Jacobsen, Dean (125 Janssen Engr. Bldg.; 208/885-6479); Weldon R. Tovey, Associate Dean; David M. Woodall, Associate Dean.

The mission of the college is to prepare students for professional practice, admission to advanced degree programs, leadership in the profession, and lifelong learning; to promote the discovery, development, and dissemination of knowledge through excellence in research; and to contribute to the economic development of the state, region, and nation. To this end, the college provides statewide access to high quality educational programs leading to baccalaureate and advanced degrees in engineering and computer science as described below.

The Engineering Profession

Members of the engineering profession use their knowledge of mathematics and the sciences to create useful and economic devices, structures, and systems for the benefit of the human race. The engineer's talents are used in many ways: design, construction,

and operation of public works and utilities systems; planning, construction, and operation of industrial processes and equipment; application of technical products; and creation of devices and systems needed for the support of all human activity, such as food production, transportation, communication, and control of the environment. Many engineers hold responsible managerial positions; others are key members of the interdisciplinary teams that solve the complex technical, economic, and social problems of the world.

The engineering profession recognizes that social, economic, political, and cultural, as well as technical considerations are involved in most of the works in which the modern engineer is engaged. A part of an engineer's education is devoted to the humanities and the social sciences to help him or her relate the technical preparation received to the world today and enhance the engineer's role as an educated, responsible citizen.

To qualify as an engineer, one usually undertakes a four-year college program leading to a Bachelor of Science (B.S.) degree in one of the major branches of engineering practice. Bachelor of Science graduates may either go directly into engineering employment or proceed to graduate study to pursue a given area of interest in depth. As the technology of engineering includes a wide range of subject matter that can be explored only to a limited extent in an undergraduate program, more and more students undertake graduate study for better preparation in a specific field before seeking employment as practicing engineers.

All states require that engineers engaged in work affecting public health and welfare be licensed or registered. This requires a qualifying examination in fundamentals of engineering, usually taken during the last year of undergraduate study, and a period of practical experience followed by a second qualifying examination in the practice of engineering. Many industries, while not legally required to use registered engineers, encourage registration as evidence of professional stature of their engineering employees.

The Computer Science Profession

Although much of the above applies to computer science, it is a profession with its own merits. Computer science is the systematic study of algorithmic processes that describe and transform information. It includes analysis, design, implementation, and application of computer software and computing systems; hardware selection; and language development and modification. Computer scientists work alongside engineers, scientists, and businessmen to provide faster and more efficient ways to calculate, record, manipulate, store, and use all kinds of information. Applications range from data base operations to sophisticated calculation and computer-aided design systems. Refer to the section on the Department of Computer Science and/or write to the department for additional information.

Equal Opportunity

The degree programs of the college and the professions they represent actively seek out women and under-represented minorities. Opportunities are unlimited and an increasing number are entering the professions.

Preparation and Admission

A statement of admission requirements is included in part 2. A student may be admitted with less than the requirements listed, but the deficiency must be made up before he or she can progress very far in a college engineering course of study.

Students who contemplate entering the College of Engineering with advanced standing from other institutions should complete as many of the freshman and sophomore requirements listed in the curricula as possible. Calculus and the various introductory engineering courses are prerequisites to many advanced courses, and their omission may delay graduation.

Students from out-of-state institutions who wish to transfer to a degree program offered by the College of Engineering are invited to apply. Those whose cumulative GPA is below 2.8 for all previous college-level courses, including any courses taken at UI, may be admitted on approval of the College of Engineering Admissions Committee.

Admission to Classes

As a prerequisite to any upper-division course normally taken in the junior or senior year and offered by the College of Engineering, students in the College of Engineering must have completed selected courses from the required courses in chemistry, computer science, engineering, mathematics, and physics that are normally to be taken by them during their first two years and must have attained a grade of C or better in each of those courses.

Scholarships and Awards

Many scholarships and awards are available to College of Engineering students and prospective students. See "Financial Aid" and "Special Awards" in the student service section of part 2.

Courses of Study and Degrees

The College of Engineering includes the degree-granting Departments of Biological and Agricultural, Chemical, Civil, Electrical, and Mechanical Engineering, and of Computer Science. Careful attention is given to curriculum content and educational philosophy to keep all programs attuned to rapidly changing technology.

Programs in the college lead to the Bachelor of Science in eight disciplines, i.e., Bachelor of Science in Agricultural Engineering, Bachelor of Science in Biological Systems Engineering, Bachelor of Science in Chemical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Computer Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mechanical Engineering, and Bachelor of Science in Computer Science.

All engineering B.S. degree programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET).

The Bachelor of Science program in computer science is accredited by the Computer Science Accreditation Commission of the Computer Science Accreditation Board (CSAC/CSAB).

The Bachelor of Science programs in engineering disciplines are designed to prepare the student either for immediate entry into the profession or for graduate study. Most of the courses taken by freshmen and sophomores are the same in all curricula. The student may postpone a final decision on a branch of study for a year or more with little, if any, consequence, thus allowing ample opportunity for professional orientation. The junior and senior years are devoted to application of basic principles in the various fields of practice.

Courses of study leading to the degrees of Master of Science (M.S.), Master of Engineering (M.Engr.), and Doctor of Philosophy (Ph.D.) are offered in agricultural, chemical, civil, electrical, and mechanical engineering. The M.S. and M.Engr. degrees are available in computer engineering, and the M.S. and Ph.D. degrees are available in computer science. The Master of Engineering in engineering management is also available. Through the facilities at the UI/Idaho Falls Center for Higher Education, the M.S., M.Engr., and Ph.D. degrees are available in nuclear engineering. The requirements for graduate degrees are outlined in the *Graduate Catalog*.

Faculty

The faculty is the key to the quality of the engineering program. With few exceptions, faculty members in this college hold advanced engineering degrees; more than 95 percent hold the Ph.D. degree.

Recognition in such publications as *Who's Who in America, Who's Who in the West, Who's Who in Engineering,* and *American Men and Women of Science* is common.

A distinguishing feature of the faculty is a blend of academic and practical experience. Many faculty members have extensive experience in practice that they bring into the classroom. This is valuable in preserving a balance between theoretical and practical aspects of engineering.

Facilities

The facilities of the College of Engineering are among the finest in the country. Work is centered in the two-block-square engineering complex, which includes the Allen S. Janssen Engineering Classroom Building, the J. E. Buchanan, J. Hugo Johnson, and Henry F. Gauss Engineering Laboratories, and the newly completed Engineering/Physics Building. These facilities are supplemented by the agricultural engineering and isotopes laboratories at other locations on the campus. In total, more than 235,000 square feet of floor space is available for the special use of the College of Engineering. Laboratories include modern equipment for teaching and research in all areas of instruction with recent additions for computerized drafting, CAD/CAM, computerized VLSI design, and robotics. Some of the equipment is of advanced design found in only a few institutional laboratories. Students also have access to the 16 general purpose open-access computer laboratories across the campus, with over 500 PCs and 50 MACs. There are over 100 software applications available, as well as e-mail, telnet, WWW, and other network services. An assortment of Hewlett Packard minicomputers and engineering work stations, and various types of smaller computers are available within the engineering complex.

Standing and Advantages

With a tradition of excellence dating from the founding of the University of Idaho, the College of Engineering has developed engineering bachelor's degree programs on the Moscow campus that are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology as listed previously. For over 40 years, graduate programs in several disciplines have been available at off-campus sites as well. Since 1896, when it granted its first degrees, graduates of the college have spread throughout the world. The large number of firms and agencies from throughout the country that send interviewers to the campus each year seeking to hire Idaho engineering graduates attest to the reputation of the university's engineering program.

The size of the college is near the median of engineering colleges in the country. It is not so large that the importance of the student as an individual is lost; it is large enough to support the faculty and facilities needed for top quality education.

Attention is given to both undergraduate and graduate programs. New concepts and knowledge resulting from the graduate program feed into the undergraduate program to keep it up to date. Undergraduate students have an opportunity to observe graduate projects to help them ascertain their interest in graduate work so that the student is better prepared and more soundly motivated if he or she does proceed to graduate work.

Engineering Experiment Station

The function of the Engineering Experiment Station is to encourage and coordinate the College of Engineering's research and extension programs that are integral parts of the college's academic and service efforts.

The research program in engineering is conducted by the regular faculty and students of the college. There is neither a separate research facility nor a separate research staff. The College of Engineering requires that any research it undertakes have academic significance. A large part of the college's research program deals with developing new knowledge that is applicable to Idaho's economy or devising new methods or applications for using existing knowledge to the benefit of the state. Most of the funds in support of research come from sources other than legislative appropriations. These funds are the result of research contracts and grants with various local, state, and federal agencies and private industry. Information regarding research capabilities is available upon request.

Believing that education is a never-ending need of man, the College of Engineering, through the means of short courses, workshops, seminars and forums, and pertinent publications, attempts to ascertain and meet the specific continuing education needs of Idaho's graduate engineers, computer scientists, and the technical community. Staff members also endeavor to provide information to the entire population of Idaho that may contribute to the successful solving of societal problems.

Off-Campus Programs

To fulfill its charge to provide engineering education to the people of Idaho, the College of Engineering provides several degree programs off campus. Graduate degrees in all disciplines are available through the Resident Instructional Centers at Boise, Idaho Falls, and Coeur d'Alene, using a combination of resident faculty and video courses. The Engineering Outreach program uses video technology to provide graduate and advanced undergraduate course work, including some complete master's degrees, at any location. For more information, see "Resident Instructional Centers" in part four.

General Requirements for Graduation

University Requirements. See regulation J in part 3 for requirements that all students in the university must meet.

College Requirements. The civil engineering curriculum requires 129 semester credits, mechanical enginering 130, and biological systems engineering and electrical engineering 131. All others require a total of 128 semester credits.

Note: In calculating the credit total for each degree, the College of Engineering does not include credits that a student may have been required to earn in Engl 101, Math 143, and any courses taken to remove deficiencies.

Major Curricula

The curriculum for each major is listed in part 5 by department. Each curriculum provides for electives to be arranged in consultation with the student's adviser in accordance with the student's interest and consistent with current department and college policies. The electives are intended to provide flexibility in the student's program. Undesignated electives will usually be taken outside of the student's major field of study.

College of Forestry, Wildlife and Range Sciences

Charles R. Hatch, Dean (202 Forestry, Wildlife and Range Sciences Bldg.; 208/885-6441); Alton G. Campbell, Associate Dean.

Professional education leading to a degree in forestry began at the University of Idaho in 1909. To the initial curriculum in forest resources have been added those in forest products (1914), range resources (1917), wildlife resources (1942), fishery resources (1951), and resource recreation and tourism (formerly wildland recreation management) (1974).

The academic objective of the college is to provide its students with opportunities to become better prepared for lives of responsibility and fulfillment and to acquire competence for entry into professional careers in natural resource science and management. Each of the

curricula offered by the college acquaints the student with the physical, biological, and social sciences and with the humanities, thus establishing a basis of general education and preparing the student for the scientific-professional courses addressing the use of forest and range lands and related resources. In addition to the most modern technical and academic classroom instruction, the college prides itself in "hands-on" training taking advantage of its outstanding field facilities and its emphasis on communications and student activities to enhance leadership potential.

Advantages of Location

The university is ideally located for preparing students for the renewable natural resources professions. Forest and range lands comprise 90 percent of the state's area. Forested areas include many types from the ponderosa pine in southern Idaho to the mixed coniferous and famous white pine of northern Idaho. Range lands vary from spring-fall and winter ranges in the sagebrush-grass and bunchgrass zones to summer ranges in several of the forested zones. Within the forest and range lands are hundreds of lakes and streams and extensive wilderness areas that provide habitat for fish and wildlife and opportunities for wildland recreation.

The values derived from these resources include wood products of all types; cattle and sheep in great numbers; abundant wildlife of many species; world renowned game fish; water for domestic use, power, and irrigation; and recreational activities. These natural study areas and resources are available to the student in preparing for his or her profession.

Facilities

A modern three-story, 90,000-square-foot building, the Forestry, Wildlife and Range Sciences Building incorporates classrooms, laboratories, scientific equipment, plant and animal collections, computer access, and other support functions into an ideal environment for natural resources education and research.

A university experimental forest includes 7,200 acres of forest land located about 25 miles from the campus and is managed by the college as a working forest for demonstration, research, and education. The forest properties include a 200-acre recreation area, a 33-acre privately owned nature preserve, and two smaller tracts closer to Moscow that serve as outdoor classrooms. The Frank Pitkin Forest Nursery site includes 40 acres and three greenhouses that produce 700,000 seedlings annually for student training and research purposes. On the university campus, the Shattuck Arboretum, with over 60 species of trees, provides an outdoor classroom for studies in dendrology. Other field facilities include the McCall Field Campus located on Payette Lake in the mountains of west-central Idaho, the Clark Fork Field Campus in northern Idaho, the Taylor Ranch Wilderness Field Station in the heart of the Frank Church River-of-No-Return Wilderness, and the Lee A. Sharp Range Experimental Area in southern Idaho. In addition, Idaho's 37 million acres of public forest and range lands constitute a vast natural laboratory for students in all of the college's curricula.

To take advantage of these facilities and implement "hands-on" training, the college employs student logging, surveying, planting, and controlled burning crews.

Standing of the College

To assure high professional standards several curricula in the college are periodically evaluated and rated as accredited or not accredited. Forest resources curricula at UI have been accredited since the Society of American Foresters first began accreditation in 1935. Similarly, in 1985 the range resources curriculum became one of the first in the nation to be accredited by the Society for Range Management. The curriculum of the Department of Resource Recreation and Tourism is accredited by the National Recreation and Parks Association.

Departments

The college has five departments: Fish and Wildlife Resources, Forest Products, Forest Resources, Range Resources, and Resource Recreation and Tourism. Although these departments are separate administrative entities, they share a common philosophy: integrated resource management. Many of the faculty members hold joint appointments in more than one department; student programs include courses in more than one department; and the teaching, research, and service missions of all the departments are integrated and coordinated at the college level. This integration is enhanced by the Forest, Wildlife and Range Experiment Station, described below.

Degrees

Curricula leading to the following degrees are offered by the college: Bachelor of Science in Fishery Resources (B.S.Fish.Res.) with options in management and aquaculture; Bachelor of Science in Forest Products (B.S.For.Prod.) with options in forest products business management, timber harvesting, pulp and paper technology, and wood construction and design; Bachelor of Science in Forest Resources (B.S.For.Res.) with options in ecosystem management, administration, production, and science; Bachelor of Science in Natural Resources Ecology and Conservation (B.S.Nat.Res.Ecol.), Bachelor of Science in Range Resources (B.S.Range Res.); Bachelor of Science in Resource Recreation and Tourism (B.S.Rec.Rc.) with minors in natural resource communication, wilderness and nature conservation, tourism and leisure enterprises, outdoor recreation leadership, or any other university minor; and Bachelor of Science in Wildlife Resources (B.S.Wildl.Res.) with options in quantitative sciences, habitat, aquatics, communications, policy-law-administration, and biology; Master of Science (thesis and nonthesis options); and Doctor of Philosophy in forestry, wildlife and range sciences, with dissertation topics in any of the five departments.

Admission Requirements

General. For a statement of admission requirements, see part 2.

Transfer Students. Students who propose to complete a portion of their undergraduate studies at a junior college, or elsewhere, before entering UI, should follow as closely as possible one of the curricula for the first two years set forth below. A student whose program does not closely approximate one of these will not be able to graduate in four years. Total time to graduation will also be extended if wildland field ecology is not completed by the end of the sophomore year. Transfer to UI before the end of the sophomore year is usually to the student's advantage. Correspondence with the dean of the college should be initiated at least three months before the date on which the student plans to enroll.

Undergraduate Program

The undergraduate curricula are designed to provide both a general and a professional education. The objective in the first two years is to provide students with a good foundation in the biological, physical, and social sciences and in writing and speaking skills. The basic philosophy of the college is to educate according to the principles of integrated natural resource management while providing specialization in the student's major area of interest. Because of the emphasis placed on the integrated approach, all curricula in the college, except two options in forest products, have incorporated into them a common 20-credit set of core courses as follows: four of the six departmental principles courses, Natural Resources Ecology, Society and Natural Resources, Wildland Field Ecology I and II, and Interdisciplinary Natural Resources Planning.

The curricula and options in each department offer as many courses in common with those in other departments as possible, while ensuring that specific professional education requirements are met. Flexibility and individuality in each student's program are provided by curriculum choice, by options within curricula, and by elective credits.

Provision is also made for advanced training leading to a military commission.

A variety of scholarships are available to undergraduate students based on need and merit.

Graduate Program

Programs leading to advanced degrees are offered in each of the fields represented by the undergraduate curricula of the college. Both the master's and the doctor's degree, with emphasis on conducting a research project and preparing a thesis or dissertation, are available. A nonthesis master's degree may also be obtained.

Excellent facilities and opportunities are available for graduate study and research in the subject-matter areas. Research in the college is organized through the Idaho Forest, Wildlife and Range Experiment Station. Research is also supported by the Idaho Cooperative Fish and Wildlife Research Unit, the Cooperative Park Studies Unit, the Wilderness Research Center, and by various state, federal, and private organizations.

Assistantships and fellowships are available to assist highly qualified students in their graduate programs.

More complete information on graduate studies may be obtained by writing the dean of the College of Graduate Studies and requesting a copy of the *Graduate Catalog*. Specific information on specializations available and projects under way may be obtained by writing the director of graduate programs, College of Forestry, Wildlife and Range Sciences.

Requirements for Graduation

University Requirements. See regulation J in part 3 for general university requirements for degrees.

College Requirements. Credits for the baccalaureate degree vary from 128 to 132 semester hours, depending on the option selected. A minimum cumulative grade-point average of 2.00 in all courses taken in this college is required for graduation. Courses in the college numbered above 299 are not open to any undergraduate student who is on academic probation.

The college may permit substitutions or grant waivers of specified requirements. Thus, for a student with special aptitudes or interests, a program can be devised that will provide a foundation for advanced study or research or meet other acceptable and well-defined career objectives.

Summer Field Course, Internship, and Employment Requirements. Students in all curricula except the pulp and paper and wood construction and design options of forest products, are required to complete the 2-credit Wildland Field Ecology II course during the two-week period immediately following the close of spring semester in mid-May. They should finish this requirement before beginning the professional course work of their upper-division programs. Students in some curricula have an internship or summer work experience requirement. Specific information is contained in the respective departmental sections of this catalog.

Idaho Forest, Wildlife and Range Experiment Station

All members of the college faculty are on the staff of the experiment station. Other members of the station staff include full-time research associates and technicians, as well as graduate-student appointees.

The program of the experiment station is closely connected with the graduate training program of the college. Many of the graduate students enrolled in the college are on assistantships associated with station projects.

The station staff conducts research on a wide variety of renewable natural resource management problems in the areas of forestry, forest products, range, resource based recreation, resource based tourism, wildlife, and fisheries. Several projects are interdisciplinary. Funds for the station are provided by the university, by some departments of the state of Idaho, and by grants from federal, other state, and private sources. Currently a majority of these funds comes from non-university sources. More information on station activities may be obtained by writing to the associate director, Idaho Forest, Wildlife and Range Experiment Station, College of Forestry, Wildlife and Range Sciences.

General Studies Program

Thomas E. Bitterwolf, Director (112 Admin. Bldg.; 208/885-6426).

The General Studies Program, in which students at any level of competence may enroll, serves students in two ways. General studies is elected by many students in order to explore various academic areas before deciding in which degree program they would enroll. Students who wish to major in general studies may develop, in consultation with their adviser, a coherent program of studies and work toward the degree of Bachelor of General Studies, as outlined below. Also, credits and grade points earned while a student is enrolled in the program may be applied toward any other degree for which they are applicable.

Admission to the Program

New students wishing to enroll in the General Studies Program may indicate their choice on the application form for admission to the university. Students who are undecided between two majors offered by any of the university's colleges should enroll as "undeclared" students in that college rather than in general studies. Students currently enrolled in one of the colleges of the university may transfer to the program by applying to the director.

General Regulations

So that students may have the greatest opportunity to explore various types of subject-matter areas, as well as different types of student programs, there are no requirements during the advisory phase. However, to graduate, a student must either declare as a candidate for the degree of Bachelor of General Studies or transfer to one of the colleges of the university. In either case, the student must fulfill all of the requirements for the degree, including achieving an overall grade-point average of 2.00 (C). Whether in the advisory phase or in the degree program, a student ineligible to be in or to continue in the College of Business and Economics may take no more than 16 credits of lower-division work and, except for real estate and insurance courses, no more than 9 credits of upper-division work in that college. Furthermore, students may not transfer from general studies to some of the university's colleges unless they have a grade-point average of at least 2.00.

Bachelor of General Studies Curriculum

The curriculum leading to the degree of Bachelor of General Studies is designed to provide maximum flexibility for undergraduates while planning their program of studies. Since the only specific subject requirements are the general university requirements, students can plan their programs to the best advantage of their particular educational objectives. This means that students must bear the major responsibility for their choice of courses. Those who plan wisely have the opportunity to obtain an excellent education. The key admonition is: Plan your program carefully.

The major thrust of the B.G.S. degree program is nonspecialized education. Although a student could take his or her work in a limited number of departments, the intent of this program is to permit great latitude in the choice of subjects so that students may satisfy their particular objectives. No student may become a candidate for the B.G.S. degree who has already earned a baccalaureate degree or who is a candidate for another degree offered by the university.

Major. No major other than "general studies" will be certified on the student's diploma or official transcript. Students who wish to have a designated major should pursue a departmental baccalaureate degree (B.A., B.S., etc.). Naturally, a student may select a combination of courses that will be the equivalent of a major, but this will not be officially recognized by the university as a major.

Degree Requirements. In addition to the general university requirements for the baccalaureate degree (see regulation J-3), sufficient electives must be taken to total 128 credits. *A minimum of 48 credits must be earned in courses numbered 300 and above.* Not more than 40 credits in any one subject field may be counted in the 128 credits.

Suggestions to Students. Students are advised not to make a firm decision with respect to the B.G.S. degree before the end of the freshman year. During the freshman year, and probably during the sophomore year, students should consider following one of the curricula leading to a departmental baccalaureate degree, deviating from the departmental requirements only where it appears educationally advisable to do so.

It is very important that the student working toward the B.G.S. "look ahead" to see in which departments he or she wishes to accumulate the required 48 credits in upper-division courses (those numbered 300 and above). Many of these courses have prerequisites that must be completed during the early semesters of the student's undergraduate career. If planning is delayed, it may be that some courses will be "unavailable" because the student has not taken the prerequisites.

College of Graduate Studies

Jean'ne M. Shreeve, Vice President for Research and Graduate Studies (106 Morrill Hall; 208/885-6243); Roger P. Wallins, Associate Dean.

The College of Graduate Studies was formally organized in 1925 (then designated as the Graduate School), but the university has offered advanced degrees for more than 90 years, awarding the first master's degree in 1897. The graduate college encompasses all divisions of the university, but does not supervise programs in the College of Law. This coverage of all regular disciplines and professional fields provides a wide variety of academic programs. Enrollments are large enough to make possible the vital interchange of ideas among students and between students and faculty that is necessary for graduate programs, and yet enrollments are sufficiently small to permit close faculty-student relationships. Interdepartmental cooperation is an important factor on the Idaho campus. The university is the chief research center for the state and as such operates active graduate programs in most areas providing a broad research base upon which graduate programs have been built.

Degree programs are offered in 71 areas for master's degrees, 6 for professional degrees, and 24 for doctoral degrees. Specific degree offerings are listed in the *Graduate Catalog*, which also provides detailed information about the graduate college, appointments, financial aid, library, research facilities, and procedures.

Undergraduate Enrollment in the College of Graduate Studies (Partial Enrollment)

A senior with 116 or more credits and who has a cumulative grade-point average of 2.80 or higher may apply for partial enrollment in the graduate college. Seniors desiring partial enrollment must submit to and have approved by the graduate college a "Partial Enrollment" form that contains a registration plan designating undergraduate and graduate courses, thereby allowing a separate graduate transcript to be established. Capable students who are in their last year and who receive departmental approval for such enrollment can thus begin limited graduate work at an earlier date than would otherwise be possible. Partial enrollment is for one semester at a time only and does not admit or guarantee subsequent admission of such students to the graduate college. Students who have been granted partial enrollment and who later wish to be admitted to the graduate college for work on a degree must apply for admission to the graduate college following usual procedures. The deadline to apply for partial enrollment is the tenth day of class for that semester or session.

Senior in 500-Level Course

A senior may enroll in 500-level courses provided that the student has a cumulative grade-point average of 2.80 or higher. Credits earned under this regulation are recorded on the student's undergraduate record only and may not be used subsequently toward an advanced degree.

College of Law

John A. Miller, Dean (101 Law Bldg.; 208/885-6422); Neil E. Franklin, Associate Dean.

The College of Law was organized in 1909 and is the only school devoted to the study of law in the state of Idaho. The college is a member of the Association of American Law Schools and is approved by the Council of the Section of Legal Education and Admissions to the Bar of the American Bar Association.

Purpose of the College

The role of the College of Law is to educate students for the legal profession with its many facets and its involvement in the whole range of society. The curriculum is designed to provide instruction over three academic years in principles generally applicable in the United States. The responsibilities assumed by the professional man or woman are emphasized, as are solutions to ethical problems. The study of law is also an asset to those who wish to hold positions of leadership in government or business.

Methods of instruction are adapted to the development of each student's highest potential and vary with the professor and the course. Basic instruction is accomplished primarily by way of the case system, a study of the actual decisions of appellate courts, supplemented by selected readings that provide insight into the nature of judicial and legislative processes. Problem and simulation methods are used in advanced courses. Techniques that encourage individual initiative and develop perception and communication abilities are emphasized. In the third year, clinical training provides contact with clients. Because law changes rapidly, mere accumulation of information is subordinated to the more important ends of individual development and training in critical habits of thought.

Admission to the Bar

The College of Law is fully accredited by the American Bar Association and the Association of American Law Schools, and its degree is accepted by all state bar associations. Educational prerequisites vary among states, and inquiry should be made of the secretary of the bar examiners in the state in which the applicant intends to practice to determine the existence of special requirements.

Suggestions for Pre-legal Study

The subject matter of pre-legal education is less important than the quality of work performed. Although the most common pre-law majors are one of the social sciences or business options, law students are drawn from a broad range of undergraduate programs from agriculture and engineering to English and philosophy. The study of law requires logical analysis and effective written and oral communication. Any rigorous course of study that develops these skills is good preparation for law school. Beyond this, a well-rounded education is best. American government and western political

philosophy are important in public law; economic and accounting concepts are basic to much business and commercial law; history, literature, philosophy, and psychology all provide useful insights into cultural tradition and human motivation which are important to the interpretation and application of law.

A pre-law adviser is available through the Political Science Department to guide students in selecting courses within the particular college or university that will meet these objectives. The dean's office at the College of Law is also available for consultation or assistance in program planning.

Application for Admission

Applicants for admission must have a bachelor's degree from an accredited four-year college or university by the date of enrollment at the College of Law. Applicants must also arrange for a complete Law School Data Assembly Service (LSDAS) report, which consists of a Law School Admission Test (LSAT) score, copies of transcripts, and other relevant information.

The Law School Admission Test is given by the Law School Admission Services at a large number of places throughout the United States in October, December, February, and June at a cost fixed by that organization. Arrangements for taking the test must be made by the individual applicant directly with the Law School Admission Services well in advance of the dates set for the test. The exact dates and places for the test, application blanks, and a bulletin of information about the test may be obtained by writing directly to Law Services, Box 2000-R, Newtown, PA 18940-0998, or to the College of Law, University of Idaho. This information can also be obtained from the pre-law adviser of most colleges.

Commercial materials on the LSAT are available at most bookstores and LSAT preparation courses may be found in many locations. Applicants are advised to study for the test ahead of time. Old LSAT scores are acceptable as long as an LSDAS report can be assembled by the testing service.

Additionally, registration with the Law School Data Assembly Service is required of all applicants. Instructions concerning registration for the Law School Data Assembly Service and an application blank for the purpose are contained in the same bulletin that describes the Law School Admission Test. Applicants should accomplish this registration at the same time they register for the Law School Admission Test.

To be assured of consideration for admission in the fall, applicants must arrange for all admission credentials (listed below) to reach UI by February 1. This requires applicants to take the LSAT no later than the preceding December. However, in order to assure timely application, the October LSAT, almost a year before admission, is recommended. If space is available, applications completed after February 1 may also be considered.

Decision on Admission

Admissions decisions are made by a three-member faculty committee chaired by the associate dean. The college receives many more applications than it can accept. Consequently, the Admissions Committee must deny admission to many who are otherwise qualified to study law. In general, offers of admission are extended to those judged to present the greatest promise for success in law school.

Although UGPA and LSAT scores are the most important factors used to arrive at this judgment, the committee will consider any additional information that an applicant believes is important in assessing his or her ability to perform law school work. A personal statement often provides insight into an applicant's motivation for attending law school, as well as functioning as a sample of writing ability, and is probably the most helpful additional item for most applicants. Graduate work and/or work experience may provide evidence of achievement and capabilities inadequately addressed by standard credentials. Letters of recommendation and prior written work may also be of assistance in assessing an applicant's relative promise. Letters of recommendation should be limited to three, and should address the applicant's ability to engage in critical analysis and to communicate orally and/or in writing. An applicant's cultural background may also be judged relevant, either because it suggests that an applicant will supply diversity to the student body or because it bears on the evaluation of standard credentials.

As a state-supported institution, the College of Law extends a preference to on-time applicants who are Idaho residents. The residency criteria used by the Admissions Committee is somewhat different from those used by the University of Idaho Admissions Office to determine fees. In recent years the median UGPA for residents has been approximately 3.22 and the median LSAT has been approximately 60th percentile. The median figures for nonresidents are 3.30 GPA and 85th percentile LSAT.

Ordinarily, on-time applicants will be notified of our initial decision no later than April 1. For most, this decision will be either positive or negative. However, some will be placed on a "waiting list" and will be admitted thereafter if we have a sufficient number of withdrawals by previously admitted applicants. Those on the waiting list may not receive final word about admission until mid-summer. The dean's office will consult with wait-listed applicants on request and attempt to provide as much information about their status as possible.

Upon acceptance, a $200 deposit is required to secure a place in the fall entering class. This deposit will be applied to student fees upon registration. It is fully refundable until June 1. In cases of special need, the deposit may be waived.

Transfers from Other Schools

Space is limited, and only a few transfers into the second year class can be accommodated. Special standards apply, and within these standards, a degree of preference is extended to residents of Idaho. Students transferring into our program are expected to complete at least three semesters at Idaho. Students desiring to study here for a lesser period should arrange to have credits at Idaho accepted toward a degree from the law college in which they are currently enrolled. Before a transfer applicant is considered, we must have on file a final transcript of all work that will have been undertaken at other law schools by the time of transfer. We also require a letter from the dean or associate dean following the completion of all such work that states that the applicant remains in good standing and is eligible to continue without any condition or qualification. Consequently, for an applicant currently enrolled in a law school, no decision on transfer will be possible until June or later, when all grades from current work are in. If an applicant attends a summer session of a school of law, it will not be possible to process a final acceptance until the close of the summer session. If an applicant needs some guidance before results of his or her spring semester's work become available, a tentative opinion about probable admissibility can be given.

Nondegree Candidates

Students who are not degree candidates in the College of Law but are enrolled elsewhere at the UI are permitted to register for a course offered by the College of Law if the permission of the dean or associate dean of the College of Law and the instructor of the course are both granted. Such courses cannot be credited toward a law degree even if the student is later admitted to the College of Law.

Fees

See the section on "Fees and Expenses" in Part 2.

Grading System

Grades for courses taken in the College of Law shall be awarded on the basis of A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F; provided, however, that by resolution the law faculty may designate any course, or courses, to be graded on a pass-fail basis. Any approved

course work taken at any other institution will be recorded on the transcript as a "P," if the student earned a "C" or better in that course. No credit will be awarded for work done at another institution if the student earned less than a grade of "C."

Grade-point averages of students in the College of Law shall be computed by assigning the following numerical point values per semester hours: A = 4.00; A- = 3.67; B+ = 3.33; B = 3.00; B- = 2.67; C+ = 2.33; C = 2.00; C- = 1.67; D+ = 1.33; D = 1.00; D- = 0.67; F (or "fail" under the pass-fail basis) = 0.00. The cumulative grade-point average is the quotient of total points assigned, divided by total hours undertaken. Courses in which marks of I, W, or P (pass) have been given shall be disregarded in the computation. Courses may be repeated only with the approval of a majority of a quorum of the faculty. All course grades shall be included on the transcript and in the calculation of the grade-point average, even if courses have been repeated.

This grading system applies in determining: (a) eligibility for continuing study in the College of Law; (b) compliance with requirements for the Juris Doctor degree; and (c) class ranking within the College of Law.

Grades in most courses offered by the College of Law are awarded on the basis of performance in a single written examination conducted at the end of the semester. In courses where it is so announced, grades on written projects or classroom participation may be included.

Unless arranged in advance by the professor, students receiving an "incomplete" grade for a course must remove that grade within six weeks after the first day of classes of the following fall or spring semester. Incompletes not made up before that date automatically revert to the grade indicated by the professor as the "permanent" grade, usually an "F." The grade ultimately given will be computed in the GPA for the semester in which the class was begun.

Additional Information

For more detailed information about the College of Law, see the College of Law Announcement.

College of Letters and Science

Kurt O. Olsson, Dean (112 Admin. Bldg.; 208/885-6526); Doyle E. Anderegg, Associate Dean; Thomas E. Bitterwolf, Interim Associate Dean.

Established in 1900, the College of Letters and Science (L & S) is the oldest division of the university. The objectives of the college are to provide a liberal and professional education in the arts and sciences, to advance knowledge through research and scholarship, and to perform service to the university at large, the state, and the nation.

Departments and Programs of Instruction

Included within L & S are the Departments of Biological Sciences, Chemistry, English, Foreign Languages and Literatures, History, Mathematics and Statistics, Philosophy, Physics, Political Science and Public Affairs Research, Psychology, Sociology/Anthropology, and Theatre Arts. The School of Communication and the Lionel Hampton School of Music also function as departments of the college. Cooperating departments from other divisions include the Departments of Art; Economics; Geography; Microbiology, Molecular Biology and Biochemistry; and Naval Science, and the Margaret Ritchie School of Family and Consumer Sciences. The departments and schools in L & S offer nearly 100 curricula and curricular options leading to baccalaureate degrees, as well as graduate study leading to master's and doctor's degrees.

Undergraduate. See departmental sections in part 5.

Graduate. The College of Graduate Studies offers work toward advanced degrees in many disciplines of the College of L & S. Currently work leading to a master's degree is available in the fields of anthropology, biological sciences, botany, chemistry, English, environmental science, French, German, history, mathematics, music, physics, political science, psychology, Spanish, statistics, theatre arts, and zoology. The degree of Doctor of Philosophy is available in botany, chemistry, history, mathematics, physics, political science, and zoology. For the specific degrees available, see the list of programs offered in part 1.

Nondegree. A nondegree program is offered in which each student's course of study is worked out to meet his or her special needs. The program is intended primarily for students who (1) do not plan to obtain degrees at the University of Idaho, (2) plan to transfer to other institutions, or (3) have objectives that are not provided for by any of the established curricula in the college.

Interdisciplinary Studies. Students who have broad educational goals that necessitate work in several disciplines or departments may present an interdisciplinary curriculum for the B.A. or B.S. degree. For details, see the program in interdisciplinary studies in part 5.

Preparatory Programs in Medicine and Dentistry. Premedical and predental programs are administered by the L & S Health Studies Committee.

Admission to the College

Students who expect to enter L & S should plan their high school electives carefully, both to lay the foundation for their general education, which will be continued in the university, and to ensure that they are adequately prepared to begin their study at the college level. Students should select subjects in English, foreign language, social sciences, natural sciences, mathematics, and fine arts that will provide a well-rounded preparation for further study. For a statement of general admission requirements, see part 2. Graduates of four-year, accredited high schools ordinarily are eligible for admission to L & S.

Regular Enrollment in a Program of Studies

Students in L & S must enroll in regular programs unless they are attending on a part-time basis (seven-credit maximum), or they are admitted to nondegree programs. Except for the two-year program in prenursing studies, a regular program is one that leads to a degree that the college offers. However, it is not necessary to select a major curriculum until the beginning of the junior year. This permits the undecided student to take courses in a wide range of fields in order to choose a major more wisely.

Teacher Education Program

Students in L & S who are preparing for secondary-school teaching should consult the section on the College of Education in this part 4.

Laboratory of Anthropology

The Alfred W. Bowers Laboratory of Anthropology, established in 1968, serves as the research arm of the College of Letters and Science for investigations in archaeology, ethnohistory, linguistics, and physical anthropology. Major contractual research has been concentrated in historical and prehistoric archaeology for the National Park Service, Bureau of Reclamation, and the U.S. Army Corps of Engineers, burial relocation for several Northwest American Indian tribes, and archaeological surveys for the U.S. Forest Service and the Bureau of Land Management. The laboratory serves as the main clearinghouse and repository for all northern Idaho archaeological collections and records. Much of the day-to-day work consists of providing public service information on archaeological sites and artifacts for interested citizens as well as environmental impact statements for industry and government.

Modern and well equipped facilities for the cleaning, preservation, and analysis of both historic and prehistoric artifacts are contained in the laboratory. The metal artifact cleaning facilities are among the

largest and best equipped in the country. The laboratory also provides space and facilities for research associates, graduate student research, teaching and comparative collections, and a regionally oriented library.

Osteological analysis of human skeletal populations is a major concentration of the laboratory. As a matter of policy, no American Indian skeletal collections are maintained. Before any such material passes through the laboratory for analysis before reburial, the project must have the approval of the tribal authorities concerned.

General Requirements for Graduation

Each student working toward a baccalaureate degree from the college must satisfactorily complete 128 semester credits (unless a higher number is specified in the particular curriculum), including at least 36 credits in courses numbered 300 and above, the all-university requirements (see regulation J-3 in part 3), and the college and departmental requirements for the degree sought. The college requirements applicable to the B.A. and B.S. degrees are listed in part 5. The requirements for the various professional degrees (i.e., B.F.A., B.Mus., B.N.S., and B.Tech.) are listed by academic unit in part 5. The college B.A. and B.S. requirements do not apply to these professional degrees.

College Requirements for the B.A. and B.S. Degrees

Objectives. The college requirements for the B.A. and B.S. degrees are designed to ensure a broad, liberal education through the attainment of the following objectives: (1) proficiency in written and spoken English; (2) appreciation of great literature, music, and art; (3) knowledge of human development, the growth of social and economic institutions, and an understanding of the rights and responsibilities of the individual citizen; (4) perspective of American culture in the world at large; (5) sense of historical perspective; (6) acquaintance with moral, ethical, and aesthetic values; (7) familiarity with scientific thought and method; (8) ability to use and interpret basic mathematical concepts; (9) understanding of ecology; and (10) a continuing attitude of intellectual curiosity.

Requirements for the B.A. Degree

Humanities—6 credits (two courses) in addition to the minimum university-wide core requirements.

Social Sciences—3 credits (one course) in addition to the minimum university-wide core requirements.

Foreign Language—0-16 credits (zero-four courses), i.e., competence in one foreign language equivalent to that gained by the completion of four semesters of college courses (through the intermediate level). This requirement may be satisfied by the completion of either of the following options: (1) 16 credits or four high-school units in one foreign language, or (2) 12 credits in one foreign language, and one three-credit course in literature translated from the same language. The 12 credits may be satisfied by three high-school units in one foreign language.

Requirements for the B.S. Degree.

Humanities—3 credits (one course) in addition to the minimum university-wide core requirements.

Social Sciences—3 credits (one course) in addition to the minimum university-wide core requirements.

Natural Sciences, Mathematics, and Statistics—6 credits (two courses) in addition to the minimum university-wide core requirements.

For the B.S. degree, the student may substitute the successful completion of an academic minor or area of emphasis of at least 18 credits approved by the department in which the student is majoring.

Courses satisfying the *humanities* requirement are those dealing with the arts, literature, and philosophy. Courses satisfying the *social sciences* requirement are those dealing with a person's social condition including social relations, institutions, history, and participation in an organized community. *Mathematics and statistics* requirements can be met by taking courses in the Department of Mathematics and Statistics. Likewise, the *natural science* requirements can be met by taking courses in the life sciences and the physical sciences.

Special topic, workshop, seminar, and directed study courses are generally not applicable. However, individual departments can, at their discretion, certify one of these nonregular courses as meeting Letters and Science B.A. or B.S. requirements in an appropriate category.

Progress in Satisfying These Requirements. Students who wish to graduate by the end of four years of college work should take a program that results in substantial progress toward the fulfillment of the preceding requirements by the end of the sophomore year. In particular, students seeking the B.A. degree should take courses in fulfillment of the foreign-language requirement as early as possible. If they cannot do this during the first semester, they should immediately take a course that can be used in partial fulfillment of the science-mathematics requirement.

Major Curricula

Selection of a Major. Each student should select a major curriculum no later than the beginning of the junior year. Lower-division students who have not decided on a major may remain in a "general" classification, which permits them to explore a variety of possible major fields of study.

Major Requirements. The departmental requirements are stated under the respective curricula in part 5.

College of Mines and Earth Resources

Robert W. Bartlett, Dean (321 Mines Bldg.; 208/885-6195); Robert L. Hautala, Associate Dean.

The College of Mines and Earth Resources (then called "School of Mines") was established in 1917 as an administrative unit of the university. Academic departments in the college comprise the Departments of Geography, of Geology and Geological Engineering, and of Metallurgical and Mining Engineering, and three other administrative divisions, the Glaciological and Arctic Sciences Institute, the Cart-O-Graphics Laboratory, and the Idaho Mining and Mineral Resources Research Institute. The Idaho Geological Survey, the director of which also serves as the dean of the college, is an affiliate program.

The college is concerned with all aspects of earth science and technology, and the course and curricular offerings have expanded considerably since the college was founded. Following is a list of the academic degrees that have been conferred in the various disciplines; the date following each is the year in which this degree was first conferred. Cartography (B.S. 1980); mining engineering (B.S. 1918, M.S. 1918, Ph.D. 1972); metallurgy, until 1934 (B.S. 1922, M.S. 1920); metallurgical engineering (B.S. 1935, M.S. 1936, Ph.D. 1973); geology (B.S. 1912, M.S. 1922, Ph.D. 1964); geological engineering (B.S. 1935, M.S. 1940); geography (B.S. 1958, M.S. 1968, Ph.D. 1989); hydrology (M.S. 1970).

In addition to the advanced degrees listed above, the College of Graduate Studies offers courses leading to these degrees: Master of Arts in Teaching with majors in geography and earth science and Master of Natural Science with a major in earth science.

Equipment and Facilities

Metallurgical Engineering. Equipment is available for a broad range of laboratory procedures commonly used in both extractive

and physical metallurgy/materials. Students can carry out bench scale tests on ores to crush, grind, screen, and separate mineral values from them using flotation, magnetic separation, leaching, or other techniques. Assaying equipment is available, from fire assaying to state-of-the-art atomic absorption spectrophotometers and an ion chromatograph.

Students also experience hands-on opportunities to prepare both metallic and ceramic materials. Bench scale apparatus is available to fabricate these materials from powders, and to observe the microstructures of these and other bulk materials using standard metallographic techniques. Both hot and cold isostatic presses are available for consolidation, and annealing furnaces as well for densification. In addition, pilot scale work is being carried out using emerging plasma technologies to prepare materials.

The elemental content of materials fabricated using such techniques can be determined using an energy dispersive X-ray fluorescence unit, and their structures can be determined using powder X-ray diffraction techniques and single crystal techniques. A state-of-the-art transmission electron microscope is available to observe the internal structural details of these materials at magnifications approaching atomic dimensions. Equipment is also available for mechanical testing and for electrochemical corrosion studies.

Mining Engineering. The mechanical properties of rock are of major importance to mine engineers for designing both surface and underground mines that provide a safe working environment. A rock mechanics laboratory is maintained for determining these properties. It consists of a large capacity tension/compression testing unit, and associated strain measuring and recording equipment.

Of equal importance is the basic design of mines. Computer systems, consisting of high speed work stations, are available to assist the engineer in the design process, using expert systems that give the engineer a powerful tool for this process. Such systems permit the engineer to design the most economical and operationally efficient plan for entry into the mine, for removal of ore, transportation of workers, and for ventilating the mine.

Geology and Geological Engineering. Laboratories are maintained for work in all of the basic courses, with large study collections of fossils, rocks, minerals, crystal models, ore suites, thin sections, polished sections, and topographic and geologic maps.

Equipment used in advanced courses includes rock sawing and polishing facilities, binocular microscopes, reflection and polarizing microscopes, photomicrographic apparatus, x-ray diffraction and fluorescent equipment, and an atomic absorption spectrophotometer. The electron microprobe of the Idaho Geological Survey is available to advanced students. Also available are computers, proton magnetometers, resistivity survey equipment, a 12-channel seismograph, a gravity meter, an EDM survey unit, soil drilling and sample kits, water-level recorders, and other geophysical and hydrological equipment. Geological engineering also shares strain testing and other apparatus with mining engineering in the Geological Engineering/Mining Engineering Rock Mechanics Laboratory.

Research laboratories are equipped for work in applied geochemistry, economic geology, paleontology, photogeologic analysis, remote sensing, engineering geology, hydrology, and soil testing. Facilities for research in hydrology are also available in other divisions of the university.

Through the Glaciological and Arctic Sciences Institute, cooperative facilities for field training and research in British Columbia and Alaska are available in the disciplines of mining and exploration geology, geophysics, terrestrial photogrammetry, field surveys and mappings, geomorphology, and glaciology.

Geography. The department's main laboratories are the surrounding regions, in sequence of increasing size: The Palouse, The Inland Empire, and The Pacific Northwest. There are now about 124,000 maps, numerous atlases, and 40,000 aerial photographs of Idaho in the University Library's collection. The library is a regional depository for federal documents including numerous data files on CD-ROM. Three separate laboratories are maintained in the department for teaching and research in cartography, geographic information systems (GIS), and remote sensing. The GIS laboratory has ARC-INFO on HP work stations, PC ARC-Info on IBM-compatible PCs, Map II on McIntosh machines, digitizers, plotters, and scanners. ERDAS, a digital image analysis package, is available on two PCs in the remote sensing laboratory. Additional PC-based and mainframe computing are provided through the university's Computer Services facilities.

Cart-O-Graphics, the Department of Geography's graphics laboratory, offers design, drafting, and reproduction services for maps and other graphics to illustrate research reports and other publications while providing work experience for students. Although this laboratory primarily serves the university's needs, it also serves other agencies in the state and region.

Scholarship and Loan Funds

Students interested in scholarships, and who have been admitted to UI with a declared major in one of the College of Mines and Earth Resources' programs, should refer to the "Financial Aid" section in part 2 of this catalog. The following scholarships, with an annual award total of over $270,000, are available to qualified College of Mines and Earth Resources' students: Barbee Endowment, Caldwell, Coal Division, Featherstone, Fitzgerald, Furjanic, Gilbert Western, Harrison, Haynes, Howard, Idaho Mining Memorial, Larsen, Magnuson, Minerals Industry, Mines Out-of-State Tuition Waivers, Newton, Northern Engineering, Oscarson, Pothier, Savage, Smith, Staley, Stearns, Sunshine Women's, and Zeigler. Details on specific requirements to apply for one of these awards can be obtained by writing to: Associate Dean, College of Mines and Earth Resources, University of Idaho.

Idaho Geological Survey

Robert W. Bartlett, Director (206 Mines Bldg.; 208/885-6195); Earl H. Bennett, Associate Director and State Geologist (228 Morrill Hall).

The Idaho Geological Survey, by its statutory mission, is the state of Idaho's lead agency for the collection, interpretation, and dissemination of all scientific information on the geologic and mineral resources of the state. Administratively it operates in special program status at the University of Idaho with its director also serving as dean of the College of Mines and Earth Resources. As such it performs applied field and laboratory research and serves the university, the mineral and other industries, and the general public by publishing the results of its many programs and by answering correspondence and offering consultation. Analytical work with sophisticated instrumentation is a major part of all services offered.

Cooperative work between the survey and the educational programs of the College of Mines and Earth Resources and with other state and federal agencies, particularly the U.S. Bureau of Mines and the U.S. Geological Survey, enhances the overall work of the college and the survey. The staff and that of the College of Mines and Earth Resources share equipment, as well as the specialized expertise of both groups. Survey personnel, who are experienced in both applied and academic areas, are available to any department of the university for advice, consultation, and occasional lecturing. Whenever possible, students in the College of Mines and Earth Resources are offered part-time or summer work as assistants to survey professionals, frequently on projects that are funded by grant monies available for some programs. High quality graduate student dissertations, when in accord with the survey's mission and with proper permission, may be published in one of the several survey formats.

Although equipment used by the survey is housed both in the Mines Building and Morrill Hall, the principal business office of the survey and most survey personnel is located in Morrill Hall. Branch offices are located in Boise and Pocatello. At the Moscow office, the survey maintains a publication sales service, including the sale of

topographic maps published by the U.S. Geological Survey; this is a service used extensively by the academic community and the general public. The survey also maintains a collection of references pertinent to the geology and mineral resources of Idaho, in Morrill Hall and available to the public. The University Library is a repository for the many valuable American and worldwide publications received through the bureau's publication exchange program.

The survey has been housed at the university since it was originally established in 1919 under the name Idaho Bureau of Mines and Geology.

Idaho Mining and Mineral Resources Research Institute

Robert W. Bartlett, Director (206 Mines Bldg.; 208/885-6195)

The institute was established in August 1977 under Title III of Public Law 95-87, which provides for an annual appropriation by the secretary of the interior to assist the various states in maintaining mineral resource research centers. These centers are generally located at land-grant institutions that have schools of mines.

As a division under the university, the Idaho Mining and Mineral Resources Research Institute (IMMRRI) has its headquarters in the office of the dean of the College of Mines and Earth Resources. The institute has a teaching, research, and service mission aimed at the solution of a variety of mineral-related problems affecting the state and the nation today and in the future.

The work of IMMRRI commonly involves problems that are too complex to be solved by one person; a team approach is taken that combines the knowledge and skills of specialists from several disciplines including metallurgy, mining engineering, geology, geophysics, hydrology, and minerals geography, and involves consulting scientists and engineers from other disciplines. The scientific data and information derived by the institute lead environmentally sustainable recovery and use of diverse and valuable mineral resources of the state of Idaho and the nation.

Glaciological and Arctic Sciences Institute

Maynard M. Miller, Director (206 Cont. Ed. Bldg. and Geology Dept., Mines Bldg.; 208/885-6382).

The institute was established at the university in 1975 by the Board of Regents to promote field involvement learning and research participation of undergraduate and graduate students, as well as cooperative field research with senior scientists in the arctic and mountain geosciences and allied environmental field science. Both formal and directed study field courses are given on the Juneau Icefield on the Alaska-B.C.-Yukon border, operating out of a series of field stations provided by the Foundation for Glacier and Environmental Research at the Pacific Science Center, Seattle, Washington. The academic program is cooperative with the University of Alaska-Southeast. The National Science Foundation, the U.S. Army Reserve Office, and other agencies have provided substantial participantship support in recent years. The field training is interdisciplinary in nature and international in scope. It also conducts on-going field research in the mountains of the Pacific Northwest and in the Nepal Himalaya. Areas of interest are field and exploration geology, exploration geophysics, glaciology, Pleistocene stratigraphy, glacial and periglacial geomorphology, arctic geobotany, remote sensing, and allied areas of atmospheric sciences and survey and mapping. The summer field session runs for eight consecutive weeks during July and August. Upwards of 50 students participate, including undergraduate and graduate students, and a select number of high ability high school juniors and seniors advance placement. The institute houses a polar research library on campus and a documents and archives center to facilitate references to scientific data from its field programs. Opportunities for graduate thesis work are available with a faculty/student ratio of nearly one-to-one.

Teacher Education Program

Students in the College of Mines and Earth Resources who are preparing for secondary-school teaching should consult the College of Education section in part 4.

General Requirements and Undergraduate Curricula

University Requirements. See regulation J in part 3 for the all-university requirements for graduation.

Electives. A list of acceptable electives may be consulted in the office of each head of department and adviser in the college. Electives must be approved by the head of department or the adviser involved.

Major Curricula. As specified in part 5, the programs of study in this college require 128 to 136 credits. The curricula include the departmental and general requirements as set forth above.

University Honors Program

Daniel G. Zirker, Director (102 Psych. Bldg.; 208/885-6147); Stephan P. Flores, Associate Director.

The University Honors Program is open to students from all undergraduate colleges and majors. The great majority of students will be able to participate in the program without adding to the total number of credits needed for graduation.

The program director and associate director act as supplemental academic advisers to all students qualifying for honors study. Honors students can anticipate a more challenging general educational experience than would otherwise be available to them. Most honors classes are small, and honors students thus profit from close intellectual contact with their instructors and fellow students. Honors students are expected to write more, think more, and discuss more than their counterparts in non-honors courses. An attractive Honors Center facility is available for use on both a formal and informal basis.

Admission

Incoming freshmen are invited to participate in the program on the basis of their high school record and standardized test scores (ACT or SAT). Admission is selective. Students receiving at least a 28 ACT composite score OR a 1200 SAT combined verbal and math score OR a 3.7 high school grade-point average are invited to apply. In addition, students applying must respond in writing to two essay questions. Students who do not meet the standardized test or GPA criteria can write the honors director explaining their interest in the program and their reasons for seeking admission. In these cases, in addition to the two written essays, two former teachers must send letters of recommendation to the director. Students who demonstrate superior performance during their first semester at UI (achieving a minimum 3.5 GPA) may also apply for admission at the end of that semester. Transfer students are considered for admission on a case-by-case basis; students in good standing in an honors program at their previous school are automatically admitted. Their transcripts will be evaluated and appropriate credit given toward the honors certificate (see below).

General Requirements

All honors students work toward completing a minimum of 30 credits in honors courses, satisfying requirements within specific subject areas. Full information on specific course requirements is available from the Honors Program Office. To remain a member in good standing, honors students must take at least one honors course every third semester and maintain a minimum 3.0 cumulative grade-point average.

Honors Certificate

The honors certificate is awarded to all students who (1) complete the prescribed 30 credits in honors courses, (2) satisfy all other university and departmental requirements for graduation, and (3) achieve a minimum 3.0 GPA for all honors credits taken. Only students participating in the University Honors Program may earn an honors certificate, and only credits taken in the program count toward the certificate, with exceptions made only by special permission of the director. Students in the program will have all honors credits indicated as such on their permanent transcripts, even if they do not complete the full 30 credits required to earn a certificate.

Academic Major

Students participating in the University Honors Program must satisfy all requirements for their respective majors. Because a prime emphasis of the program is to provide intensive and broad exposure to a variety of academic fields, students will find that over half the honors courses will satisfy the various categories in UI's general education core requirements. The other credits required for the certificate sometimes satisfy requirements for departmental majors, and all credits count toward the total required for graduation.

Suggestion to Prospective Students

Most prospective honors students are contacted during the senior year in high school and invited to join the program. Nevertheless, it is possible that highly qualified students, especially those who apply to the university during the summer or just before registration, will be overlooked. Any student who is interested in honors study and who thinks he or she would qualify for admission is urged to write the director or drop by the program office.

Cooperative Programs

The university participates in a number of cooperative arrangements in the state and region to extend resources and take advantage of special facilities.

Washington State University

Located only eight miles apart, the University of Idaho and Washington State University, in order to take advantage of unique strengths of each institution, have for some time operated a cooperative graduate and undergraduate course program. Courses available on either campus are identified in departmental listings, and offerings are listed in the Time Schedule. In addition, the two schools cooperate in programs in medicine, veterinary medicine, and food science and technology.

Medical Education (WAMI Program)

Michael B. Laskowski, Director, WAMI (Washington, Alaska, Montana, Idaho) Medical Education Program (304 Student Health Services Bldg. 83844-4207; phone 208/885-6696; e-mail glorial@osprey.csrv.uidaho.edu). Faculty: Gregory A. Bohach, Mark E. DeSantis, Victor P. Eroschenko, Dale O. Everson, Bruce Ham, Thomas Jackson, Fredy E. Martinez, Thomas A. McKean, Dona Merrell, Scott A. Minnich, Philip J. Mohan, Mary Presol, William Trumble, Chris Williams.

The following medical doctors serve as affiliate clinical professors (preceptors) of medical science: Malini Ariyawansa, Eugene M. Baldeck, Janice Boughton, Lennis Boyer, Patricia Brady, Harry Chinchinian, Steven J. Cox, E. Wayne Day, Stacey R. Dean, Richard B. Donati, Richard J. Eggleston, Richard A. Emtman, Stamey English, H. Timothy Flock, Graeme French, Alvin L. Frostad, Catherine M. Gorchels, John Grauke, Bruce L. Ham, Lawrence Hammond, John Harris, Cameron D. Hinman, Bonnie L. Houff, Martha K. Hunt, Jay A. Hunter, Thomas Jackson, Charles Jacobson, Marvin Kym, Wenzel A. Leff, Joyce Majure, Fredy E. Martinez, Barbara Martyn, Dan McIntosh, Marsha McKay, Carl M. Melina, Homa S. Memon, Margaret Miller, C. Michael Murphy, Steve Ozeran, Lloyd E. Perino, Dennis L. Peterson, Michael T. Rooney, Wayne Ruby, David Rych, Daniel Schmidt, David D. Shupe, Dennis Simpson, Francis K. Spain, David A. Spencer, David N. Spencer, John R. Stoianoff, Robert W. Tulin, Scott Tyler, Malcolm Winter.

WAMI is a cooperative medical education program designed to enhance the training capability of the University of Washington School of Medicine (UWSM) by utilizing the facilities of Washington State University (WSU), University of Alaska, Montana State University, and the University of Idaho (UI). The WAMI program utilizes the physicians' expertise in the states by providing clinical clerkships in the four-state area via a network of 23 community training units for third- and fourth-year medical students. The WAMI program at UI offers first-year medical students an ideal opportunity to study basic medical courses. Because of the small class size, there is a splendid opportunity to interact closely with the faculty.

The WAMI program allows access to medical education for Idaho residents by providing positions at UWSM that are reserved exclusively for Idaho residents. Beginning in 1994, 16 first-year students are admitted annually.

The WAMI program was developed in Idaho to train Idaho residents in medical studies, to address the need for more primary care physicians practicing in rural areas, to extend the resources and facilities of an excellent medical school into Idaho, to improve the quality of patient care, and to minimize the cost of medical education by the use of existing facilities.

Eligibility for consideration as a WAMI medical student requires certification as an Idaho resident. UI's Admissions Office is responsible for residency certification.

Students interested in WAMI apply directly to UWSM. Idaho residents take their first year of medical studies at UI. First-year courses are offered conjointly by UI and WSU in parallel with courses at UWSM. All participating faculty at UI and WSU are subject to the approval of UWSM and are eminently qualified scientists and scholars.

Many of the physicians in the Moscow-Pullman-Lewiston area are involved in the preceptorship program in which the students work with local physicians and observe their practice in the office and at the hospital.

Since 1972, community clinical units in Boise and Pocatello have been training upper-division medical students in the areas of obstetrics and gynecology, pediatrics, and family medicine. A UWSM clerkship in internal medicine is also offered through the V.A. Hospital in Boise.

Special facilities are maintained for the medical students, including individual study carrels, videotapes, films, and other resource materials in a Curriculum Support Center.

Participants in the WAMI program are matriculated students of the University of Washington Medical School. Upon completion of their studies, they receive the M.D. degree. Following graduation, a postgraduate (internship/residency) training period of three to five years is considered the normal pathway to private practice. Medical students may also be approved for graduate studies at UWSM leading to the M.S. or Ph.D. degree. The M.D.-Ph.D. curriculum usually requires a minimum of six years of study.

Veterinary Medical Education (WOI)

The University of Idaho cooperates with Washington State University and Oregon State University in a program of veterinary medical education, research, and service. When accepted in the WOI program, students from Idaho take the first three years and most of their fourth year of professional training in veterinary medicine at Washington State University. In the fourth year of the program, students also receive part of their training at the UI Caine Veterinary Teaching Center at Caldwell, Idaho, where they can specialize in food animal production medicine. Cooperative graduate programs leading to M.S. and Ph.D. degrees are also available. Idaho students seeking to enter the professional program must complete a Washington State University Uniform Undergraduate Application Form as well as a WOI Program application. Both may be obtained from and returned to the Office of Student Services, College of Veterinary Medicine, Washington State University, Pullman, Washington 99164. In addition, Idaho applicants must secure certification of Idaho residency status by completing and submitting the appropriate residency certification forms available through the University of Idaho Admissions Office.

AWU Program

The university is a member of Associated Western Universities, which is a cooperative venture of certain institutions to make use of national laboratories located in the west. Financial support is available from the U.S. Department of Energy for graduate students and faculty to spend periods of time, up to one year, pursuing research projects at a number of these laboratories.

Interuniversity Program in Public Administration

Florence A. Heffron, Department of Political Science and Public Affairs Research (205 Admin. Bldg.; 208/885-6120).

The University of Idaho, with Idaho State University and Boise State University, offers a cooperative graduate program leading to the M.P.A. degree to provide present and prospective public administrators with a professional education and to prepare them to understand and adjust to a changing and challenging environment. Courses in core areas and in optional areas of emphasis, such as general public administration, natural resources administration, public works administration, and public finance, management, and budgeting, may be taken at any of the participating institutions without restriction. For further information, consult the Department of Political Science and Public Affairs Research.

Continuing Education

Continuing education programs at UI are divided into several classifications, each separately administered: credit courses, independent study, video outreach, noncredit classes, and workshops, shortcourses, and conferences. Each college is responsible for the development of continuing education programs based on the needs that are identified.

Credit Courses. These courses offer University of Idaho credit and are available throughout the state within the limitations indicated above. Usually a minimum of 13 students is required to offer a course, and more may be needed if instructor travel is required. In northern Idaho, courses are more commonly taught by members of the resident faculty commuting from the Moscow campus. In locations distant from the home campus, local instructors who are fully qualified may be employed subject to approval of the respective college in which the course is offered.

Generally, no single catalog of continuing education courses is available before the beginning of a semester. Instead, it is simply noted that nearly any course in the university catalog may be offered provided that an adequate number of students, a qualified instructor, and appropriate facilities are available. The schedule of courses in any geographic area is developed near the beginning of each semester and summer session. Each college is responsible for identifying and developing the courses needed, registration of students, and the administration of these programs. Individuals interested in taking courses for credit should directly contact the respective college to determine the courses available in their geographic area.

Admission procedures for enrolling in continuing education courses are streamlined. Generally, it is possible to register for a course at the time of the initial class session. In some cases to guarantee in advance the offering of a course, advance registration may be requested. Standards for admission to these courses are usually the same as for admission to credit courses on campus. Students in residence must have approval of their college before enrolling in additional credit courses.

Independent Study in Idaho. Many UI courses are also offered through the Independent Study in Idaho Office. Each course parallels its campus counterpart in content and credits and may be started at any time, with one year allowed for completion. Most institutions limit the amount of correspondence study applicable toward a degree. For UI limitations, see regulation J-5 in part 3. A student currently enrolled at an institution of higher learning should receive written permission from his or her dean before registering for a correspondence study course. Correspondence grades are not computed in the student's grade-point average at UI.

For a catalog that contains further information on procedures, enrollment forms, and a complete listing of college, high school, and noncredit courses, write, call, or stop by Independent Study in Idaho, Continuing Education Bldg. Room 201 (telephone 885-6641).

Noncredit. The Community Enrichment Program office develops and administers the noncredit courses for the UI campus, Moscow, and the surrounding communities. During the fall, spring, and summer terms, over 100 classes are offered per semester with enrollments each year of over 6,000 participants, including children, youth, and adults. The program consists of classes in the arts, dance, music, recreation and hobbies, languages, health and fitness, homeschooling, foods and cooking, humanities, self-improvement, nature and the environment, computers, and career development. Programs are developed with consideration given to the needs and desires of the general public, as well as to the economic times. Each class and instructor is independent in content, teaching style, duration, and fees; however, all have the common bond of extending the opportunities and resources of the university to the surrounding area. Classes are held both on campus and in the business community. These evening and weekend classes are scheduled to complement the working person's schedule.

Continuing Education and Public Service. For professionals, career-long learning is essential. With the immense increase in knowledge and information, there is great need for opportunities to keep up to date on current issues and developments. UI's Continuing Education and Public Service (CEPS) fulfills that need by working with academic units to initiate continuing professional education programs that extend the university's resources to external constituencies.

For further information, write or call the Office of Continuing Education and Public Service, University of Idaho, Moscow, Idaho 83844-3223 (208/885-6237).

Elderhostel. Each summer UI offers one Elderhostel week in Moscow, where Elderhostelers combine educational classes and recreation. Inspired by youth hostels and folk schools of Europe and guided by the needs of older citizens for intellectual stimulation and physical adventure, Elderhostel is for elder citizens on the move—not just in terms of travel, but in the sense of reaching out to new experiences. Elderhostel is based on the belief that retirement does not have to mean withdrawal, but rather that one's later years are an opportunity to enjoy new experiences.

Elderhostel programs are available at over 1,000 colleges, universities, independent schools, and other educational institutions in the U.S. and abroad. Those 60 and over are eligible for this program, which costs approximately $300 per week for classes, room, board, field trips, and entertainment.

For a catalog of schools and classes, write: Elderhostel, 75 Federal Street, Third Floor, Boston, MA 02110-1941. For more information about UI Elderhostel, call the Community Enrichment Program (208/885-6486).

Resident Instructional Centers

Boise Center for Higher Education

Roger L. Reynoldson, Director, UI/Boise Center for Higher Education (800 Park Blvd., Suite 200, Boise, Idaho 83712; 208/334-2999).

The University of Idaho Boise Center was established to serve certification and graduate program needs for persons involved in elementary, secondary, higher education, and engineering within Boise and the adjacent areas. Certification programs are available in adult, counselor, and technology education, educational administration, and special education administration.

Graduate programs in education include the master's and doctorate with an emphasis on vocational teacher education, educational administration, and adult education. Sixth year professional programs may be completed in educational administration, special education, and vocational teacher education. Graduate programs in counseling include a master's degree with an emphasis in rehabilitation counseling and a specialist program in school psychology.

The Boise Center also houses the College of Engineering–Boise. The Boise Center offers outstanding graduate engineering instruction, research, continuing education, and outreach services for individuals and businesses in the Treasure Valley. The focus of educational activities is on innovative master's and doctoral programs uniquely suited for the engineer in industry or full-time students. Externally funded research is solicited from both government and industry sources, with an emphasis on application of advanced design and manufacturing processes. Thesis topics and projects for degree requirements can be tied to ongoing industry activity. Short courses in specialized areas are provided to help practicing engineers gain additional skills and stay professionally current. The following degree programs are available using a combination of resident faculty and video courses: Agricultural, Biological Systems, Civil, Computer, Electrical, and Mechanical Engineering (M.Engr., M.S., Ph.D.) and Engineering Management (M.Engr.).

Persons representing a variety of University of Idaho programs are housed in the Boise Center. They include: College of Agriculture communication specialists, an agricultural education supervisor, a human nutrition specialist, the college's regional office for off-campus research and cooperative extension programs, the regional development director for Vandal Boosters, the assistant director of Alumni Relations, the associate director of New Student Services, the project coordinator for ICDD, the special assistant to the president's office, the statewide staff development coordinator for Adult Basic Education, the director of the Quality Learning Project, and a professional staff development program for school administrators, the Idaho Administrators' Assistance Center.

Coeur d'Alene Center for Higher Education

Jack Dawson, Director, UI/Coeur d'Alene Center for Higher Education (925 W. Garden Ave., Coeur d'Alene, Idaho 83814; phone 208/667-2588, FAX 208/664-1272; UserID CDA).

Land-grant universities nationally were created to "bring education to the people." The University of Idaho Coeur d'Alene Center was created to bring UI programs to the people of northern Idaho. Established in 1981, the center has continued to expand services to meet the educational demands of a dynamic, growing area of the state. Currently, students can finish various degrees in education without ever leaving the Coeur d'Alene area.

The College of Education programs include bachelor's degrees in elementary education and K-12 physical education; graduate degree in education, educational administration, counseling and human services, vocational education, two specialist degrees, and a special education endorsement. The College of Education also offers a bachelor's degree in industrial technology with an emphasis in safety. Region I school districts' staff members take advantage of the center's continuing education courses for state recertification.

In addition to complete programs offered live at the UI center located on the North Idaho College campus, UI also offers correspondence study and video outreach. Both of these programs have grown substantially in the past several years, confirming there is an increasing demand for services to the distance learner. The center is linked with other educational offerings and opportunities by satellite, microwave, compressed video, and Internet. The Thomas O. Bell New Century Classroom demonstrates the use of technology, math, science, and engineering education, and showcases the latest technology, curricula, and pedagogy. Idaho Water Resources Research Institute maintains an office through the center.

The University of Idaho Coeur d'Alene Center is dedicated to the practical realities of the university's land-grant mission to serve the people of northern Idaho. Through its degree programs and technology and research centers, the center strives to meet the demands of our changing times.

University of Idaho at Idaho Falls

Fred S. Gunnerson, Director, UI at Idaho Falls (P.O. Box 50778, 1776 Science Ctr. Dr., Idaho Falls, Idaho 83405; 208/526-1388).

The University of Idaho at Idaho Falls began evolving in the early 1950s in support of the atomic energy research at the National Reactor Testing Station It has developed into a general education center for the Idaho Falls area administered by the University of Idaho. Supported in part by funds provided by the U.S. Department of Energy, the center provides undergraduate and graduate degree programs. The program is administered by a resident director who reports to the provost. Through the center students holding undergraduate degrees may earn UI master's degrees in interdisciplinary studies, computer science, industrial safety, mathematics, metallurgy, engineering, environmental science, hydrology, and engineering management. Also through the center, Ph.D. degrees in electrical, mechanical, civil, chemical, nuclear, and metallurgical engineering, and computer science may be obtained.

In addition to the graduate degrees, students may earn bachelor's degrees in technology, computer sciences, and general studies. Awards of Proficiency are also offered in many different areas. These certificates recognize the successful completion of approximately 30 semester credits in a particular discipline.

The center offers approximately 100 courses and enrolls approximately 5,000 students each semester.

Engineering Outreach Program

Barry D. Willis, Director of Engineering Outreach /Professor of Education (40 Janssen Engr. Bldg. 83844-1014; phone 208/885-6373; e-mail outreach@uidaho.edu).

The Engineering Outreach Program delivers course work by videotape, satellite, computer, and interactive videoconferencing to students throughout Idaho, the United States, and the world. Participating programs lead to master's degrees in biological and agricultural engineering, civil engineering, computer engineering, computer science, electrical engineering, engineering management, geological engineering, mechanical engineering, psychology with an emphasis in human factors, and teaching mathematics. Other courses are offered through the program in chemical engineering and mathematics/statistics. In addition, the program offers a limited number of noncredit short courses.

For the majority of courses, regular on-campus classes are videotaped in special studio classrooms. Copies of these videotapes, together with the handouts provided by the instructors, are shipped to students once a week to their homes or workplaces. These courses are also available for shared viewing at the University of Idaho Resident Instructional Centers in Boise, Coeur d'Alene, and Idaho Falls.

Examinations are sent to examination proctors, typically the training directors or supervisors of the students. Students may consult with instructors through a toll-free telephone number, FAX, electronic mail, or interactive videoconferencing where available. Descriptions of courses to be offered are included in a semester schedule that may be obtained from the Engineering Outreach office upon request or via the World Wide Web address below.

Requirements and policies for the courses and degrees offered through the Engineering Outreach Program are the same as for on-campus students and are explained in the free *Engineering Outreach Graduate Handbook*. Students should consult the academic

departments for academic advising and information not covered in the handbook.

	Registration Deadline	Registrations Accepted Until	Course Completion Deadline
Fall 1997	August 15, 1997	August 22, 1997	January 2, 1998
Spring 1998	January 2, 1998	January 9, 1998	May 29, 1998
Summer 1998	May 29, 1998	June 5, 1998	August 14, 1998

For further information contact Engineering Outreach, University of Idaho, Moscow, ID 83844-1014. Phone (208) 885-6373, FAX (208) 885-6165, e-mail outreach@uidaho.edu, or access the Engineering Outreach Web page (http://www.uidaho.edu/evo/).

Summer Session

Sid Eder, Director of Summer Programs and Extended Learning (116 Continuing Ed. Bldg.; 208/885-6237).

A fourteen-week summer session begins about the third week in May. The flexible summer schedule includes a three-week early session, two four-week terms, two six-week terms, an eight-week term, and a three-week post-session. During any of the terms, many courses are accelerated into one-, two-, or three-week concentrated sessions. Many recreational and cultural activities are scheduled through the Campus Recreation Office and the Outdoor Programs Office, as well as programs presented through the Hampton School of Music and the Department of Theatre Arts. Special pre-college programs for elementary, junior, and senior high school students are also available in several departments.

Academic regulations included in this catalog are applicable during the summer session. Anyone interested in enrolling is invited to write the Summer Session Office for a copy of the summer catalog that is published each year in March. The catalog contains complete information needed to register for the summer session. For more information, call (208) 885-6237.



Department of Accounting

Marcia S. Niles, Associate Dept. Chair (209-G Admin. Bldg. 83844-3169; phone 208/885-6453). Faculty: Teresa P. Gordon, Jeffrey L. Harkins, Win G. Jordan, J. David Malone, Marla A. Myers, Marcia S. Niles, Dan Swenson, Glen G. Utzman, Jerry L. Wegman. Adjunct Faculty: John L. Farbo.

The goal of the accounting program is to prepare graduates to enter the accounting profession in public accounting, industry, or the public sector. The program develops and enhances a student's thinking, judgment, and communication skills, while providing a sound technical foundation.

The department offers two degrees, a bachelor of science in business and a master of accountancy.

The 128-credit bachelor's degree in accounting has a managerial or controllership emphasis, designed to prepare students for professional positions as employees. Graduates are qualified for jobs as cost accountants, as accountants within a governmental unit, as production accountants for a manufacturer, as project managers, or as internal auditors.

The master of accountancy degree requires 30 credits beyond the bachelor's degree, and is designed to meet the 150-credit requirement for taking the CPA examination in Idaho. Completion of this degree qualifies students to enter the public accounting profession in auditing, tax, or other positions ultimately requiring a CPA license.

Courses

See part 6 for courses in Accounting (Acct) and Business Law (BLaw).

Curricular Requirements

ACCOUNTING (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3) with the limitation that accounting majors must take Anth 100, Soc 101, or Psyc 101 for the social science requirement, the general requirements for graduation from the College of Business and Economics (see part 4), and:

Acct 300 Accounting Concepts & Systems 3
Acct 301 Corporate Accounting & Reporting 3
Acct 305 Accounting Information Systems 3
Acct 385 Cost & Management Accounting 3
Acct 492 Auditing & Controls 3
Accounting electives chosen from the following 9
- BLaw 420 Commercial Law
- Acct 430 Accounting for Public Sector Entities
- Acct 483 Federal & State Taxes I
- Acct 484 Federal & State Taxes II
- Acct 486 Contemporary Management Accounting Issues
- Acct 490 Advanced Corporate Accounting & Reporting

Math 160, 161 Survey of Calculus or 170, 175 Analytic Geom & Calculus 8
One of the following courses 3
- CS 101 Introduction to Computer Science
- CS 112 Introduction to Problem Solving & Programming
- Phil 210 Critical Thinking
- Phil 211 Introduction to Symbolic Logic

Electives to total 128 credits for the degree ..... —

Division of Adult, Counselor, and Technology Education

Jerry L. Tuchscherer, Div. Director (210 Educ. Bldg. 83844-3083; phone 208/885-6556; e-mail acte@uidaho.edu; http://www.uidaho.edu/ed/acted).

Adult Education Faculty: Jack J. Kaufman, Jerry McMurtry, G. Cleve Taylor, Michael E. Tomlin, Linda M. Wise Miller, Martha C. Yopp.

Business Education Faculty: Terri E. Hatch, Linda M. Wise Miller, Martha C. Yopp.

Counseling and School Psychology Faculty: Ernest Biller, Thomas N. Fairchild, Jerome H. Fischer, Dianne L. Phillips-Miller, Thomas V. Trotter, Jerry L. Tuchscherer. Adjunct Faculty: William Gibson, W. Harold Godwin, Debra Goldfine, Martha A. Kitzrow, James D. Morris, Charles R. Morrison, Bruce M. Pitman, Joan Pulakos, Steve A. Saladin, Laurie Wilson.

Rehabilitation Counseling Faculty: Jerome H. Fischer.

School Psychology Faculty: Thomas N. Fairchild, Thomas V. Trotter. Adjunct Faculty: A. Lee Parks.

Technology Education Faculty: James M. Cassetto, Charles F. Schoeffler.

Vocational Teacher Education Faculty: Ernest Biller, James M. Cassetto, James J. Connors, Glenn A. Edmison, Yvonne S. Gentzler, Jack J. Kaufman, Jerry McMurtry, Linda M. Wise Miller, John Mundt, Timothy H. Murphy, Douglas A. Pals, Lou E. Riesenberg, Cynthia J. Schmiege, Charles F. Schoeffler, G. Cleve Taylor, Jerry L. Tuchscherer, Martha C. Yopp.

The professional degree majors in adult, counselor, and technology education provide both the opportunity and relevant skills to enable teachers, administrators, counselors, and business and industry personnel to work effectively with today's industries, youth, and adults. Students benefit from the realistic relationships between course work and occupational competencies required by educational institutions, business, industry, agriculture, and family life.

Preservice teaching degree majors are offered in: business education (B.S.Bus.Ed.), marketing education (B.S.Bus.Ed.), office occupations education (B.S.Bus.Ed.), technology education (B.S.Ed.), and vocational education (B.S.Ed.) in the College of Education; and agricultural education (B.S.Ag.Ed.) and child, family, and consumer studies (family life education option) (B.S.F.C.S.) in the College of Agriculture. (See Admission to Teaching Education Program.)

For all undergraduate teaching degrees listed below the student should consult an adviser concerning state requirements for the vocational education certificate.

Two nonteaching undergraduate majors are available in office administration (B.S.O.Ad.) and technology (B.S.Tech.) through the College of Education for students who wish to capitalize on their secretarial and office management skills and technical and professional skills in industry or business.

Agricultural Education. Graduates with this degree (B.S.Ag.Ed.) are qualified for a standard secondary teaching certificate and are qualified to teach secondary agricultural science and technology. Schools, government, and agribusiness agencies that seek persons with training in agriculture and education provide employment opportunities for graduates of this curriculum. (See Agricultural and Extension Education for program and course descriptions.)

Business Education. This major (B.S.Bus.Ed.) is for students whose primary interest is teaching business education at the secondary level. Also available at the undergraduate level is a degree in Office Administration (B.S.O.Ad.). Students electing this major generally choose careers in office administration and related office and business positions.

Marketing Education. This major (B.S.Bus.Ed.) is for students whose primary interest is in teaching marketing, merchandising, and management at the high-school or postsecondary level.

Family Life Education. Family life education (B.S.F.C.S.) is offered through the Margaret Ritchie School of Family and Consumer Sciences. (See Family and Consumer Sciences for program and course descriptions.) The program prepares students for teaching child, family, and consumer issues is the public schools, in community settings, or to business audiences. Graduates of the major include teachers in public and private institutions either at the secondary or postsecondary level as well as private agencies.

Technology Education. The undergraduate program in technology includes two degree programs. One is the Bachelor of Science in Technology (B.S.Tech.), which prepares students for technical and professional careers in industry or business. The other (B.S.Ed.) is a degree with a major in technology education and provides opportunities for students to develop skills in several technical teaching areas and also prepares them for certification as technology teachers in the secondary schools.

Vocational Education. A degree in vocational education (B.S.Ed.) is designed primarily for teachers in area vocational schools and secondary trade and industry programs who do not hold degrees. It does not qualify one for teaching in a public K-12 system unless a person also holds a secondary endorsement or a vocational specialist certificate.

Vocational Certification. In collaboration with the Idaho State Division of Vocational Education, sequential inservice undergraduate vocational education degree courses, as well as selected graduate vocational courses, are offered each semester at area vocational/technical schools located at Coeur d'Alene, Lewiston, Boise, and Twin Falls.

Graduate Education/Counseling and School Psychology. The counseling program offers course work at the master's level for individuals seeking preparation as counselors in school, community, and rehabilitation settings. In addition, the doctorate is available for those seeking an advanced counselor education program.

Specialist-level programs meet Idaho certification requirements in school psychology and advanced school counseling. All programs are designed to assist the student toward meeting the requirements for counselor licensure.

Doctoral degrees are offered under the major in "education."

The Council for Accreditation of Counseling and Related Educational Programs (CACREP), a specialized accrediting body recognized by the Council on Postsecondary Accreditation (COPA), has accredited the following programs in the Counseling and Human Services Program: community counseling (M.Ed., M.S.), school counseling (M.Ed., M.S.), and the counselor education and supervision emphasis in the Ed.D. and Ph.D. programs. These programs are also accredited by the National Council for the Accreditation of Teacher Education (NCATE) and the National Association of State Directors of Teacher Education and Certification (NASDTEC). The school psychology program is accredited by NASDTEC and the National Council for the Accreditation of Teacher Education (NCATE). The rehabilitation counseling graduate program is accredited by the Council on Rehabilitation Education (CORE). All programs afford the graduate the opportunity to take the National Board for Certified Counselor Examination (NBCC) and its subtests.

Graduate Education/Adult and Vocational Education. The graduate program is designed with flexibility to permit each student to pursue an individualized concentration in vocational and/or adult education. The graduate program offers students an opportunity to prepare for other responsibilities. Among the various career objectives a graduate student may choose are positions as curriculum coordinator, cooperative education coordinator, administrator of adult basic education program, human resource development specialist, work-based learning coordinator, supervisor of instruction, and administrator of vocational programs. In addition to seeking these local staff opportunities, many graduates of the vocational education program prepare for master-teacher assignments at the secondary level or as postsecondary (two-year college) instructors.

The graduate degrees of Master of Science (M.S.), Master of Education (M.Ed.), and Specialist in Vocational Education (Voc.Ed.Sp.) with emphasis in adult education, business education, industrial technology education, and vocational education, are offered through the division.

Doctoral programs in the division with major emphasis in adult education and vocational education are offered under the major in "education."

A student with a baccalaureate degree from an accredited college or university with a major in one of the following related areas may apply for graduate study in vocational education: adult education, agricultural science and technology, business occupations, counseling, health occupations, family and consumer science, industrial technology, marketing education, technology (engineering), trade and industrial/technical education, special populations, or career development.

A student with a baccalaureate degree with a major in a nonrelated area must have work experience appropriate to a related area in order to apply for graduate study in vocational education and/or (1) certification by the Idaho State Division of Vocational Education as a vocational teacher in Idaho, (2) baccalaureate degree in a recognized vocational field, (3) a baccalaureate degree, occupational experience, and current employment as a vocational teacher, or (4) a baccalaureate degree, occupational experience, and current work toward employment as a vocational teacher—with approval of the division's graduate committee.

Courses

See part 6 for courses in Adult Education (AdEd), Business Education (BuEd), Counseling and School Psychology (Coun), Industrial Technology Education (ITED), and Vocational Education (VoEd).

Curricular Requirements

BUSINESS EDUCATION (B.S.Bus.Ed.)

This major is for students whose primary interest is in teaching basic business subjects and economics. Required course work includes the university requirements (see regulation J-3), the general requirements for students preparing to teach at the secondary level, and:

BuEd 102 Typewriting II 2
BuEd 185 Machine Calculation 2
BuEd 415 Microcomputer Applications 3
BuEd 418 Teaching Consumer Economics 2
BuEd 419 Word Processing 3
BuEd 491-492 Teaching Business Education I-II 6
Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
Bus 101 Introduction to Business Enterprises 3
BLaw 265 Legal Environment of Business 3
Econ 201, 202 Principles of Economics 6
Engl 313 Business Writing 3
FCS 448 Consumer Education 3
Upper-division accounting, business, or economics electives 9

Note: Business education majors are urged to check with their advisers for vocational endorsement information.

COUNSELING AND SCHOOL PSYCHOLOGY

An undergraduate major is not offered in counseling and school psychology. Students who wish to apply for counseling and school psychology should seek advice from the counseling faculty.

INDUSTRIAL TECHNOLOGY (B.S.Tech.)

Designed to prepare students for both technical and professional careers in industry and business, particularly for supervisory and other mid-management level positions.

Required course work includes the university requirements (see regulation J-3) and:

BLaw 265 Legal Environment of Business 3
Bus 311 Introduction to Management 3
Bus 332 Quantitative Methods in Business 3
Bus 370 Production/Operations Management 3
Bus 441 Labor Relations 3
Bus 456 Quality Management 3
BuEd/ITED 415 Microcomputer Applications 3
BuEd/ITED 460 Desktop Publishing 3
Chem 101 Introduction to Chemistry I 4
Engl 317 Technical & Engineering Report Writing 3
ITED 130 Basic Electronics I 3
ITED 131 Electronics II 3
ITED 265 Computer Aided Drafting/Design 2
ITED 270, 370, 470 Technical Competence and/or ITED 490, 491, 492 Adv Technical Competence and/or approved technical electives 29
ITED 328 Computer Operating Systems for Technology 3
ITED 365 Industrial Supervision 3
ITED 380 Computer Numerical Control Manufacturing 3
ITED 450 Industrial Safety 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
ME 101 Engineering Graphics 2
Phys 100 Fundamentals of Physics 4
Phys 111, 112 General Physics I-II or 211, 212 Engineering Physics I-II 8
Psyc 101 Introduction to Psychology 3
Stat 251 Principles of Statistics or 301 Probability & Statistics 3

And 30 credits in one of the technical specialization blocks. For a listing of the specific courses required in each of these blocks, consult the chair of the department.

The minimum number of credits for the degree is 134.

Technical Specialist Blocks. Moscow campus: manufacturing technology, computer electronics and industrial instrumentation technology, computer management technology, industrial generalist technology. Idaho Falls campus: processing technology, materials technology, waste management technology, industrial safety technology, quality technology, mechanical design technology, industrial and computer electronics technology, reactor operations technology, fuels reprocessing operation technology. Coeur d'Alene campus: industrial safety technology.

MARKETING EDUCATION (B.S.Bus.Ed.)

The marketing education major is for students who are interested in teaching marketing, merchandising, and management at the high-school or postsecondary level. Students electing this major should consult the marketing education adviser concerning state requirements for the vocational education certificate.

Required course work includes the university requirements (see regulation J-3), the general requirements for the student preparing to teach at the secondary level, and:

Acct 201 Introduction to Financial Accounting 3
Bus 321 Marketing 3
Bus 325 Retail Distribution Management 3
Bus 420 Promotional Strategy 3
Bus 422 Sales Force Management 3
BuEd 457 Transitioning to Work 3
BuEd 493 Teaching Marketing Education 3
Econ 201 Principles of Economics 3
VoEd 351 Principles & Philosophy of Vocational Education 3
VoEd 444 Diverse Populations & Individual Differences 2
VoEd 453 Task Analysis 1
VoEd 464 Vocational Guidance 2
VoEd 494 Marketing Education Materials 2

And the completion of a 20-credit teaching minor or the following:

Additional requirements for a 60-credit concentration:

Econ 202 Principles of Economics 3
Engl 313 Business Writing 3
VoEd 200 Seminar or 499 Directed Study 3
Electives (approved by marketing ed teacher educator) 7

OFFICE ADMINISTRATION (B.S.O.Ad.)

This degree is for students whose primary interest is in secretarial administration and related office and business positions. Required course work includes the university requirements (see regulation J-3) and the following, including at least 52 credits in courses in Bus, Econ, Acct, and BuEd and at least 52 credits in courses outside those areas:

BuEd 102 Typewriting II 2
BuEd 185 Machine Calculation 2
BuEd J210/J410 Alphabetic Shorthand I 2
BuEd 311 Alphabetic Shorthand II 2
BuEd 395 Administrative Office Procedures 3
BuEd 413 Administrative Office Management 3
BuEd 415 Microcomputer Applications 3
BuEd 460 Desktop Publishing 3
BuEd 490 Records Management 3
BuEd 496 Directed Work Experience 3-9
Acct 201-202 Intro to Financial Acctg & Managerial Acctg 6
Bus 101 Introduction to Business Enterprises 3
BLaw 265 Legal Environment of Business 3
Bus 311 Introduction to Management 3
Bus 321 Marketing 3
Bus 412 Human Resource Management or Bus 418 Organization Theory 3
ComG 101 Fundamentals of Public Speaking 2
Econ 201, 202 Principles of Economics 6
Engl 313 Business Writing or 317 Tech & Engr Report Writing 3
ITED 328 Computer Operating Systems for Technology 3
One mathematics course 3
One statistics course 3
Upper-division business or economics electives 3
Electives to complete 128 cr for the degree ....—

OFFICE OCCUPATIONS EDUCATION (B.S.Bus.Ed.)

Students whose primary interest is in teaching secretarial and clerical subjects and who wish to qualify for vocational certification elect this major. Consult the office occupations education adviser concerning state requirements for the vocational education certificate.

Required course work includes the university requirements (see regulation J-3), the general requirements for students preparing to teach at the secondary level (see College of Education section in part 4), and:

BuEd 102 Typewriting II 2
BuEd 185 Machine Calculation 2
BuEd J210/J410 Alphabetic Shorthand I 2
BuEd 395 Administrative Office Procedures 3
BuEd 415 Microcomputer Applications 3
BuEd 418 Teaching Consumer Economics 2
BuEd 430 Supervising Business Professionals of America 2
BuEd 457 Transitioning to Work 3
BuEd 491-492 Teaching Business Education I-II 4-6
Acct 201-202 Intro to Financial Acctg & Managerial Acctg 6
BLaw 265 Legal Environment of Business 3
Econ 201, 202 Principles of Economics 6
Engl 313 Business Writing 3
FCS 448 Consumer Education 3
ITED 328 Computer Operating Systems for Technology 3
VoEd 351 Principles & Philosophy of Vocational Education 3
VoEd 444 Diverse Populations & Individual Differences 2
VoEd 464 Vocational Guidance 2
Business or economics electives 6

TECHNOLOGY EDUCATION (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3) and:

ITED 120 Principles of Technology I 3
ITED 130 Basic Electronics I 3
ITED 131 Electronics II 3
ITED 218 Power, Energy, & Transportation 3
ITED 250 Intro to Metals Manufacturing 3
ITED 253 Advanced Metals Manufacturing 3
ITED 265 Computer Aided Drafting/Design 2
ITED 280 Building Construction Technology 3
ITED 328 Computer Operating Systems for Technology 3
ITED 360 Graphic Communication 3
ITED 380 Computer Numerical Control Manufacturing 3
ITED 415 Microcomputer Applications 3
ITED 426 Analysis, Curriculum, & Evaluation 3
ITED 429 Student Organizations 1-4
ITED 450 Industrial Safety 3
ITED 472 Industrial Technology Teaching Methods 3
ASM 107 Beginning Welding 2
Math 143 Pre-calculus Algebra & Analytic Geometry 3
ME 101 Engineering Graphics 2

Students planning to teach must take the following courses:

ED 201 Introduction to Teaching 2
ED 312 Educational Psychology 2
ED 314 Strategies for Teaching 3
EDTE 463 Literacy Methods for Content Learning 3
VoEd 351 Principles & Philosophy of Vocational Ed 3
VoEd 444 Diverse Populations & Individual Differences 2
VoEd 445 Proseminar in Vocational Education 2
VoEd 464 Vocational Guidance 2
VoEd 471 Practicum: Vocational Ed Teaching 10

And one of the following options:

A. GENERAL INDUSTRIAL TECHNOLOGY OPTION: 12 credits in approved ITED courses distributed throughout several technology areas.

B. INDUSTRIAL TECHNOLOGY SPECIALIZATION OPTION: 12 additional credits in a specialized area of technology. Students may specialize in one of the following technology areas: electronics, manufacturing, graphic comm, construction technology, general technology, or computer technology.

C. TEACHING MINOR OPTION: 20-credit teaching minor to be selected from the list of "teaching majors and minors" in the College of Education section.

VOCATIONAL EDUCATION (B.S.Ed.)

While serving preservice teachers in trade and industrial education, this degree is designed primarily for those teachers in area vocational schools and in secondary trade and industrial programs who do not hold degrees. Admission to the program is limited to those who can meet initial certification requirements for an Idaho type "A" vocational specialist certificate.

Required course work includes the university requirements (see regulation J-3) and:

VoEd 270, 370, 470 Technical Competence 32
VoEd 351 Principles & Philosophy of Vocational Education 3
VoEd 420 Evaluation in Vocational Education 3
VoEd 426 Analysis, Curriculum, & Evaluation 3
VoEd 450 Industrial Safety 3
VoEd 453 Task Analysis 1
VoEd 464 Vocational Guidance 2-3
VoEd 471 Practicum in Voc Ed Teaching or ED 431 Secondary School Teaching* 3-10
VoEd 472 Vocational Education Methods 3
VoEd 497 Coordination Techniques 3
ComG 101 Fundamentals of Public Speaking or 132 Oral Interpretation 2
Hist 111 or 112 Intro to U.S. History or PolS 101 Intro to Political Science and American Government 3
Psyc 101 Introduction to Psychology 3
English or literature electives 6
Science-mathematics electives 12
Social science electives 6
Electives in general studies (to be selected from humanities, social sciences, and natural sciences) 4
VoEd electives 16-19
AdEd 473 Foundations of Adult Education
VoEd 200, 400 Seminar (3-6 cr)
VoEd 203, 403 Workshop (1-6 cr)
VoEd 204, 404 Special Topics (3-6 cr)
VoEd 299, 499 Directed Study (3-9 cr)
VoEd 306 Preservice for New Vocational Teachers
VoEd 307 Inservice for New Vocational Teachers
VoEd 418 Learning Styles
VoEd 443 Introduction to Special-Needs Education
VoEd 444 Diverse Populations & Individual Differences
Approved course in computer literacy (3 cr)
Electives approved by vocational teacher educator 11

*If the student wishes to receive a standard secondary certificate, the requirement is EDTE 431 or VoEd 471 and the following courses:

ED 201 Intro to Teaching (if the student has no teaching experience) 2
ED 312 Educational Psychology 2
ED 313 Educational Measurement 1

ED 314 Strategies for Teaching 3
ED 445 Proseminar in Teaching 3
ED 468 Historical & Philosophical Foundations of Ed (same as VoEd 351) 3
EDTE 463 Literacy Methods for Content Learning 3

Aerospace Studies

Jack E. McPhie, Head (UI Student Union Annex 83844-4230; phone 208/885-6129; or Washington State Univ. Thompson Hall; phone 509/335-5598). Faculty: Jack E. McPhie, Dickey R. Rounsaville, Jr., Arnold H. Sauther, S. Lisa Ward.

The Air Force Reserve Officer Training Corps (ROTC) offers eligible students education and training that leads to a commission as a second lieutenant in the U.S. Air Force. Air Force ROTC students may major in any degree program offered at UI; they supplement their major curricula with the specialized aerospace studies courses to prepare for active commissioned service.

Four-Year Program (General Military Course and Professional Officer Course). A formal application is not required for students entering the four-year program. They may register for the program at the same time and in the same manner as they enroll in their other college courses. During their freshman and sophomore years, students enroll in the General Military Course (GMC), and there is NO MILITARY OBLIGATION. They then may compete for entry into the Professional Officer Course (POC), which is normally taken during the last two years of college. Selection into the POC is highly competitive and is based on qualification on an Air Force medical examination, a physical fitness test, scores achieved on the Air Force Officer Qualifying Test (AFOQT), successful completion of a paid four-week field training course at an Air Force base, and the recommendation of the professor of aerospace studies.

Two-Year Program (Professional Officer Course). The two-year program consists of the Professional Officer Course (POC), the last two years of the four-year program. It is designed to provide greater flexibility to meet the needs of the students desiring Air Force opportunities. The basic requirement is that applicants have at least two academic years remaining at either the undergraduate or graduate level, or a combination of both.

After being nominated by the professor of aerospace studies, applicants seeking enrollment in the two-year program are evaluated on scores achieved on the AFOQT, the Air Force medical examination, a physical fitness test, and a personal interview. Because the processing procedure must be completed approximately six months in advance of intended enrollment, interested students should apply early in the fall preceding the fall term in which they plan to enter the program. Application should be made in writing or by a personal visit to the professor of aerospace studies, UI Student Union Annex or WSU Thompson Hall. After successfully completing a paid six-week field training course at an Air Force base during the summer, applicants meeting all requirements may then enroll in the Professional Officer Course.

Air Force ROTC also offers financial assistance to selected students in the form of scholarships and subsistence allowances. The students compete for the scholarships through a national screening process. The Air Force offers 1- to 4-year scholarships that cover tuition, fees, and a book allowance, and also provide a $150-a-month subsistence allowance for each school year a student is on scholarship. Students interested in applying for scholarships should get in touch with this department. Nonscholarship students receive the $150-a-month subsistence allowance while in the POC.

Field Training. Air Force ROTC field training is offered during the summer months at selected Air Force bases throughout the U.S. Students in the four-year program participate in four weeks of field training, usually between their sophomore and junior years. Students applying for entry into the two-year program must successfully complete six weeks of field training before enrollment in the Professional Officer Course. The major areas of study in the four-week field training program include junior officer training, aircraft and aircrew orientation, career orientation, survival training, base functions and Air Force environment, and physical training. The major areas of study included in the six-week field training program are essentially the same as those conducted at four-week field training and in the General Military Course including Leadership Laboratory.

Leadership Laboratory. Leadership Laboratory is taken an average of two hours a week throughout the student's enrollment in Air Force ROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Leadership Laboratory involves a study of Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force, and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised laboratory, which typically includes field trips to Air Force installations throughout the U.S.

Courses

See part 6 for courses in Aerospace Studies (Aero).

Programs

The following programs are designed to provide students with a good military and leadership foundation so students completing them can serve as effective Air Force officers. They are not designed to be academic majors and thus no bachelor's degree is offered.

For a student to receive an Air Force commission, he or she must have completed either the Four-Year Program or the Two-Year Program. Prior-service students should consult the department to find out what course of study will be required for them.

Four-Year Program

Aero 101-102 The Air Force Today 4
Aero 201-202 The Development of Air Power 4
Aero 291 Four-Week Field Training Course 2
Aero 311-312 Air Force Leadership & Management 8
Aero 411-412 National Security Forces in Contemporary American Society 8

Two-Year Program

Aero 292 Six-Week Field Training Course 6
Aero 311-312 Air Force Leadership & Management 8
Aero 411-412 National Security Forces in Contemporary American Society 8

Program in Aging Studies

Virginia W. Junk (108C Mary Hall Niccolls Bldg.; phone 208/885-7264) and Doris K. Williams (208A Mary Hall Niccolls Bldg.; phone 885-7234), Co-coordinators. Faculty: Ginna M. Babcock, Stephen B. Banks, Elizabeth B. Brandt, Jess D. Caudillo, Sallie E. Gordon, Virginia W. Junk, Doris K. Williams, Paul G. Windley.

The Aging Studies Minor connects different knowledge bases across many disciplines. The program offers an interdisciplinary approach that uses the concept of growing older to examine such cultural variables as class, ethnicity, nationality, gender, and developmental processes. The courses encourage students to develop critical thinking skills that will empower them as active learners and that will lead them to having a better understanding of what it means to grow old in a new age. Field and applied experiences will enable students to demonstrate new knowledge and to refine their competence in working with real life community and family problems. Fields such as mass communications, recreation, criminology, economics, health services, social work, law, psychology, education, and family and consumer studies are increasingly offering special career opportunities to students with a background in aging studies.

Academic Minor Requirements

AGING STUDIES MINOR

Soc 431 Personal & Social Issues in Aging or 356 Sociology of Aging 3
Psyc 419 Psychology of Aging or 333 Principles of Aging 3
Rec 365 Leisure & the Aging Process or Arch 412 Environment & Aging
or FCS 320 Perspectives in Aging 2-3
Additional courses selected from the following (if not taken above) 9-10
Arch 412 Environment & Aging
Arch 498 Internship (3-6 cr)
Econ 450 The Economics of Health Care
FCS 320 Perspectives in Aging
FCS 346 Personal & Family Finance & Management
FCS 498 Internship (3-6 cr)
FCS correspondence course: Growing Old in a New Age

H&S 150 Wellness Lifestyles
H&S 498 Internship in Health/Safety (3-6 cr)
PE 201 Fitness Activities & Concepts
PE 498 Internship in Physical Education (3-6 cr)
Rec 365 Leisure & the Aging Process
Rec 498 Internship in Recreation (3-6 cr)
Soc 443 Medical Sociology
Soc 396 Social Work with Aging
Soc 498 Internship (3-6 cr)

Department of Agricultural and Extension Education

Lou E. Riesenberg, Dept. Head (Agricultural and Extension Education Bldg. 83844-2040; phone 208/885-6358; e-mail lriesenb@uidaho.edu). Faculty: James J. Conners, John P. Mundt, Timothy H. Murphy, Douglas A. Pals, Lou E. Riesenberg. Affiliate Faculty: L. DeVere Burton, Richard L. Ledington, Michael G. Rush.

The mission of the Department of Agricultural and Extension Education includes teaching, research, and service. The specific objectives of the department are: (1) to prepare educators for employment in teaching agriculture and extension programs; (2) to provide service and direction to FFA in Idaho; (3) to provide an opportunity for graduate study in the areas of agricultural and extension education; (4) to assist in providing inservice education for agricultural educators in Idaho; (5) to provide service to related agencies and organizations for the support of education and the development of human resources; (6) to conduct quality research in agricultural and extension education; (7) to assist in maintaining viable agricultural education programs; and (8) to assist in the development of information and instructional materials for the support of agricultural educators and extension personnel.

Courses in animal science, agricultural economics, agricultural mechanics, entomological science, plant science, and soil science will prepare graduates to teach these areas as secondary agriculture instructors and develop educational programs as county extension faculty. The agricultural education curriculum is approved by the State Board for Vocational Education. Graduates who have completed a minimum of 28 credits in agricultural education and who meet the state certification requirements for a standard secondary teaching certificate are qualified to teach secondary agriculture. Students must be admitted to the Teacher Education Program, which requires a grade-point average of at least 2.50, before being allowed to enroll in upper-division teacher education courses and participate in student teaching. In addition, government and agribusiness agencies that seek persons with training in agriculture and education provide employment opportunities for graduates of this curriculum. Courses provide students an opportunity to develop employment opportunities in teaching agriculture, cooperative extension, and agribusiness occupations.

The department provides opportunities for professional growth and development to agricultural educators through a planned program of graduate study. The pursuit of an M.S. degree allows for the development of problem-solving skills through scientific investigation of appropriate research topics. Graduate work in agricultural and extension education is offered with the opportunity for students to elect options in agricultural sciences, extension education, vocational teacher education, international agricultural education, or other areas that parallel their career goals. Because of the diversity of research efforts by departmental faculty members, a graduate student has a wide variety of specializations from which to choose a thesis topic. Students with this degree are well prepared to move into a job market or to pursue a Ph.D. program at another institution.

The department welcomes inquiries about its programs and suggests that anyone interested in possible pursuit of a degree in agricultural and extension education should contact the department (telephone 208/885-6358).

Courses

See part 6 for courses in Agricultural Education (AgEd) and Agriculture—General (Ag).

Curricular Requirements

AGRICULTURAL EDUCATION (B.S.Ag.Ed.)

The following curriculum is approved by the State Board of Vocational Education for the preparation of high school agriculture instructors. Graduates who have completed at least 28 credits in agricultural education, and who meet the state certification requirements for a Standard Secondary Teaching Certificate, are eligible to teach secondary agricultural science and technology in Idaho. In addition, government and business agencies and the Cooperative Extension System that seek persons with education in both agriculture and education provide employment opportunities for graduates of this curriculum.

Required course work includes the university requirements (see regulation J-3) and:

AgEd 180 Introduction to Agricultural Education 1
AgEd 351 Principles & Philosophy of Vocational Education 3
AgEd 358 Supervising FFA & SAE Programs 2
AgEd 452 Methods of Teaching Agriculture 3
AgEd 453 Program Planning in Secondary & Adult Ag Education 3
AgEd 454 Facilities Organization & Management 2
AgEd 460 Practicum: Secondary School Teaching in Agriculture 10
AgEd 461 Student Teaching Portfolio 2
AgEd 470 Proseminar in Agricultural Education 2
ASM 107 Beginning Welding 2
ASM 202 Agricultural Shop Practices 2
ASM 210 Small Engines 2
ComG 101 Fundamentals of Public Speaking 2
ED 201 Introduction to Teaching 2
ED 312 Educational Psychology 2
ED 313 Educational Measurement 1
EDTE 463 Literacy Methods for Content Learning 3
Engl 313 Business Writing or 317 Technical & Engineering Report Writing or 207 Persuasive Writing or 209 Inquiry-Based Writing 3
Math 137 Algebra with Applications or 130 Finite Math 3-4
VoEd 464 Vocational Guidance 2
Computer science course 3
Ag electives, incl a minimum of 6 cr in ag econ, 6 cr in animal sc, 6 cr in plant sc, and 4 cr in soils 40
Natural and applied science electives, incl 4 cr in chem and Biol 201 16
Humanities and social sc electives, incl Econ 202 and Psyc 101 14
Electives to total 132 cr for the degree ..... —

GENERAL AGRICULTURE (B.S.Gen.Ag.)

The general agriculture major is designed for students interested in a broad education with emphasis on agriculture. The curriculum's flexibility enables students to prepare for careers in general farming/ranching or entry-level management positions in agribusiness. Students who have not decided on a major in agriculture may enroll in this curriculum and take courses in a number of departments to decide on a departmental major. Those who start in this curriculum will be informed of the requirements in other majors and plan course selections to avoid loss of time if they transfer to another major. Note: No student may become a candidate for the B.S.Gen.Ag. degree who has already earned a degree in the College of Agriculture or who is a candidate for another degree offered by the college.

Required course work includes the university requirements (see regulation J-3) and:

Ag 200 Seminar 1
ComG 101 Fundamentals of Public Speaking 2
Engl 207 Persuasive Writing or 209 Inquiry-Based Writing or 313 Business Writing or 317 Technical & Engineering Report Writing 3
Ag econ, business, and accounting courses 12
Agriculture courses, incl courses in at least four depts or divisions 50
Humanities and social sc electives, incl Econ 201 and/or 202 14
Math, statistics, and computer sc courses, incl at least 3 cr in math 6
Natural and applied sc courses, incl at least 4 cr of chem and 4 additional cr of either chem or physics 16
Electives to total 132 cr for the degree ..... —

Academic Minor Requirements

AGRICULTURAL EXTENSION EDUCATION MINOR

AgEd 180 Introduction to Agricultural Education 1
AgEd 181 Introduction to Extension Education 1
AgEd 359 Developing 4-H Youth Programs 1
AgEd 448 Principles & Practices of Extension Education 3
AgEd 452 Methods of Teaching Agriculture 3
AgEd 459 Cooperative Extension Practicum 9

Department of Agricultural Economics and Rural Sociology

James R. Nelson, Dept. Head (39A Iddings Wing, Ag. Sc. Bldg. 83844-2334; phone 208/885-6264; e-mail jnelson@uidaho.edu). Faculty: Ahmed A. Araji, John E. Carlson, Robert D. Carver, Stephen C. Cooke, Stephen Devadoss, John C. Foltz, C. Wilson Gray, Joseph F. Guenthner, Joel R. Hamilton, Aaron J. Harp, James R. Jones, Roger B. Long, LeRoy D. Luft, Corinne M. Lyle, Larry D. Makus, Gerald E. Marousek, Neil L. Meyer, James R. Nelson, Paul E. Patterson, Neil R. Rimbey, David J. Walker, Russell V. Withers.

Agricultural economics is an applied branch of economics. It is a social science that deals with economic problems in agriculture, the food industry, rural communities, and the use and conservation of our natural resources. Economic principles and theories are used to determine maximum economic efficiency in the production and marketing of agricultural commodities and in the use of natural resources.

The agricultural economics program prepares students to solve problems faced by farmers and ranchers, agricultural marketing and supply companies, natural resource agencies, and rural communities. The department offers the degree of Bachelor of Science in Agricultural Economics with majors in agribusiness, agricultural economics, and natural resources and rural development. Areas of study within the majors include agricultural finance, agricultural policy, marketing, farm and ranch management, rural community development, international trade and development, economic use of natural resources, and management of agribusiness firms.

The agribusiness major prepares students in the management functions of farms, ranches, and businesses involved with the production and marketing of farm commodities and farm production inputs. The agricultural economics major prepares students to become professional economists for commercial agricultural firms and governmental agencies or to pursue advanced degrees in this field before entering the profession. Students completing the natural resources and rural development major are prepared to enter private industry and public agencies that deal with economic analysis of natural resource use and rural development problems.

The department also offers the degree of Master of Science with a major in agricultural economics. Because of the diversity of research efforts by departmental faculty, a graduate student has a wide variety of specializations from which to choose a thesis project. Students with this degree are well qualified for employment in private industry or the public sector or to pursue a Ph.D. degree.

The department welcomes inquiries about its program and suggests that anyone interested in possible pursuit of a degree in agricultural economics should contact the department head (telephone 208/885-6264).

Courses

See part 6 for courses in Agricultural Economics (AgEc).

Curricular Requirements

The agricultural economics area has three programs designed to prepare students for careers in the agricultural economics profession. The agribusiness major provides students with training related to management, finance, and marketing in the agribusiness sector. The agricultural economics major provides students with the theory behind decisions concerning agricultural production, marketing, resource use, pricing, and policy. The natural resources and rural development major provides understanding of the economics of pricing, public policy, and management of natural resources and community and human resources in rural society. Students in this major may elect courses in supporting fields for a focus in natural resource economics or in rural development economics. Each of these majors prepares students to pursue advanced degrees if they choose.

CORE COURSES FOR B.S.AG.ECON.

AgEc 101 Agricultural Economics & Agribusiness 3
AgEc 278 Principles of Farm & Ranch Management 4
AgEc 356 Agricultural Programs & Policies 3
Biol 100 Intro to Biology or 201 Intro to Life Sciences or
MMBB 250 General Microbiology 4-5
Chem 101 Introduction to Chemistry I or 111 Principles of Chemistry I 4
ComG 101 Fundamentals of Public Speaking 2
CS 112 Introduction to Problem Solving & Programming 3
Econ 201, 202 Principles of Economics (may not also be used to satisfy the
core requirements in regulation J-3-d) 6
Econ 352 Intermediate Microeconomic Analysis 3
Engl 317 Technical & Engineering Report Writing 3
Stat 251 Principles of Statistics 3
Humanities and social sciences (at least 6 cr of each; may not include Econ 201-202) 14

AGRICULTURAL ECONOMICS (B.S.Ag.Econ.)

Required course work includes the university requirements (see regulation J-3), the agricultural economics core, and:

AgEc 289 Agricultural Markets & Prices 3
AgEc 453 Agricultural Price Analysis 3
AgEc 481 Agricultural Market Analysis 3
AgEc 493 Agricultural Production Economics 3
Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
Econ 351 Intermediate Macroeconomic Analysis 3
Math 170 Analytic Geometry & Calculus I 4
Math, stat, or CS electives above the specific requirements 3-4
Agricultural economics electives 3
Economics electives 6
Technical agriculture electives 12
Electives to total 132 cr for the degree ..... —

AGRIBUSINESS (B.S.Ag.Econ.)

Required course work includes the university requirements (see regulation J-3), the agricultural economics core, and:

AgEc 289 Agricultural Markets & Prices 3
AgEc 391 Agribusiness Management 3
AgEc 394 Analytical Techniques in Agribusiness & Economics 3
Two of the following courses 6
AgEc 453 Agricultural Price Analysis
AgEc 481 Agricultural Market Analysis
AgEc 493 Agricultural Production Economics
Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
Acct 381 Accounting for Managers & Investors 3
BLaw 265 Legal Environment of Business 3
Bus 413 Organizational Behavior 3
Math 160 Survey of Calculus or 170 Analytic Geom & Calc I 4
Math, stat, or CS electives above the specific requirements 3-4
Agricultural economics electives 3
Ag economics, economics, business, or accounting electives 3
Technical agriculture electives 12
Electives to total 132 cr for the degree ..... —

NATURAL RESOURCES AND RURAL DEVELOPMENT (B.S.Ag.Econ.)

Required course work includes the university requirements (see regulation J-3), the agricultural economics core, and:

AgEc 451 Land & Natural Resource Economics
or 467 Economics of Rural Community Development 3
AgEc 493 Agricultural Production Economics 3
Econ 351 Intermediate Macroeconomic Analysis 3
Econ 385 Environmental Economics 3
Econ 430 Regional/Urban Economics 3
Math 170 Analytic Geometry & Calculus I 4
PolS 275 American State & Local Government 3
Soc 310 Rural Sociology 3
Agricultural economics electives (select from
AgEc 289, 332, 361, 394, 451, and 467) 9
Math, stat, or CS electives above the specific requirements 3-4
Supporting field electives (see list in dept office) 18
Electives to total 132 cr for the degree ..... —

Academic Minor Requirements

AGRICULTURAL ECONOMICS MINOR

AgEc 101 Agricultural Economics & Agribusiness 3
AgEc 278 Principles of Farm & Ranch Management 4
AgEc 289 Agricultural Markets & Prices 3
AgEc 332 Econ of Ag Development or 356 Ag Programs & Policies 3
Two of the following courses 6
AgEc 453 Agricultural Price Analysis
AgEc 481 Agricultural Market Analysis
AgEc 493 Agricultural Production Economics

AGRIBUSINESS MINOR

AgEc 101 Agricultural Economics & Agribusiness 3
AgEc 278 Principles of Farm & Ranch Management 4
AgEc 289 Agricultural Markets & Prices 3
AgEc 394 Analytical Techniques in Agribusiness & Economics or
453 Ag Price Analysis or 481 Ag Market Analysis 3
Two of the following courses 6
AgEc 356 Agricultural Programs & Policies
AgEc 361 Farm & Natural Resource Appraisal
AgEc 391 Agribusiness Management

NATURAL RESOURCE ECONOMICS AND COMMUNITY DEVELOPMENT MINOR

AgEc 101 Agricultural Economics & Agribusiness 3
AgEc 278 Principles of Farm & Ranch Management 4
AgEc 356 Agricultural Programs & Policies 3
AgEc 451 Land & Natural Resource Economics or
467 Economics of Rural Community Development 3
Two of the following courses 6
AgEc 332 Economics of Agricultural Development
AgEc 361 Farm & Natural Resource Appraisal
AgEc 383 Economics for Natural Resource Managers

Program in American Studies

Walter A. Hesford, Coordinator (121 Brink Hall 83844-1102; phone 208/885-6941); Sheila O'Brien and Mary H. DuPree, Co-coordinators. Faculty: Katherine G. Aiken, Roy A. Atwood, Anna Banks, David S. Barber, Donald W. Crowley, Mary H. DuPree, Shaikh M. Ghazanfar, H. Lynne Haagensen, Sandra Haarsager, Walter A. Hesford, Eric L. Jensen, Harley E. Johansen, Alan Lifton, William R. Lund, Barbara R. Meldrum, Sheila O'Brien, Roderick Sprague, William R. Swagerty, Margrit von Braun, Diane B. Walker, Dennis D. West, Gary Williams. Affiliate Faculty: Bruce Wollenberg.

Courses

See part 6 for courses in American Studies (AmSt).

Curricular Requirements

AMERICAN STUDIES (B.A.)

Required course work includes the university requirements (see regulation J-3), general requirements for the B.A. degree, and:

1. Nine credits in courses offered specifically for students in the American Studies program, including AmSt 301, Interpreting America (normally, one course each semester will be offered—see adviser); and

2. Completion of one of the following major areas of emphasis:

A. LITERATURE EMPHASIS

Engl 343-344 Survey of American Literature 6
Two courses in English literature 6
Courses selected from the following list 15
- Engl 427 American Fiction, 1914-1945
- Engl 439 Modern English & American Drama
- Engl 441 Introduction to the Study of Language
- Engl 470 American Literature to 1830
- Engl 471 Poe, Hawthorne, & Melville
- Engl 472 Emerson, Thoreau, & Whitman
- Engl 473 Literature of the American West
- Engl 474 American Literature, 1865-1914
- Engl 480 Ethnic & Minority Literature
- Engl 483 Black Literature
- Engl 484 American Indian Literature
- RelS 321 Twentieth Century Theology

Courses in history and social science, incl at least 6 cr in each (selected from courses listed under the social sc emphasis and from upper-div courses listed under the history emphasis) 18

B. HISTORY EMPHASIS

Hist 101-102 History of Civilization 6
Hist 111-112 Introduction to U.S. History 6
Five courses selected from the following list 15
- Art 302 History of Art: 20th Century
- ComG 384 History of American Film
- Hist 313 Red, White & Black: The Peopling of Early North America
- Hist 410 Land & the American Imagination
- Hist 411 American Colonial History to 1763
- Hist 412 The American Revolution, 1763-1789
- Hist 413 U.S.: Early National Period
- Hist 415 Civil War & Reconstruction, 1828-1877
- Hist 417 United States, 1900-1945
- Hist 418 Recent America, 1945-Present
- Hist 420 History of Women in American Society
- Hist 423 Idaho & the Pacific Northwest
- Hist 428 History of the American West
- Hist 431 History of Indian-White Relations
- Hist 432 The Canadian & American Western Experiences
- Hist 433-434 Social & Cultural History of the U.S.
- MusH 440 Studies in American Music

Courses in literature and social science, incl at least 6 cr in each (selected from courses listed under the social sc emphasis and the following lit courses) 18
- Engl 343-344 Survey of American Literature
- Engl 427 American Fiction, 1914-1945
- Engl 470 American Literature to 1830
- Engl 471 Poe, Hawthorne, & Melville
- Engl 472 Emerson, Thoreau, & Whitman
- Engl 473 Literature of the American West
- Engl 474 American Literature, 1865-1914
- Engl 483 Black Literature
- Engl 484 American Indian Literature

C. SOCIAL SCIENCE EMPHASIS

Anth 329 North American Indians or Hist 431/Anth 404 History of Indian-White Relations 3
Econ 201, 202 Principles of Economics or 272 Foundations of Economic Analysis and 345 American Economic Development 6-7
Geog 240 Economic Geography 3
PolS 435 Political Research Methods & Approaches 3
Soc 230 Social Problems 3
Soc 322 Racial & Ethnic Relations 3
Soc 414 Development of Social Theory 3
Courses selected from the following list 14
- Anth 100 Introduction to Anthropology
- Arch 483 Urban Theory & Issues
- Arch 499 Directed Study: American Architecture
- ComG 111 Introduction to Communication Studies
- ComG 384 History of American Film
- ComG 386 American Documentary Film/Television
- Comm 444 Communication & Public Opinion
- Comm 445 History of Mass Communication
- Econ 345 American Economic Development
- Econ 408 State & Local Government Finance
- Econ 441 Labor Economics
- Geog 165 Human Geography
- Geog 330 Urban Geography
- Geog 360 Population Dynamics & Distribution
- Geog 364 Idaho & Pacific Northwest
- Geog 365 Political Geography
- MusH 440 Studies in American Music
- Phil 411 Social & Political Philosophy
- PolS 275 American State & Local Government
- PolS 431 American Political Parties & Elections
- PolS 432 American Congress
- PolS 433 American Political Culture
- PolS 438 Conduct of American Foreign Policy
- PolS 467 Constitutional Law
- Soc 310 Rural Sociology
- Soc 313 Collective Behavior
- Soc 325 Sociology of the Family

Four courses in literature and history, incl at least 3 cr in each (selected from the following list) 12
- Engl 343-344 Survey of American Literature
- Engl 427 American Fiction, 1914-1945
- Engl 470 American Literature to 1830
- Engl 471 Poe, Hawthorne, & Melville
- Engl 472 Emerson, Thoreau, & Whitman
- Engl 473 Literature of the American West
- Engl 474 American Literature, 1865-1914
- Engl 483 Black Literature
- Engl 484 American Indian Literature
- Hist 313 Red, White, & Black: The Peopling of Early North America
- Hist 417 United States, 1900-1945
- Hist 418 Recent America, 1945-Present
- Hist 431 History of Indian-White Relations
- Hist 433-434 Social & Cultural History of the U.S.

Academic Minor Requirements

AMERICAN STUDIES MINOR

AmSt 301 Interpreting America 3
Six courses numbered 300 or above, chosen from the emphasis lists under the American Studies major 18

Note: No course used toward an American Studies minor may also be used toward any major.

Department of Animal and Veterinary Science

Richard A. Battaglia, Dept. Head (213 Ag. Sc. Bldg. 83844-2330; phone 208/885-6345; e-mail bhawk@uidaho.edu). Faculty: Bruce C. Anderson, Richard A. Battaglia, Ernest L. Brannon, Marie S. Bulgin, Richard C. Bull, Susan K. Duckett, Edward P. Duren, James J. England, Dean E. Falk, Dennis G. Falk, Edward A. Fiez, Dan D. Hinman, Carl W. Hunt, Mark L. Kinsel, Mark A. McGuire, John C. Miller, Richard J. Norell, Ronald P. Richard, Richard A. Roeder, William K. Sanchez, R. Garth Sasser, Gerald T. Schelling, Alton C. S. Ward, Brad K. Williams, Gordon L. Woods, Jerry L. Zaugg.

Animal agriculture has a major role in providing the supply of high quality food, not only for the people of the United States, but also for those of other nations. Food and fiber obtained from animals include meat, milk, eggs, wool, and many by-products. Knowledge and skills resulting from a college education in this field will permit the graduate to contribute to improved production and health of the nation's livestock including beef, sheep, dairy, swine, poultry, horses, and companion animals.

In addition to classrooms and laboratories located in the Agricultural Science Building, the department's facilities include production centers for dairy, beef, and sheep, as well as a meats laboratory and

livestock judging pavilion. Several breeds of animals are maintained for instructional purposes. The academic program is designed to prepare students for a variety of important and rewarding career opportunities. For more specific information, get in touch with the department head (208/885-6345).

To prepare students for the varied types of occupations available in animal agriculture, the Department of Animal and Veterinary Science offers a bachelor of science degree in animal science with four majors: animal science, dairy science, agribusiness, and range-livestock management, and a bachelor of science degree in veterinary science. Each of these majors, while attempting to provide the students with a sound background in animal biology, has its separate emphasis on complementary academic training. One of the strongest features of these programs is the flexibility provided. Each major permits the student to plan the precise course of study that will best prepare him or her for the area of work that he or she desires to enter. The department also offers a minor in animal science for students desiring a background in animal agriculture to complement their major field of study.

The major in **animal science** is designed for students who desire to pursue a career in livestock production, graduate work in one of the varied disciplines in animal sciences (nutrition, breeding, physiology, growth, endocrinology, meats, etc.), or for employment by companies that require intensive training in animal biology. This major is also excellent training for those interested in Cooperative Extension.

A major in **dairy science** helps prepare students for careers in one of Idaho's fastest growing industries. This major offers introductory and advanced course work and "hands on training" at a modern dairy center. Specific courses are taught in dairy nutrition, forage crops, dairy reproduction and physiology, dairy cattle evaluation, dairy products and processing, physiology of lactation, herd health management, agriculture power and machines, and farm management. Students are eligible to participate in the cooperative of university dairy students (CUDS) program.

The major in **range-livestock management** attempts to provide, in addition to intensive training in animal biology, a sound background in the relationship between animals and plants. To this end the student receives training in range management, forage crop production, and soils. This major is designed for students who desire to pursue a career in range-livestock production or employment with companies or agencies that deal with the production and management of livestock on western ranges. Opportunities also exist for students to pursue graduate work in the areas of forage utilization and related fields.

The **agribusiness** major is designed for students who desire a career as entry level into management positions in livestock-related industries. This major is oriented toward business, economics, and agricultural economics, in addition to a sound background in production animal agriculture. With appropriate choices of elective courses, students can also prepare themselves for positions with financial institutions involved with the animal agriculture industry.

A **veterinary science** education program is offered by the department in cooperation with the Washington, Oregon, and Idaho (WOI) Regional Program in Veterinary Medical Education, for those students preparing for admission to a college of veterinary medicine. Students with majors other than animal/veterinary science may participate and receive counseling. If, after successful completion of 99 credits, a student majoring in animal/veterinary science is admitted to a recognized college of veterinary medicine (at least 33 credits in approved courses), that will constitute the senior year toward the degree of B.S.Vet.Sc. at UI. Students under this major must complete their junior year (at least 33 credits) in residence on the Moscow campus.

Courses

See part 6 for courses in Animal and Veterinary Science (AVS) and Veterinary Science (VS).

Curricular Requirements

AGRIBUSINESS (B.S.An.Sc.)

The agribusiness major with its dual emphasis on animal science and business is designed for students who want to enter management positions in livestock-related industries.

Required course work includes the university requirements (see regulation J-3) and:

AVS 101 Animal & Veterinary Orientation 2
AVS 109 The Science of Animals that Serve Humanity 3
AVS 222 Animal Reproduction & Breeding 4
AVS 263 Introduction to Meat Science 3
AVS 305 Animal Nutrition 3
AVS 306 Feeds & Ration Formulation 4
AVS 371 Anatomy & Physiology 4
AVS 450 Senior Seminar 1
AVS 452 Physiology of Reproduction 4
Two of the following courses 6
- AVS 466 Horse Production
- AVS 472 Dairy Cattle Management
- AVS 474 Beef Cattle Science
- AVS 476 Sheep Science
- AVS 478 Swine Science

Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
AgEc 278 Principles of Farm & Ranch Management 4
AgEc 289 Agricultural Markets & Prices 3
AgEc 391 Agribusiness Management or Bus 311 Intro to Management 3
ASM 240 Computer Applications in Biological Systems 3
Biol 201 Introduction to the Life Sciences 4
Chem 111 Principles of Chemistry I 4
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
Econ 201, 202 Principles of Economics 6
Engl 313 Business Writing 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
Stat 251 Principles of Statistics 3
Agricultural economics or accounting electives 6
Business electives 9
Electives to total 132 cr for the degree ..... —

ANIMAL SCIENCE (B.S.An.Sc.)

The animal science major prepares students to pursue a career in livestock production, for graduate study in any of the varied disciplines in animal science, or for employment that requires intensive training in animal biology.

Required course work includes the university requirements (see regulation J-3) and:

AVS 101 Animal & Veterinary Orientation 2
AVS 109 The Science of Animals that Serve Humanity 3
AVS 222 Animal Reproduction & Breeding 4
AVS 263 Introduction to Meat Science 3
AVS 305 Animal Nutrition 3
AVS 306 Feeds & Ration Formulation 4
AVS 330 Genetics of Farm Animals 3
AVS 371 Anatomy & Physiology 4
AVS 450 Senior Seminar 1
AVS 452 Physiology of Reproduction 4
Two of the following courses 6
- AVS 466 Horse Production
- AVS 472 Dairy Cattle Management
- AVS 474 Beef Cattle Science
- AVS 476 Sheep Science
- AVS 478 Swine Science

ASM 240 Computer Applications in Biological Systems 3
Biol 201 Introduction to the Life Sciences 4
Chem 111 Principles of Chemistry I 4
Chem 275 Carbon Compounds 3
Chem 276 Carbon Compounds Lab 1
ComG 101 Fundamentals of Public Speaking 2
Engl 317 Technical & Engineering Report Writing 3
Gene 314 General Genetics 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
MMBB 380, 382 Introductory Biochemistry & Lab 4
Stat 251 Principles of Statistics 3
Two of the following courses 6
- AVS 411 Microbiology & Physiology of Ruminant Nutrition
- AVS 413 Physiology of Lactation
- AVS 430 Advanced Topics in Embryo Physiology
- AVS 451 Endocrine Physiology
- AVS 471 Animal Disease
- AVS 473 Herd Health Management

Life science electives 4
Electives to total 132 cr for the degree ..... —

DAIRY SCIENCE (B.S.An.Sc.)

Required course work includes the university requirements (see regulation J-3) and:

AVS 101 Animal & Veterinary Orientation 2
AVS 109 The Science of Animals that Serve Humanity 3
AVS 172 Dairy Cattle Management Lab 1

AVS 222 Animal Reproduction & Breeding 4
AVS 263 Introduction to Meat Science 3
AVS 272 Dairy Cattle Traits 2
AVS 305 Animal Nutrition 3
AVS 306 Feeds & Ration Formulation 4
AVS 330 Genetics of Farm Animals 3
AVS 371 Anatomy & Physiology 4
AVS 413 Physiology of Lactation 3
AVS 450 Senior Seminar 1
AVS 452 Physiology of Reproduction 4
AVS 472 Dairy Cattle Management 3
AVS 475 Advanced Dairy Cattle Management 2
One of the following courses 3
AVS 466 Horse Production
AVS 474 Beef Cattle Science
AVS 476 Sheep Science
AVS 478 Swine Science
ASM 240 Computer Applications in Biological Systems 3
Biol 201 Introduction to the Life Sciences 4
Chem 111 Principles of Chemistry 4
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
FST 301 Dairy Products 3
Gene 314 General Genetics 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
MMBB 380, 382 Introductory Biochemistry & Lab 4
PlSc 308 Forage & Grassland Management 3
Stat 251 Principles of Statistics 3
Electives to total 132 cr for the degree ....

RANGE-LIVESTOCK MANAGEMENT (B.S.An.Sc.)

The major in range-livestock management provides training in animal science with a sound background in the relationship between animals and plants and is intended for students interested in the management or operation of range and pasture beef cattle or sheep operations.

Required course work includes the university requirements (see regulation J-3) and:

AVS 101 Animal & Veterinary Orientation 2
AVS 109 The Science of Animals that Serve Humanity 3
AVS 222 Animal Reproduction & Breeding 4
AVS 263 Introduction to Meat Science 3
AVS 305 Animal Nutrition 3
AVS 306 Feeds & Ration Formulation 4
AVS 330 Genetics of Farm Animals 3
AVS 371 Anatomy & Physiology 4
AVS 450 Senior Seminar 1
AVS 452 Physiology of Reproduction 4
Two of the following courses 6
AVS 466 Horse Production
AVS 472 Dairy Cattle Management
AVS 474 Beef Cattle Science
AVS 476 Sheep Science
AVS 478 Swine Science
ASM 240 Computer Applications in Biological Systems 3
Biol 201 Introduction to the Life Sciences 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Bot 241 Systematic Botany 3
Chem 111 Principles of Chemistry I 4
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
Engl 317 Technical & Engineering Report Writing 3
Gene 314 General Genetics 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
MMBB 380, 382 Introductory Biochemistry & Lab 4
PlSc 308 Forage & Grassland Management 3
Rnge 352 Natural History of Western Rangelands 3
Rnge 354 Rangeland Vegetation Management 3
Rnge 453 Rangeland Vegetation Inventory & Analysis 3
Rnge 458 Agroforestry 3
Rnge 459 Rangeland Ecology 3
Soil 205, 206 General Soils & Lab 4
Stat 251 Principles of Statistics 3
Electives to total 132 cr for the degree ....—

VETERINARY SCIENCE (B.S.Vet.Sc.)

Students in the College of Agriculture who successfully completed a minimum of 99 credits with a major in animal science, bacteriology, or wildlife, who completed all major requirements in the specified major, and who are admitted to a recognized college of veterinary medicine will, upon successfully completing the first year at the college of veterinary medicine (at least 33 credits), be awarded the UI baccalaureate degree (B.S.Vet.Sc.). Students who choose this major must be enrolled for their junior year (at least 33 credits) in the major in which they will receive their degree.

Required course work includes the university requirements (see regulation J-3) and:

AVS 101 Animal & Veterinary Orientation 2
AVS 109 The Science of Animals that Serve Humanity 3
AVS 450 Senior Seminar 1
ASM 240 Computer Applications in Biological Systems 3
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Chem 111 Principles of Chemistry I 4
Chem 275, 276 Carbon Compounds & Lab or 277, 278 Organic Chemistry I & Lab 4
ComG 101 Fundamentals of Public Speaking 2
Gene 314 General Genetics 3
Math 143 Pre-calculus Algebra & Analytic Geom or 170 Analytic Geometry & Calculus I 3-4
MMBB 380, 382 Introductory Biochemistry & Lab 4
Phys 111 General Physics I 4
Advanced writing elective 3
Agricultural electives 18-20
(recommended electives: AVS 305, 306, 330, 371, 430, 466, 472, 474, 476, 478)
Approved electives (first year of veterinary medicine) 33
Electives to total 132 cr for the degree ....—

Note: It is recommended that Phys 112 and Chem 113 be taken because certain veterinary medical schools require additional courses in physics and chemistry.

Academic Minor Requirements

ANIMAL SCIENCE MINOR

AVS 109 The Science of Animals that Serve Humanity 3
AVS 222 Animal Reproduction & Breeding 4
AVS 263 Introduction to Meat Science 3
AVS 305 Animal Nutrition 3
AVS 306 Feeds & Ration Formulation 4
AVS 452 Physiology of Reproduction 4
Two of the following 6
AVS 472 Dairy Cattle Management
AVS 474 Beef Cattle Science
AVS 476 Sheep Science
AVS 478 Swine Science

Department of Architecture

Bruce T. Haglund, Dept. Chair (207 Art and Arch. South 83844-2451; phone 208/885-6781; e-mail arch@uidaho.edu). Faculty: Robert M. Baron, Ronald D. Bevans, William B. Bowler, Jr., Bruce T. Haglund, Marcia N. Lehman-Kessler, Anne L. Marshall, Wendy R. McClure, John L. Pulliam, Gifford Pierce, D. Nels Reese, Jonathan W. Reich, Sandra J. Stannard, Brian F. Sumption, Stephen G. Thurston (IA Director). Adjunct Faculty: C. Brian Cleveley, Stephen R. Drown.

The Department of Architecture offers two undergraduate options preparing students for careers in architecture or interior design. The curricula lead to a five-year Bachelor of Architecture degree (B.Arch.) or a four-year Bachelor of Fine Arts in Interior Architecture degree (B.F.A.). The B.Arch. degree is accredited by the National Architectural Accreditation Board and is accepted as fulfilling a requirement for architectural registration.

Most states require that an individual intending to become an architect hold an accredited degree. There are two types of degrees that are accredited by the National Architectural Accrediting Board: (1) the Bachelor of Architecture, which requires a minimum of five years of study, and (2) the Master of Architecture, which requires a minimum of three years of study following an unrelated bachelor's degree or two years following a related preprofessional bachelor's degree. These professional degrees are structured to educate those who aspire to registration/licensure as architects.

The four-year, preprofessional degree, where offered, is not accredited by NAAB. The preprofessional degree is useful for those wishing a foundation in the field of architecture, as preparation for either continued education in a professional degree program, or for employment options in architecturally related areas.

Students in architecture and interior architecture devote their first year to the completion of introductory courses and the beginning of core course work required by the university. These beginning courses include preliminary studies in each discipline, design, media, and mathematics. At the end of the first year of study, academic achievement is reviewed to determine eligibility for continued study in architecture or interior design.

The remaining years present intensive study in each area. Both curricula center on a progressive series of design studios. Design instructors provide individual guidance as students develop project assignments. Studio designs are often set in the immediate area or

cities of the Northwest region. Students may be required to travel to project locations for client meetings, discussions with practicing professionals, and site inspection.

The design studios synthesize the work of preceding and concurrent courses in technology, history, professional practice, and specialized elective areas. The elective program allows students to develop advanced skills in anticipation of a professional career path. Visiting professionals augment course work through classroom teaching and a public lecture series.

The Department of Architecture is housed in four buildings that include an area of 40,000 square feet. These buildings contain facilities for digital imaging, photocopying, printmaking, and photographic processing. Both disciplines require study in the department's computer laboratory. A supervised woodworking shop is available to all students. The department's reference collections are housed in the nearby university library.

Two programs are available for graduate study in architecture. The Master of Arts in Architecture (M.A.) curriculum is available to students who have earned previous degrees at the bachelor level or above in other fields. Students electing this option may earn both a B.Arch. degree and an M.A. degree in architecture during their study in the department. The Master of Architecture (M.Arch.) program requires a previous accredited B.Arch. degree. These students pursue an individual study program under the guidance of a graduate faculty mentor. Both master-level degrees require a written and/or design thesis.

All Department of Architecture programs have been developed to provide graduates with the theoretical and practical skills necessary for a professional career. To facilitate the entry of graduates into the profession, the department maintains active relationships with national, regional, and local professional organizations.

Courses

See part 6 for courses in Architecture (Arch) and Interior Architecture (IA).

Curricular Requirements

ARCHITECTURE (B.Arch.)

This is a five-year curriculum leading to an accredited B.Arch. degree. After their first year of study, students will be evaluated on the basis of academic achievement and the 45 most qualified students will be chosen to enter the second year of study. These students shall have completed department course requirements to be considered for acceptance into the second year of the program. Students entering the second year of the curriculum must also have earned a grade-point average of 2.5 or better. Applicants to the second year must submit a portfolio in an 8-1/2" x 11" format containing examples of work in art and architecture. The submission should also contain a transcript of any college work outside the UI. The deadline for second year applications is May 20. The results of the evaluation are made known to applicants by the end of June.

Students accepted into the final four years of the curriculum are required to maintain a 2.5 GPA and to receive a grade of "C" or better in architectural design courses to remain in the curriculum. Students who have not been accepted into the second year of the curriculum may not enroll in architectural design courses. Students who have left the program may only re-enter the curriculum by application to the departmental admissions committee.

Required course work includes the university requirements (see regulation J-3) and:

Arch 155 Introduction to Architecture 2
Arch 156 Graphic Communication 2
Arch 255 Advanced Architectural Graphics 2
Arch 256 Basic Architectural Design 3
Arch 266 Materials & Methods 3
Arch 353-354 Architectural Design I 10
Arch 366 Building Technology I 3
Arch 374 Computer Applications in Architecture 3
Arch 383 Architectural Site Design 3
Arch 384 Computer-Aided Design 2
Arch 385 History of Architecture I: Pre-Modern 3
Arch 386 History of Architecture II: Modern 3
Arch 401 Senior Design Seminar 2
Arch 453-454 Architectural Design II 10
Arch 455-456 Architectural Design III 10
Arch 463-464 Environmental Control Systems 8
Arch 465-466 Building Technology II 6
Arch 468 Technical Integration of Buildings 2
Arch 475-476 Professional Practice I-II 6
Arch 483 Urban Theory & Issues 3
Art 100 Visual Art 3
Art 111-112 Drawing I-II 6
Art 121-122 Visual Communication & the Design Process 6
ForP 365 Wood Building Technology 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
Math 160 Survey of Calculus or Phil 211 Intro to Symbolic Logic
or Stat 251 Principles of Statistics or CS 112 Intro to
Problem Solving & Programming 3-4
Phys 111 General Physics 4
Electives to total 160 cr for the degree (including at least 6 cr of 300-level
or above courses taken outside the college and 6 cr of 200-level or
above courses taken within the college; credits earned in completion
of an academic minor may be substituted) ..... —

INTERIOR ARCHITECTURE (B.F.A.)

The four-year curriculum is divided into two parts: preprofessional (first year) and professional (remaining three years). Due to limited enrollment capacity, admission into the professional program is highly competitive. Students who wish to apply for advancement to the professional program must (1) complete the preprofessional program (see department for a list of courses included in the preprofessional and professional programs), (2) complete 12 credits in the university core curriculum (general education) requirements, (3) hold a minimum GPA of 2.5 with a grade of "C" or better in all required IA and Arch courses, and (4) submit a complete application package to be received by the department no later than April 15 for the following fall semester. The application package must include a portfolio of art, architectural graphics, and design work, and a transcript of any university work completed outside UI. Students accepted to the professional program are required to maintain a 2.5 GPA and to receive a "C" grade or better in all required IA and Arch courses. Students who have not been accepted into the professional program may not enroll in any professional program courses without permission of the department.

Required course work includes the university requirements (see regulation J-3) and:

IA 151 Introduction to Interior Design 3
IA 152 Interior Design I 3
IA 241 Design & Human Performance 2
IA 256 Basic Architectural Design 3
IA 281 History of the Interior Before Industrialization 3
IA 282 History of the Interior: 20th Century 3
IA 351-352 Interior Design II-III 8
IA 368 Materials & Specifications 3
IA 451-452 Interior Design IV-V 10
IA 478 Professional Practices for Interior Design 3
Arch 155 Introduction to Architecture 2
Arch 156 Graphic Communication 2
Arch 255 Advanced Architectural Graphics 2
Arch 266 Materials & Methods 3
Arch 374 Computer Applications in Architecture 3
Arch 384 Computer-Aided Design 2
Arch 385 History of Architecture I: Pre-Modern 3
Arch 386 History of Architecture II: Modern 3
Arch 463-464 Environmental Control Systems 8
Arch 475 Professional Practice I 3
Art 100 Visual Art 3
Art 111 Drawing I 3
Art 121 Visual Communication & the Design Process 3
FCS 123 Textiles 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
Psyc 101 Introduction to Psychology 3
Electives to total 128 cr for the degree (incl 6 cr from
a list of adviser-directed electives) ..... —

Academic Minor Requirements

ARCHITECTURE MINOR

Arch 155 Introduction to Architecture 2
Arch 385 History of Architecture I: Pre-Modern 3
Arch 386 History of Architecture II: Modern 3
Courses selected from the following 10
Arch 266 Material & Methods
Arch 383 Architectural Site Design
Arch 463 Environmental Control Systems (3 cr—no lab)
Arch 464 Environmental Control Systems (3 cr—no lab)
Arch 482 Intro to Historic Preservation: Theories & Issues
Arch 483 Urban Theory & Issues
Arch 486 American Architecture
IA 281 History of the Interior Before Industrialization
IA 282 History of the Interior: 20th Century

INTERIOR ARCHITECTURE MINOR

IA 151 Introduction to Interior Design 3
IA 281 History of the Interior Before Industrialization 3
IA 282 History of the Interior: 20th Century 3
IA 368 Materials & Specifications 3
IA 478 Professional Practices for Interior Design 3
FCS 123 Textiles 3
Directed electives as approved by IA adviser 5

WOOD CONSTRUCTION AND DESIGN

For information on a major in forest products with an option in wood construction and design, see the Department of Forest Resources within the College of Forestry, Wildlife and Range Sciences section below.

Department of Art

Jill Dacey, Dept. Chair (203 Art and Arch. South 83844-2471; phone 208/885-6851). Faculty: Byron D. Clercx, Frank A. Cronk, Jill Dacey, William A. Doelle, David F. Giese, H. Lynne Haagensen, Karen D. Watts, George T. Wray. Adjunct Faculty: Sally G. Machlis, William P. Woolston. Affiliate Faculty: Robert Helm, Marilyn Lysohir, Jon Ochs.

The art curriculum at UI leads to a B.A., B.S.Art Ed., B.F.A. with a major in studio art, or B.F.A. with a major in photography degrees. This curriculum provides a broad base from which students may pursue a number of different career options. Students are required to complete a core of courses (the art core) designed to ensure an understanding of the historical and theoretical bases of art and design, while developing general competency in various media.

The B.F.A. degrees are designed for those students who wish to develop professional careers in art. Requirements for the degree are stringent, and include intense involvement in studio work in the senior year, closely monitored by all faculty members, culminating in the development of a portfolio and written statement in support of a professional exhibition. Because the B.F.A. degree is a professional degree, often preparatory to pursuit of a Master of Fine Arts (M.F.A.) degree, students must maintain a minimum 2.5 GPA.

The B.S.Art Ed. degree is designed for those students intending to pursue a career of teaching in the public schools. In addition to the studio course requirements, students take a range of courses in the College of Education that lead to teacher certification. The B.S.Art Ed. is a rigorous degree specializing in studio art.

The B.A. degree with a major in art is designed to ensure a broad, liberal education with an emphasis in art. Students pursuing this degree must meet the B.A. degree requirements listed in the College of Letters and Science section of this catalog.

The Art Department also offers two graduate degrees: the Master of Fine Arts and the Master of Arts in Teaching. Students interesting in graduate programs should contact the Art Department and consult the *Graduate Catalog*.

Courses

See part 6 for courses in Art (Art).

Curricular Requirements

ART CORE

Art 100 Visual Art 3
Art 111-112 Drawing I-II 6
Art 121-122 Visual Communication & the Design Process 6

STUDIO ART (B.F.A.)

The B.F.A. is a four-year degree divided into two parts: the preprofessional program (freshman and sophomore years) and the professional program (junior and senior years). Majors are eligible to apply for the professional program when they have completed the art core and the 200-level art course requirements (31 credits), the university core curriculum requirements (30 credits), and earned a minimum 2.5 GPA in art department courses. Application for the professional program may be made during the semester the student is completing these requirements. Transcripts and a portfolio of the student's art work must accompany the application. Students accepted into the professional program must complete 15 credits of 300-level studio courses with at least 6 of the 15 credits in one sequential studio area and 6 credits of art history before enrolling in Art 490 and Art 495. Students must maintain a minimum GPA of 2.5 and receive a grade of C or better in the 300- and 400-level art courses. Students may reapply for entry into the professional program any semester after their sophomore year.

Required course work includes the university requirements (see regulation J-3), the art core, and a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in one of the following areas: drawing, graphic design, painting, textile design, sculpture, photography, printmaking, or ceramics, and:

Art 301 History of Art: 19th Century 3
Art 302 History of Art: 20th Century 3
Art 408 Readings in Art 3
Art 410 Gallery 2
Art 490 Art Studio 16
Art 495 BFA Senior Thesis 4
History elective selected from Arch 385 or 386, ComG 382 or 384, Comm 445, FCS 329, IA 281 or 282, LArc 389, Phil 401 3
200-level studio courses selected from the following (graphic design majors must include Art 222, textile design majors must include Art 215, and interface design majors must include Art 272) 15-18
- Art 211-212 Drawing III-IV
- Art 214-215 Textile Design I-II
- Art 221 Graphic Design I
- Art 231 Painting I
- Art 241 Sculpture I
- Art 251 Printmaking I
- Art 261 Ceramics I
- Art 271-272 Interface Design I-II
- Art 281 Watercolor I
- Comm 281 Understanding Photography

300-level studio courses selected from the following (at least 6 of the 15 cr must be taken in one sequential studio area, e.g., Art 391-392, Comm 381-385) 15
- Art 311-312 Drawing V-VI
- Art 314-315 Textile Design III-IV
- Art 321-322 Graphic Design III-IV
- Art 331-332 Painting II-III
- Art 341-342 Sculpture II-III
- Art 351-352 Printmaking II-III
- Art 361-362 Ceramics II-III
- Art 371-372 Interface Design III-IV
- Art 391 Collage
- Art 392 Mixed Media
- Comm 381 Photographic Materials & Techniques
- Comm 385 Color Photography

Electives to total 128 cr for the degree ..... —

No more than a combined total of 9 credits of the following courses may be applied toward a B.F.A. degree: Art 404, 488, 497, 498, and 499.

ART (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, the art core, and a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in one of the following areas: drawing, graphic design, painting, textile design, sculpture, photography, printmaking, or ceramics, and:

Art 301 History of Art: 19th Century 3
Art 302 History of Art: 20th Century 3
Art 408 Readings in Art 3
Art 410 Gallery 2
History elective selected from Arch 385 or 386, ComG 382 or 384, Comm 445, FCS 329, IA 281 or 282, LArc 389, Phil 401 3
200-level studio courses selected from the following (students pursuing a studio emphasis in graphic design must include Art 222 in addition to Art 221, textile design majors must include Art 215, and interface design majors must include Art 272) 15-18
- Art 211-212 Drawing III-IV
- Art 214-215 Textile Design I-II
- Art 221 Graphic Design I
- Art 231 Painting I
- Art 241 Sculpture I
- Art 251 Printmaking I
- Art 261 Ceramics I
- Art 271-272 Interface Design I-II
- Art 281 Watercolor I
- Comm 281 Understanding Photography

300-level studio courses selected from the following (at least 6 of the 12 cr must be taken in one sequential studio area, e.g., Art 391-392, Comm 381-385) 12
- Art 311-312 Drawing V-VI
- Art 314-315 Textile Design III-IV
- Art 321-322 Graphic Design III-IV
- Art 331-332 Painting II-III
- Art 341-342 Sculpture II-III
- Art 351-352 Printmaking II-III
- Art 361-362 Ceramics II-III
- Art 371-372 Interface Design III-IV
- Art 391 Collage
- Art 392 Mixed Media
- Comm 381 Photographic Materials & Techniques
- Comm 385 Color Photography

Electives to total 128 cr for the degree ..... —

ART EDUCATION (B.S.Art Ed.)

Required course work includes the university requirements (see regulation J-3), the art core, a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in one of the following areas: drawing, graphic design, painting, textile design, sculpture, photography, printmaking, or ceramics, and the courses listed below.

Note: For registration in upper-division courses in the field of education, students must have been admitted to the teacher education program and have a GPA of 2.5, unless a higher average is stated as a prerequisite in the course description. For admission criteria, refer to "Admission to the Teacher Education Program" in the College of Education section of part four of this catalog.

Art 301 History of Art: 19th Century 3
Art 302 History of Art: 20th Century 3
Art 408 Readings in Art 3
Art 410 Gallery 2
History elective selected from Arch 385 or 386, ComG 382 or 384, Comm 445, FCS 329, IPD 281 or 282, LArc 389, Phil 401 3

200-level studio courses selected from the following (students pursuing a studio emphasis in graphic design must include Art 222 and textile design majors must include Art 251) 15-18
- Art 211-212 Drawing III-IV
- Art 214-215 Textile Design I-II
- Art 221 Graphic Design I
- Art 231 Painting I
- Art 241 Sculpture I
- Art 251 Printmaking I
- Art 261 Ceramics I
- Art 271-272 Interface Design I-II
- Art 281 Watercolor I
- Comm 281 Understanding Photography

300-level studio courses selected from the following (at least 6 of the 9 cr must be taken in one sequential studio area, e.g., Art 391-392, Comm 381-385) 12
- Art 311-312 Drawing V-VI
- Art 314-315 Textile Design III-IV
- Art 321-322 Graphic Design III-IV
- Art 331-332 Painting II-III
- Art 341-342 Sculpture II-III
- Art 351-352 Printmaking II-III
- Art 361-362 Ceramics II-III
- Art 371-372 Interface Design III-IV
- Art 391 Collage
- Art 392 Mixed Media
- Comm 381 Photographic Materials & Techniques
- Comm 385 Color Photography

ED 201 Introduction to Teaching 2
ED 314 Strategies for Teaching 3
ED 328 Introduction to Educational Technology 2
ED 431 or ED 431 and EDTE 435 Practicum 14
ED 445 Proseminar in Teaching 3
EDTE 463 Literacy Methods for Content Learning 3
EDTE 468 Historical & Philosophical Foundations of Education 3
EDTE 479 Secondary School Art Methods 3
Psyc 305 or ED 312 Developmental or Educational Psychology 2-3
Electives to total 128 cr for the degree ..... —

PHOTOGRAPHY (B.F.A.)

Required course work includes the university requirements (see regulation J-3), the art core, and a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in one of the following areas: drawing, graphic design, painting, textile design, sculpture, photography, printmaking, or ceramics, and:

Art 301 History of Art: 19th Century 3
Art 302 History of Art: 20th Century 3
Art 408 Readings in Art 3
Art 410 Gallery 2
Art 490 Art Studio 16
Art 495 BFA Senior Thesis 4
200-level studio courses selected from the following 9
- Art 211-212 Drawing III-IV
- Art 214-215 Textile Design I-II
- Art 221 Graphic Design I
- Art 231 Painting I
- Art 241 Sculpture I
- Art 251 Printmaking I
- Art 261 Ceramics I
- Art 271-272 Interface Design I-II
- Art 281 Watercolor I

300-level studio courses selected from the following (at least 6 of the 9 cr must be taken in one sequential studio area, e.g., Art 391-392, Art 361-362) 12
- Art 311-312 Drawing V-VI
- Art 314-315 Textile Design III-IV
- Art 321-322 Graphic Design III-IV
- Art 331-332 Painting II-III
- Art 341-342 Sculpture II-III
- Art 351-352 Printmaking II-III
- Art 361-362 Ceramics II-III
- Art 371-372 Interface Design III-IV
- Art 391 Collage
- Art 392 Mixed Media

Comm 281 Understanding Photography 3
Comm 381 Photographic Materials & Techniques 3
Comm 385 Color Photography 3
Comm 387 Digital Imaging 3
Comm 481 Advanced Photography 3
ComG 382 History of Photography 3
ComG 384 History of American Film 3
Intr 126 Film & International Culture 3
Electives to total 128 cr for the degree ..... —

No more than a combined total of 9 credits of the following courses may be applied toward a B.F.A. degree: Art 404, 488, 497, 498, and 499.

Academic Minor Requirements

ART MINOR

Art 100 Visual Art 3
Art 111-112 Drawing I-II 6
Art 121-122 Visual Communication & the Design Process 6
200- and 300-level art studio classes 9

Department of Biological and Agricultural Engineering

James A. DeShazer, Dept. Head (421 Engineering/Physics Bldg. 83844-0904; phone 208/885-6182; fax 208/885-7908; e-mail baengr@uidaho.edu). Faculty: Jan Boll, Charles E. Brockway, Mark E. Casada, James A. DeShazer, Edwin A. Dowding, Thomas F. Hess, Behzad Izadi, Bradley A. King, Jack M. McHargue, Myron P. Molnau, W. Howard Neibling, Charles L. Peterson, Robert F. Rynk, Geoffrey J. Shropshire.

The **departmental mission** is to conduct research, extension, and teaching programs to solve engineering and technological management problems in agricultural and natural resources areas. This is accomplished through an understanding of the complex interplay between the biological and physical sciences. The department's teaching program includes degree programs in agricultural engineering and biological systems engineering, which are offered through the College of Engineering, and in agricultural systems management, offered through the College of Agriculture. Graduate programs in agricultural engineering are offered through the College of Graduate Studies.

Agricultural Engineering is the profession that bridges the area between two fields of applied science—engineering and agriculture. It is oriented to the design of equipment and systems for production, processing, and transportation of food, feed, natural raw fiber, and forest products and for the effective use of natural resources. Agricultural engineers have the education and interests that make them uniquely capable of developing engineering solutions from agricultural and biological systems.

The agricultural engineering program at UI is designed to prepare students for a variety of interesting and rewarding careers. Many graduates are employed as design or development engineers by equipment manufacturers, irrigation companies, trade associations, engineering consulting firms, and governmental agencies. Others are self-employed in farm equipment manufacturing, consulting firms, and other engineering-related enterprises.

The graduate of this program can communicate engineering design concepts through oral and written communications and engineering graphics. The graduate has basic computer and mathematical skills, as well as knowledge of the physical and biological sciences for analysis of agricultural and natural resource problems, and can apply these skills and knowledge to the designing of equipment and systems. The graduate also has a social science and humanities background to aid in the understanding and appreciation of the impact engineering design has on society.

The curriculum leading to the B.S.Ag.E. is accredited by the Engineering Accreditation Commission of the Accrediting Board of Engineering and Technology (EAC/ABET). Students in this program are eligible to take the Fundamentals of Engineering (FE) Examination just before they graduate and to become registered professional engineers after graduating and completing an experience requirement.

Biological Systems Engineering is an undergraduate curriculum designed to prepare engineers to solve technological problems in systems that involve plants, animals, micro-organisms, and biological materials. They produce creative and effective solutions to problems facing the environment, our food supply, and all types of living organisms in a biologically complex, interconnected and changing world.

The graduate of this program can communicate engineering design concepts through oral and written communication and engineering graphics. The graduate has basic computer and mathematical skills, as well as knowledge of the physical and biological sciences for analysis of biological systems engineering problems, and can apply these skills and knowledge to the design of processes and systems. The graduate also has a social science and humanities background to aid in the understanding and appreciation of the impact engineering design has on society.

A broader emphasis in biology and chemistry is made within this curriculum compared to other engineering disciplines. Depending on

their electives, graduates in biological systems engineering have opportunities to work with consulting and industrial firms in environmental control and monitoring, bioremediation, hydrology, and water quality control. They may also work with food processing industries in storage, product development, and quality control. Other options include governmental agencies in water resources, environmental quality, and environmental protection.

The curriculum leading to the B.S.B.Sy.E. is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). Students in this program are eligible to take the Fundamentals of Engineering (FE) Examination just before they graduate.

Agricultural Systems Management emphasizes the use and management of equipment and systems based on an understanding of their design and operation. Agricultural systems management courses are designed to provide students with experience in systems technology and analysis of agricultural equipment and machinery applications, feed and food processing, agricultural electrification, soil and water management, and fabrication practices for agricultural and natural resource-based enterprises.

The undergraduate degree program in agricultural systems management (B.S.A.S.M.) is designed to prepare students to apply biological, physical, mechanical, and business knowledge to the production, service, sales, application, and management of the equipment and processes used in agriculture. The curriculum stresses courses in agriculture, agricultural systems management, and basic and applied sciences. It also includes a strong background in agricultural economics, accounting, and business. It prepares students for a variety of important and rewarding career opportunities. Many graduates return to farming, while others pursue careers as farm managers or are employed in agricultural and natural resource-oriented businesses, banking firms, educational institutions, or governmental agencies. This curriculum is recognized by the American Society of Agricultural Engineers.

The agricultural systems management courses are also available to nonmajors interested in obtaining an understanding of the technology used in modern agricultural production systems. A minor in agricultural systems management can be used to support degree programs in other departments.

Graduate study is offered in agricultural engineering with specialization in irrigation and drainage, water management, hydrology, and soil and water conservation; energy sources, use, and conservation; harvesting, handling, and processing agricultural crops; instrumentation and control; equipment design and development; and environmental systems and waste management. The degrees offered are the Master of Science, the Master of Engineering, and the Doctor of Philosophy.

Assessment of departmental objectives is accomplished by monitoring performance of students on the Fundamentals of Engineering examination and by student interviews. All graduates are interviewed at the time of graduation by the department to evaluate concerns, opportunities, and effectiveness of its educational programs. The assessment statistics can be obtained from the departmental office.

Courses

See part 6 for courses in Agricultural Engineering (AgE), Agricultural Systems Management (ASM), and Biological Systems Engineering (BSyE).

Curricular Requirements

AGRICULTURAL ENGINEERING (B.S.Ag.E.)

Designed to prepare students for professional careers in agricultural engineering. The curriculum is administered under the College of Engineering and is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology.

Required course work includes the university requirements (see regulation J-3) and:

AgE 142 Engineering for Living Systems	2
AgE 242 Agricultural Engineering Analysis & Design	2
AgE 351 Hydrology	3
AgE 352 Soil & Water Engineering	3
AgE 372 Agricultural Power & Machines	3
AgE 441 Instrumentation & Measurements for Biological Systems	3
AgE 449 Design of Agricultural Structures	3
AgE 456 Irrigation System Design	3
AgE 461 Agricultural Processing & Environment	3
AgE 462 Electric Power & Controls for Biological Systems	3
AgE 478, 479 Agricultural Engineering Design I, II	3
AgE 491 Seminar	1
ChE 321 Engineering Thermodynamics & Heat Transfer	3
Chem 111 Principles of Chemistry I	4
Chem 112 Principles of Chem II or Chem 275, 276 Carbon Compounds & Lab	4
CE 210 Engineering Statics	3
CE 211 Engineering Measurements	3
CE 320 Engineering Fluid Mechanics	3
CS 105 FORTRAN Programming for Engineers or CS 112 Introduction to Problem Solving & Programming	2-3
EE 207 Introduction to Electrical Engineering	3
Math 170, 175, 275 Analytic Geometry & Calculus	11
Math 310 Ordinary Differential Equations	3
ME 101 Engineering Graphics	2
ME 220 Engineering Dynamics	3
ME 340 Engineering Mechanics of Materials	3
Phys 211-212 Engineering Physics I, II	6
Soil 205 General Soils	3
Stat 301 Probability & Statistics	3
Biological science electives	3
Communications electives	2
Humanities and social sciences electives, must incl at least (1) one upper-division course that is the second course completed in that subject or (2) a course that has another humanities/social science course as a prerequisite	16
Technical electives—may incl upper-division biological science and must incl at least two formal 400-level agricultural engineering or biological systems engineering courses	11
Undesignated electives	2

The minimum number of credits for the degree is 128, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

A grade of C or better is required in each of the following courses before registration is permitted in upper-division engineering courses: AgE 242, Chem 111, CS 105 or 112, CE 210, ME 220, Math 275, and Phys 211.

AGRICULTURAL SYSTEMS MANAGEMENT (B.S.A.S.M.)

Designed to prepare students for careers in agriculture and agriculturally related businesses that require a knowledge of engineering methods. Emphasis is placed on the practical application of technology to agriculture. This curriculum is administered by the Department of Biological and Agricultural Engineering.

Required course work includes the university requirements (see regulation J-3) and:

ASM 112 Introduction to Agricultural Systems Management	3
ASM 115 Graphical Representation	2
ASM 200 Seminar	1
ASM 202 Agricultural Shop Practices	2
ASM 240 Computer Applications in Biological Systems	3
ASM 304 Agricultural Fluid Power Systems	1
ASM 305 Agricultural Machinery Systems	3
ASM 306 Agricultural Structures & Environmental Systems	3
ASM 315 Irrigation Systems & Water Management	3
ASM 331 Electric Power Systems for Agriculture	3
ASM 409 Agricultural Tractors & Power Units	4
ASM 414 Analysis of Agricultural Systems I	2
ASM 424 Analysis of Agricultural Systems II	2
ASM 433 Agricultural Processing Systems	3
Acct 201 Introduction to Financial Accounting	3
Acct 202 Introduction to Managerial Accounting	3
AgEc 278 Principles of Farm & Ranch Management	4
AgEc 391 Agribusiness Management	3
Biol 100 Introduction to Biology	4
BLaw 265 Legal Environment of Business	3
CE 218 Elementary Surveying	2
Chem 101 Introduction to Chem I or 111 Principles of Chem I	4
ComG 101 Fundamentals of Public Speaking	2
Econ 201, 202 Principles of Economics	6
Math 160 Survey of Calculus or Math 170 Analytic Geom & Calculus	4
Phys 100 Fundamentals of Physics	4
PlSc 102 The Science of Plants in Agriculture	3
Soil 205, 206 General Soils & Lab	4
Stat 251 Principles of Statistics	3
Advanced writing electives	3
Agricultural electives	3
Business electives	3
Humanities and social sciences electives	8
Life sciences electives	3
Technical electives	11
Electives to total 132 cr for the degree	—

BIOLOGICAL SYSTEMS ENGINEERING (B.S.B.Sy.E.)

Designed to prepare students for professional careers in biological systems engineering. The curriculum is administered under the College of Engineering and is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology.

Required course work includes the university requirements (see regulation J-3) and:

AgE 351 Hydrology 3
BSyE 142 Engineering for Living Systems 2
BSyE 242 Biological Systems Engineering Analysis & Design 2
BSyE 361 Transport Processes in Biological Systems 3
BSyE 386 Engineering Properties of Biological Materials 3
BSyE 441 Instrumentation & Measurements for Biological Systems 3
BSyE 462 Electric Power & Controls for Biological Systems 3
BSyE 478, 479 Biological Systems Engineering Design I, II 3
BSyE 491 Seminar 1
Biol 201 Introduction to the Life Sciences 4
Chem 111-112 Principles of Chemistry I-II 8
Chem 275, 276 Carbon Compounds & Lab or Chem 277, 278 Organic Chemistry I & Lab 4
CE 210 Engineering Statics 3
CE 320 Engineering Fluid Mechanics 3
CE 386 Engineering Economy 3
ChE 321 Engineering Thermodynamics & Heat Transfer 3
CS 105 FORTRAN Programming for Engineers or CS 112 Introduction to Problem Solving & Programming 2-3
EE 207 Introduction to Electrical Engineering 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
ME 101 Engineering Graphics 2
ME 340 Engineering Mechanics of Materials 3
MMBB 250 General Microbiology 5
MMBB 380, 382 Introductory Biochemistry & Laboratory 4
Phys 211-212 Engineering Physics I, II 6
Stat 301 Probability & Statistics 3
Biological science electives 3
Communications elective 2
Technical electives—may include upper-division biological sciences and must include at least two formal 400-level courses in Biological Systems Engineering or Agricultural Engineering 12
Humanities and social sciences electives, must incl at least (1) one upper-division course that is the second course completed in that subject or (2) a course that has another humanities/social science course as a prerequisite 16

The minimum number of credits for the degree is 131, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

A grade of C or better is required in each of the following courses before registration is permitted in upper-division engineering courses: BSyE 242, Chem 111, CS 105 or 112, CE 210, Math 275, and Phys 211.

Academic Minor Requirements

AGRICULTURAL SYSTEMS MANAGEMENT MINOR

ASM 202 Agricultural Shop Practices 2
At least four credits from the following skill courses:
- ASM 107 Beginning Welding (2 cr)
- ASM 115 Graphical Representation (2 cr)
- ASM 210 Small Engines (2 cr)

At least ten credits from the following application courses:
- ASM 304 Agricultural Fluid Power Systems (1 cr)
- ASM 305 Agricultural Machinery Systems (3 cr)
- ASM 306 Agricultural Structures & Environmental Systems (3 cr)
- ASM 315 Irrigation Systems & Water Management (3 cr)
- ASM 409 Agricultural Tractors & Power Units (4 cr)

The minimum number of credits in agricultural systems management courses for the minor is 19.

Department of Biological Sciences

Arthur W. Rourke, Dept. Chair (252 Life Sc. Bldg. 83844-3051; phone 208/885-6280). Faculty: Doyle E. Anderegg, Steven N. Austad, John A. Byers, Joseph G. Cloud, Mark E. DeSantis, Victor P. Eroschenko, Stephen K. Herbert, Rolf L. Ingermann, Michael B. Laskowski, Thomas A. McKean, Rodney A. Mead, James J. Nagler, R. Francis Rosenzweig, Arthur W. Rourke, George G. Spomer, John M. Sullivan, Anne W. Sylvester, Clifford F. Weil, Holly A. Wichman.

The biological sciences deal with the basic biological principles of all living things with major emphasis on both plant and animal forms.

The Department of Biological Sciences offers several undergraduate curricular options in botany, zoology, and biology. Though all curricula involve exposure to concepts fundamental to plants and animals, degrees in zoology and botany allow students to emphasize course work dealing with animals and plants, respectively. All curricula are designed to introduce the undergraduate to modern molecular approaches to the life sciences as well as more classical approaches.

The department offers both B.A. and B.S. degrees in biology, botany, and zoology. Graduates from the department traditionally enter a variety of fields and many continue their education. Recent graduates have entered allied health professions, agribusiness, medical school, veterinary school, graduate school, state and national agencies that deal with biology (e.g., fish and game departments, EPA), as well as a variety of consulting agencies.

Faculty and facilities are available to teach and conduct research in animal and plant ecology, reproductive biology, comparative, cellular, and organ physiology, plant physiology, aquatic biology, evolutionary biology of fishes, birds, mammals, and bacteria, systematic botany, developmental plant anatomy, vertebrate aging, vertebrate behavior, and genetics.

The department offers a nonthesis graduate degree, the M.Nat.Sc., which is designed to increase the breadth and depth of understanding of biology and is designed primarily for secondary teachers. The M.S. and Ph.D. degrees in botany and zoology are also offered.

Students with any questions should call the department chair at (208) 885-6280.

Courses

See part 6 for courses in Biology (Biol), Botany (Bot), and Zoology (Zool).

Curricular Requirements

BIOLOGY (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and the following (electives to be chosen in consultation with the departmental adviser):

Biol 101 Perspectives in Biology 1
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3
Biol 352 Experimental Genetics 2
Biol 442 Biological Evolution 3
Bot 311 Plant Physiology 4
Bot 425 Developmental Plant Anatomy 3
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 275, 276 Carbon Compounds & Lab or 277, 278 Organic Chem & Lab 4
Math 143 Pre-calculus Algebra & Analytic Geometry 3
MMBB 250 General Microbiology 5
Phys 111-112 General Physics I-II 8
Zool 324 Comparative Vertebrate Anatomy or 472, 473 Developmental Biology & Lab 4
Zool 414 Cell Physiology or 423 Comparative Vertebrate Physiology 3-4
Zool 484 Invertebrate Zoology or Ent 211 General Entomology 4

BOTANY (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and the following (electives to be chosen in consultation with the departmental adviser):

Bot 241 Systematic Botany 3
Bot 311 Plant Physiology 4
Bot 425 Developmental Plant Anatomy 3
Bot 432 Plant Ecology 3
Bot 452 Principles of Plant Molecular Biology 3
Biol 101 Perspectives in Biology 1
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3
Biol 352 Experimental Genetics 2
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 275, 276 Carbon Compounds & Lab or 277, 278, 372, 376 Organic Chemistry I-II & Lab ....4 or 9

Math 160 Survey of Calculus or Math 170 Analytic Geometry & Calculus I 4
MMBB 380 Introductory Biochemistry 3
Phys 111-112 General Physics I-II 8
Stat 251 Principles of Statistics 3
One of the following 3
- Chem 302 Principles of Physical Chemistry
- Chem J318/J418 Environmental Chemistry
- MMBB 480 Biochemistry & Molecular Biology
- MMBB 486 Plant Biochemistry

One of the following 3
- Engl 207 Persuasive Writing
- Engl 208 Personal & Exploratory Writing
- Engl 209 Inquiry-Based Writing
- Engl 309 Advanced Prose Writing
- Engl 313 Business Writing
- Engl 317 Technical & Engineering Report Writing

ZOOLOGY (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and the following (electives to be chosen in consultation with the departmental adviser):

Zool 324 Comparative Vertebrate Anatomy 4
Zool 414 Cell Physiology or 423 Comparative Vertebrate Physiology 3-4
Zool 481 Ichthyology or 482 Natural History of Birds or 483 Natural History of Mammals 3-4
Zool 484 Invertebrate Zoology or Ent 211 General Entomology 4
Biol 101 Perspectives in Biology 1
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3
Biol 352 Experimental Genetics 2
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 277, 278 Organic Chemistry I & Lab or 275, 276 Carbon Compounds & Lab 4
Chem 372 Organic Chem II or MMBB 380 Introductory Biochem 3
Math 160 Survey of Calculus or 170 Analytic Geometry & Calculus I 4
Phys 111-112 General Physics I-II 8
Stat 251 Principles of Statistics 3
Approved upper-division biology or zoology electives 3-4

PRE-MEDICAL AND PRE-DENTAL STUDIES

Admission to schools of medicine or dentistry involves satisfactorily fulfilling prerequisite course work, obtaining a sufficiently high score on the Medical College Admission Test (MCAT) or Dental Admission Test (DAT), submitting completed applications, and having a successful interview. The allied health adviser in the Department of Biological Sciences advises students in all areas of the application process and maintains MCAT and DAT study materials through the Reserve Desk in the University Library. A committee of three faculty members interviews pre-medical students (and pre-dental students on request), writes a letter of evaluation, and provides guidance to students in the interview process. A video recording of the interview is reviewed by the student with the allied health adviser to better prepare the student for formal interviews elsewhere.

Students with interests in either the M.D. or D.D.S. degree are urged to contact Rolf Ingermann, Gibb 237, during their first semester at the university.

PRE-NURSING STUDIES

Admission to a school of nursing involves meeting satisfactorily its entrance requirements, acceptable scholastic records or a satisfactory score on the nursing admission test, and possession of personal qualifications essential for effective nursing. Requirements of the institution to which the student will transfer should be investigated by the student to ensure inclusion of courses that meet those requirements.

The following two-year program is suggested for students who plan to transfer to a school of nursing.

Chem 101 Introduction to Chem I or 111 Principles of Chem I 4
Chem 275, 276 Carbon Compounds & Lab 4
FCS 205 Concepts in Human Nutrition 3
MMBB 250 General Microbiology or 154 Principles of Microbiology 3-5
Psyc 101 Introduction to Psychology 3
Soc 101 Introduction to Sociology 3
Stat 251 Principles of Statistics 3
Zool 120 Human Anatomy 4
Humanities and social sciences electives (at least 6 cr in each field) 21
Communications electives (3 cr must be in written communication) 6
Electives 2

Strongly recommended elective:

Math 143 Pre-calculus Algebra & Analytic Geometry 3

PRE-PHYSICAL THERAPY STUDIES

UI does not have a professional program in physical therapy and does not offer a degree program in pre-physical therapy. Students can, however, take courses that are prerequisites for admission into bachelor's, certificate, or master's degree programs in physical therapy at other institutions. Completion of these prerequisites does not guarantee acceptance into a physical therapy program and these classes are not necessarily a part of a degree program at UI. Consequently, we strongly urge students to pursue a B.S. or B.A. degree in an allied area (such as biology, psychology, sport science, and the like) while completing the prerequisites for admission to a physical therapy degree program. Students applying as pre-physical therapy majors will be temporarily placed in the biology major. The pre-physical therapy adviser in the Department of Biological Sciences advises students interested in preparing to enter into a professional program at another institution. Three basic plans of study at UI can lead to qualification for admission to a professional program in physical therapy: (1) graduation from UI with a bachelor's degree in some allied area and application to a master's degree program at some other institution, (2) graduation with a bachelor's degree in some allied area and application to a certificate program at some other institution, or (3) completion of the physical therapy prerequisites after two to three years of study at UI and subsequent application and transfer to a bachelor's degree program in physical therapy at some other institution. However, competition for all degree programs in physical therapy is very keen and most successful applicants, even to bachelor programs in physical therapy, already have a bachelor's degree in an allied area. Consequently, although we recommend the following classes for completion of the physical therapy prerequisites for most master, certificate, or bachelor programs, students must enroll at UI in a traditional bachelor's degree program in some allied area.

Recommended Preparation

The courses listed below include most of the essential courses for transfer into a typical program.

Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Chem 111-112 Principles of Chemistry I-II 8
Engl 101 Introduction to College Writing 3
Engl 102 College Writing & Rhetoric 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
Phys 111-112 General Physics I-II 8
Psyc 101 Introduction to Psychology 3
Psyc 305 Developmental Psychology 3
Psyc 311 Abnormal Psychology 3
Soc 101 Introduction to Sociology 3
Zool 120 Human Anatomy 4
Humanities electives 3
Electives 14

Academic Minor Requirements

BIOLOGY MINOR

Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3
One of the following 3-5
- Bot 311 Plant Physiology
- Zool 120 Human Anatomy
- Zool 414 Cell Physiology
- Zool 423 Comparative Vertebrate Physiology

BOTANY MINOR

Bot 241 Systematic Botany 3
Bot 311 Plant Physiology 4
Biol 201 Introduction to the Life Sciences 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3

ZOOLOGY MINOR

Zool 324 Comparative Vertebrate Anatomy 4
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Course in animal physiology 3-4
One of the following 3-4
- Biol 331 General Ecology
- Zool 481 Ichthyology
- Zool 482 Natural History of Birds
- Zool 483 Natural History of Mammals
- Zool 484 Invertebrate Zoology

Department of Business

C. Randall Byers, Dept. Head (338A Admin. Bldg. 83844-3178; phone 208/885-6295; e-mail rbyers@uidaho.edu). Faculty: Robert C. Ash, Jeffrey J. Bailey, T. Jeff Butterfield, C. Randall Byers, Sue Clark, Raymond Dacey, Byron J. Dangerfield, Joseph J. Geiger, Dwayne D. Gremler, Terrance Grieb, John J. Lawrence, Michael A. McCollough, Lawrence H. Merk, John S. Morris, Linda J. Morris, C. R. Narayanaswamy, Philip D. Olson, Norman Pendegraft, Kathy L. Pettit-O'Malley, Steven W. Pharr, Mario G. Reyes, L. David Van Over.

The five major fields (finance, human resources management, information systems, marketing, and production/operations management) within the department lead to the B.S.Bus. degree.

These programs provide a solid foundation in the liberal arts, a broad professional preparation in business, and in-depth course work in a major field. They are designed to prepare the student for a lifetime of continuing liberal and professional education and general management. The department offers minors in international business, small enterprise management, and business.

The finance major prepares students for careers in commercial lending, estate planning, security analysis, portfolio management, and corporate finance.

The human resources management major prepares students for opportunities in the areas of management, personnel administration, recruitment and selection, compensation and benefits, and labor relations.

The information systems major prepares students in the areas of systems analysis and development, data base management, networking, and systems marketing.

The marketing major prepares students for opportunities in a broad range of areas, including management of retail and wholesale distribution, advertising, market research, and customer service operations.

The production/operations management major prepares students for management positions in operations planning and control, quality management and purchasing.

The business minor is designed for students outside of the CBE who desire an exposure to the field of business. The minor covers the primary fields in business, provides a background in business as a basis for further graduate work, and complements the student's academic major and future professional career.

The international business minor and the small enterprise management minor, open only to students with a major in the College of Business and Economics, complement each of the majors in the college, and prepare students to extend their disciplinary mastery to the global economy or to focus on the management of small business enterprises.

Courses

See part 6 for courses in Business (Bus).

Curricular Requirements

FINANCE (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3), the college requirements, and:

Acct 300 Accounting Concepts & Systems 3
Acct 301 Corporate Accounting & Reporting 3
Bus 302 Intermediate Financial Management 3
Bus 401 Investments 3
Bus 407 Financial Institutions 3
Bus 409 Problems in Financial Management 3
Econ 343 Money & Banking (may be used to fulfill college core economics requirements) 3
One course selected from the following 3
- Bus 405 Portfolio Management
- Bus 408 Security Analysis
- Bus 481 International Finance

Two courses selected from the following 6
- Acct 385 Cost & Management Accounting
- Acct 430 Accounting for Public Sector Entities
- Acct 490 Advanced Corporate Accounting & Reporting
- Bus 327 Services/Nonprofit Marketing
- Bus 362 Real Property Appraisal OR Bus 364 Insurance
- Bus 405, 408, or 481 (if not chosen above)
- Bus 421 Marketing Research & Analysis
- Econ 352 Intermediate Microeconomic Analysis
- Econ 353 Quantitative Methods in Economics
- Econ 407 Public Finance OR Econ 408 State & Local Govt Finance
- Econ 453 Econometrics
- Stat 401 Statistical Analysis

HUMAN RESOURCES MANAGEMENT (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3), the college requirements, and:

Acct 381 Accounting for Managers & Investors 3
Bus 412 Human Resource Management 3
Bus 413 Organizational Behavior 3
Bus 416 Staffing & Compensation 3
Bus 418 Organization Theory 3
Bus 441 Labor Relations 3
One course selected from the following 3
- Bus 414 Entrepreneurship
- Bus 415 Small Business Management
- Bus 422 Sales Force Management
- Econ 441 Labor Economics (may be used to fulfill college core economics requirements)

One course selected from the following 3
- ComG 235 Organizational Communication
- ComG 331 Conflict Management
- ComG 332 Communication & the Small Group
- Psyc 316 Industrial Psychology
- Psyc 320 Introduction to Social Psychology

INFORMATION SYSTEMS (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3), the college requirements, and:

Bus 250 Introductory Systems Development 3
Bus 352 Modern Information Technology 3
Bus 355 Systems Analysis & Design 3
Bus 453 Database Design 3
Two courses (in addition to those taken to meet the CBE requirement) selected from the following list of communications electives 6
- ComG 233 Interpersonal Communication
- ComG 235 Organizational Communication
- ComG 331 Conflict Management
- ComG 332 Communication & the Small Group
- ComG 347 Persuasion
- ComG 435 Strategies of Organizational Communication
- Comm 431 Professional Presentation Techniques
- Comm 449 Theory in Communication
- Engl 207 Persuasive Writing or 208 Personal & Exploratory Writing or 209 Inquiry-Based Writing
- Engl 313 Business Writing
- Engl 317 Technical & Engineering Report Writing
- Phil 210 Critical Thinking

One course selected from the following list of project electives 3
- Bus 378 Project Management
- Bus 455 IS Project

Three courses in addition to those taken to meet the above requirements selected from the following list of IS electives 9
- Bus 378 Project Management
- Bus 404 Special Topics (with permission of area coordinator)
- Bus 439 Systems & Simulation
- Bus 452 Business Telecommunications Management
- Bus 454 Current Issues in Information Systems
- Bus 455 IS Project
- Bus 472 Operations Planning & Scheduling
- Acct 381 Accounting for Managers & Investors
- Acct 385 Cost & Management Accounting
- Acct 492 Auditing & Controls
- CS 371 Expert Systems
- Geog 385 GIS Primer
- Geog 470 Computer Mapping
- ME 409 Human Factors in Engineering Design
- Min 410 Simulation of Engineering Systems

In addition to all other requirements, students must take at least 6 credits from outside the CBE in addition to those specifically required. These may be chosen from the non-CBE IS technical electives or from other courses.

MARKETING (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3), the college requirements, and:

Acct 381 Accounting for Managers & Investors 3
Bus 324 Consumer Behavior 3
Bus 420 Promotional Strategy 3
Bus 421 Marketing Research & Analysis 3
Bus 428 Product Management 3
One of the following communication courses 3
- ComG 233 Interpersonal Communication
- ComG 235 Organizational Communication
- ComG 331 Conflict Management
- ComG 332 Communication & the Small Group

Two of the following CBE marketing electives 6
- Bus 325 Retail Distribution Management
- Bus 326 Marketing Channels Management
- Bus 327 Services/Nonprofit Marketing
- Bus 415 Small Business Management
- Bus 422 Sales Force Management
- Bus 453 Database Design
- Bus 456 Quality Management
- Bus 470 Purchasing & Materials Management
- Bus 482 International Marketing

Two of the following non-CBE marketing electives (approved by the student's marketing adviser) 6
- Comm 265 Advertising & Society
- Comm 360 Broadcast Media Advertising
- Comm 362 Print Media Advertising
- Comm 364 Advertising Media Planning
- Geog 200 World Regional Geography (if not taken to fulfill UI core social science requirement)
- Geog 340 Business Location Decisions
- Geog 360 Population Dynamics & Distribution
- Geog or LArc 385 GIS Primer
- Phil 210 Critical Thinking
- Psyc 316 Industrial Psychology
- Psyc 320 Introduction to Social Psychology
- Psyc 325 Cognitive Psychology
- Soc 412 Society & Personality
- Stat 401 Statistical Analysis
- Stat 422 Sampling Methods
- Stat 457 Nonparametric Statistics

PRODUCTION/OPERATIONS MANAGEMENT (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3), the college requirements, and:

Acct 381 Accounting for Managers & Investors or 385 Cost & Management Accounting 3
Bus 378 Project Management 3
Bus 456 Quality Management 3
Bus 470 Purchasing & Materials Management 3
Bus 472 Operations Planning & Scheduling 3
Bus 478 Seminar in Operations Management or 398 Internship (spring or fall) 3
Two courses selected from the following 6
- Acct 305 Accounting Information Systems
- Acct 486 Contemporary Management Accounting Issues
- Acct 492 Auditing & Controls
- Bus 355 Systems Analysis & Design
- Bus 412 Human Resource Management
- Bus 413 Organizational Behavior
- Bus 418 Organization Theory
- Bus 439 Systems & Simulation
- Bus 441 Labor Relations
- Bus 453 Database Design

Academic Minor Requirements

BUSINESS MINOR

This minor is not open to students pursuing other college business options (e.g., foreign language/business option, music/business option, forest products/business option) or to students pursuing a major in the College of Business and Economics.

Students in the business minor must achieve at least a 2.4 GPA in statistics, economics, and accounting courses before enrolling in upper-division CBE courses.

Bus 301* Financial Management 3
Bus 311* Introduction to Management 3
Bus 321* Marketing 3
Bus 350* Management Information Systems 3
Bus 370* Production/Operations Management 3
Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
Econ 202 Prin of Economics or 272 Foundations of Econ Analysis 3-4
Stat 251 Prin of Statistics or 271 Statistical Inference & Decision Analysis 3-4

*Bus 340 through 346 may be substituted.

INTERNATIONAL BUSINESS MINOR

Note: This minor is limited to students majoring in the College of Business and Economics.

Bus 380 International Business 3
Bus 481 International Finance or 482 International Marketing 3
Bus 485 Advanced International Business 3
Econ 446 International Economics 3
One of the following courses or another approved elective 3
- Bus 404 Special Topics: World of International Business
- Bus 406 Study Abroad (if not used to satisfy other minor requirements)
- Bus 481 International Finance (if not taken above)
- Bus 482 International Marketing (if not taken above)
- Econ 390 Comparative Economic Systems
- Econ 447 Economics of Developing Countries

Foreign language mastery is required equivalent to completion of the introductory and intermediate courses, and an upper-division course in the language (French, German, Japanese, Russian, Spanish). A semester of study and/or internship in another country is recommended. CBE students currently have direct access to academic programs at Växjö University (Sweden), Ecole Supérieure de Commerce de Chambéry (France), Pontifica Universidad Católica del Ecuador, Griffith University (Australia), Fachhochschule fur Technik und Wirtschaft Berlin (Germany), and University of Zaragoza (Spain). Students soon will have direct access to the Haagse Hogeschool (The Netherlands), the Southern Denmark Business School, and the University of Newcastle upon Tyne (United Kingdom). Further, CBE students have access to programs in Australia, Chile, France, Italy, and Spain through the University Studies Abroad Consortium, and to 97 schools in 35 countries through the International Student Exchange Program. Internships are developed on an ad hoc basis.

SMALL ENTERPRISE MANAGEMENT MINOR

Note: This minor is limited to students majoring in the College of Business and Economics.

Acct 381 Accounting for Managers & Investors (students may substitute Acct 300 and 301, 6 cr) 3
Bus 413 Organizational Behavior 3
Bus 414 Entrepreneurship 3
Bus 415 Small Business Management 3
Bus 422 Sales Force Management 3
And one of the following courses 3
- Bus 261 Real Estate
- Bus 325 Retail Distribution Management
- Bus 327 Services/Nonprofit Marketing
- Bus 364 Insurance
- Bus 472 Operations Planning & Scheduling

Department of Chemical Engineering

Roger A. Korus, Dept. Chair (312 Buchanan Engr. Lab. 83844-1021; phone 208/885-6793). Faculty: Wudneh Admassu, Thomas E. Carleson, David C. Drown, Louis L. Edwards, Jr., Roger A. Korus, Jin Y. Park, Jay J. Scheldorf, George M. Simmons, Margrit von Braun.

Chemical engineering combines the science of chemistry with the discipline of engineering in order to solve problems and to increase process efficiency. One of the most attractive aspects of a chemical engineering future is the variety of work available. Chemical engineering is a blend of physics, chemistry, and mathematics; thus, a chemical engineer possesses a versatility that gives him or her many opportunities for employment in fields such as pulp and paper, environmental engineering, food products, nuclear power, petroleum and petrochemicals, semiconductors, synthetic fuels, radioisotope applications, plastics and polymers, pharmaceuticals, education, biomedical engineering, computer applications, alternate energy sources, steel, and textiles. A chemical engineer can choose work in any of the following areas: research and development, design and construction, operations, management, teaching, or technical sales.

The mission of the Department of Chemical Engineering is to provide quality educational programs firmly based in fundamental concepts and to perform and publish outstanding chemical engineering research. The goals and objectives of the program include graduating students who are (1) well grounded in the fundamentals of chemical engineering, (2) schooled in the practice of chemical engineering including the social and economic implications of engineering analysis and design, and (3) instilled with a sense of responsibility, ethics, and a commitment to life-long learning. The department is committed to (1) maintaining experienced, professional instructors, modern facilities, and close interaction between the department and the chemical engineering community, (2) extending the knowledge base in chemical engineering through research, continuing education, technology transfer, and engineering practice, and (3) providing these services in the most cost effective manner for both students and taxpayers. Progress toward these goals and objectives is assessed by student performance on the nationally administered Fundamentals in Engineering Examination, exit interviews with graduating students, and surveys of graduated students and their employers.

The faculty of the Department of Chemical Engineering is dedicated to excellence in teaching. It is the faculty's goal to provide the students with a strong, well-rounded background for immediate entry into the industrial workforce or for graduate study. This background includes the theoretical aspects of chemical engineering as well as practical work experiences. Thus, most of the equipment that is installed in the Chemical Engineering laboratory is on the scale of pilot plant equipment. Because much of the equipment is made of glass, students are able to see at a glance what processes occur and where the streams are flowing. The department has a two-story distillation column, a gas absorber, two types of evaporators, a two-stage chemical reactor, a catalytic reactor, liquid extraction equipment, and supporting analytical equipment such as gas chromatographs. All of this equipment is used by undergraduate

students. Proof that the departmental goals are being achieved is in the job-placement statistics for chemical engineers from UI. Most receive job offers before graduation and many graduates now hold high-level technical and management positions in industry, government, and academia.

The department has available a number of fellowships and assistantships for students. Support includes fellowships from the Potlatch Foundation, Weyerhaeuser Company, James River, and Lamb Weston; UI graduate assistantships; and research assistantships.

The graduate program in chemical engineering also includes provisions for study leading to a master's degree in chemical engineering for students who have a B.S. degree in a related field. This program requires that the student enroll for at least one trial semester as an undergraduate student in chemical engineering.

Courses

See part 6 for courses in Chemical Engineering (ChE).

Curricular Requirements

CHEMICAL ENGINEERING (B.S.Ch.E.)

Required course work includes the university requirements (see regulation J-3) and:

ChE 123 Computations in Chemical Engineering 2
ChE 223 Material & Energy Balances 3
ChE 321 Engineering Thermodynamics & Heat Transfer 3
ChE 330 Stagewise Operations 3
ChE 423 Reactor Kinetics & Design 3
ChE 430-431-432 Transport & Rate Processes I-II-III 8
ChE 433, 434 Chemical Engineering Lab I, II 2
ChE 444 Process Analysis & Control 3
ChE 445 Digital Process Control 3
ChE 453-454 Chemical Process Analysis & Design 6
ChE 491 Seminar 1
Chem 111-112 Principles of Chemistry I-II 8
Chem 277, 278 Organic Chemistry I & Lab 4
Chem 305, 307 Physical Chemistry & Lab 4
Chem 372, 374 Organic Chemistry II & Lab 4
CE 210 Engineering Statics 3
CE 320 Engineering Fluid Mechanics 3
CS 105 FORTRAN Programming for Engineers 2
Econ 201 Principles of Economics 3
EE 207 Introduction to Electrical Engineering 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
Phys 211-212 Engineering Physics I-II 6
Chemical engineering electives 3
Chemical/bioscience electives 4
Engineering electives 3
Humanities and social sciences electives, incl at least (1) one upper-division course that is the second course completed in that subject or (2) a course that has another humanities/social science course as a prerequisite 13
Communication electives 2
Mathematics electives 3
Technical electives 3
Undesignated electives 3

The minimum number of credits for the degree is 128, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

A grade of C or better is required in each of the following courses before registration is permitted in upper-division chemical engineering courses: Chem 111 and 112, ChE 223 and 321, CE 210, and Math 275 and 310.

Students transferring ChE 223 or its equivalent from a university without an ABET accredited chemical engineering program must pass a test on the subject matter of this course before acceptance of the course for certification.

A passing grade (D or higher) is required in each of the following courses before registration is permitted in upper-division chemical engineering courses: ChE 123, CS 105, Math 170 and 175, and Phys 211 and 212.

Any student majoring in chemical engineering may accumulate no more than four grades of D or F in UI mathematics, science, or engineering courses that are used to satisfy junior certification requirements. Included in this number are multiple repeats in a single class or single repeats in multiple classes. A warning will be issued in writing to students who have accumulated two grades of D or F in UI mathematics, science, or engineering courses used to satisfy curricular requirements.

An average GPA of at least 2.0 is required for all chemical engineering courses used to satisfy the curricular requirements.

Department of Chemistry

Peter R. Griffiths, Dept. Chair (116 Malcolm M. Renfrew Hall 83844-2343; phone 208/885-6552; e-mail chemoff@uidaho.edu). Faculty: Thomas E. Bitterwolf, Leszek Czuchajowski, W. Daniel Edwards, T. Rick Fletcher, Steven D. Gammon, Peter R. Griffiths, Sharon J. Hutchison, Robert L. Kirchmeier, Jeanne L. McHale, Nicholas R. Natale, Pamela J. Shapiro, Jean'ne M. Shreeve, Jason R. Stenzel, Ray von Wandruszka, Chien M. Wai, Richard V. Williams.

Chemistry is the central science—the foundation on which a variety of applied and nonapplied disciplines build. Chemistry deals with the composition, structure, and properties of substances and the changes they undergo. It is the study of the materials of which the entire universe is composed. Chemistry graduates will find an impressive array of options and exciting opportunities in fields such as basic research, environmental protection, instrumentation, the search for and synthesis of new therapeutic drugs, new product and process development, technical marketing, market research, forensic chemistry, teaching at all levels, and information science. Moreover, an education in chemistry is valuable in health sciences such as medicine, pharmacology, clinical chemistry, and industrial hygiene. It can be useful as well in nontechnical areas such as advertising, journalism, patent law, banking, and investment counseling. The options are bounded only by the limits of one's imagination.

There are four distinct undergraduate curricula designed to meet a wide range of professional needs. The general chemistry curriculum leading to the B.S. degree provides a suitable foundation in chemistry for aspiring secondary-school teachers or for medicine. Even so, this is a subminimal curriculum for students who wish to become professional chemists. The professional curriculum (B.S.) is strongly recommended for students who are interested in practicing chemistry as a career, including graduate study for an advanced degree in chemistry or a related field. The degree is certifiable to the American Chemical Society. For those interested in information science, the technical literature curriculum (B.S.) is recommended. The combination of chemistry with marketing or business can be accomplished via the B.Tech. degree, which gives an excellent foundation for a successful career in sales or business.

Students majoring in chemistry at UI have the very good fortune to interact with an award-winning, distinguished teaching faculty. They have a unique opportunity to participate in undergraduate research in a nurturing environment where they work side by side with graduate students, postdoctoral fellows, and faculty members. Very often the research carried out by undergraduates results in publications in leading chemical journals. As a result of the strong research programs in the department, undergraduates have the opportunity in their courses to have hands-on experience with, or to acquire data from, modern sophisticated instrumentation such as FT nuclear magnetic resonance spectrometers, gas chromatographs interfaced with mass spectrometers, and laser Raman, infrared and ultraviolet spectrometers, in addition to the more classical techniques. Considerable use of computers is made in laboratory courses and as an aid to instruction. Because our students receive a first-class education, they are in demand by prospective employers and graduate schools.

The Department of Chemistry offers graduate study leading to the degrees of Master of Science (thesis and nonthesis options), Master of Arts in Teaching, and Doctor of Philosophy. Concentrations within the major in chemistry are analytical, inorganic, organic, and physical chemistry. Students who intend to pursue a graduate degree in chemistry should prepare by completing the professional B.S. degree. Courses in mathematics, physics, computer science, and chemistry in addition to those required for that degree are strongly recommended. All students entering any of the graduate programs in chemistry are required to demonstrate proficiency in chemistry by taking a series of examinations that have questions at the advanced undergraduate level in analytical, inorganic, organic, and physical chemistry. Undergraduates are encouraged to discuss graduate school and career opportunities with the chair of the department or with chemistry faculty members early in their residency at UI.

Courses

See part 6 for courses in Chemistry (Chem).

Curricular Requirements

CHEMISTRY: GENERAL (B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.S. degree, and:

Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 277, 372 Organic Chemistry I, II 6
Chem 278, 376 Organic Chemistry Lab I, II 3
Chem 305-306 Physical Chemistry 6
Chem 307-308 Physical Chemistry Lab 2
Chem 409 Proseminar 1
CS 101 Introduction to Computer Science or higher CS course 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Phys 211, 212, 213 Engineering Physics I, II, III 12

This is a subminimal curriculum for students wishing to enter the profession of chemistry, but it will provide a suitable foundation in chemistry for students who intend to enter secondary-school teaching or medicine.

CHEMISTRY: PROFESSIONAL (B.S.)

Note: Students who complete this curriculum will be certifiable to the American Chemical Society.

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.S. degree, the courses listed in the "Chemistry General" curriculum (above), and:

Chem 454 Instrumental Analysis 4
Chem 463-464, 465 Inorganic Chemistry & Lab 7
Foreign language courses 8
And two additional chemistry courses having Chem 306 as a prerequisite, or an alternate upper-division course in math or physics in combination with one chemistry course having Chem 306 as a prerequisite.

CHEMISTRY: TECHNICAL LITERATURE (B.S.)

Required course work includes the university requirements (see regulation J-3), general requirements for the B.S. degree, and:

Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 277, 372 Organic Chemistry I, II 6
Chem 278, 376 Organic Chemistry Lab 3
Chem 305-306 Physical Chemistry 6
Chem 307-308 Physical Chemistry Lab 2
Chem 409 Proseminar 1
Chem 441 Chemical Literature 1
Chem 463 Inorganic Chemistry 3
CS 101 Introduction to Computer Science or higher CS course 3
Engl 317 Technical & Engineering Report Writing 3
Fren 101-102 Elementary French I-II 8
Germ 101-102 Elementary German I-II 8
Germ 201-202 Intermediate German I-II 8
Math 170, 175, 275 Analytic Geometry & Calculus 11
Phys 211, 212, 213 Engr Physics & Lab or 111-112 General Physics I-II 8-12

CHEMISTRY: TECHNOLOGICAL (B.Tech.)

Note: Students who complete this curriculum will be certifiable to the American Chemical Society.

Required course work includes the university requirements (see regulation J-3) and:

Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 277, 278 Organic Chemistry I & Lab 4
Chem 305-306 Physical Chemistry 6
Chem 307-308 Physical Chemistry Lab 2
Chem 372, 376 Organic Chemistry II & Lab 5
Chem 409 Proseminar 1
Chem 454 Instrumental Analysis 4
Chem 463-464, 465 Inorganic Chemistry & Lab 7
Acct 201 Introduction to Financial Accounting 3
BLaw 265 Legal Environment of Business 3
Bus 321 Marketing 3
ComG 101 Fundamentals of Public Speaking 2
CS 101 Introduction to Computer Science or higher CS course 3
Econ 100 Contemporary Economics and 272 Foundations of Economic Analysis or 201, 202 Principles of Economics 6-7
Engl 317 Technical & Engineering Report Writing 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 330 Linear Algebra 3
Phys 211, 212, 213 Engineering Physics I, II, III 12
Stat 251 Principles of Statistics 3
Two courses in chem that require Chem 306 as a prereq, or one chem course requiring Chem 306 as a prereq and one upper-div course in math or physics 6

It is strongly recommended that students take at least one year of German or Russian and ChE 223 (Material and Energy Balances).

Academic Minor Requirements

CHEMISTRY MINOR

This program is designed to give a non-chemistry major a sufficient background in general chemistry and laboratory techniques to improve his or her employment prospects as a laboratory technician and to improve the technical background of the student interested in science education or communication.

Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 277, 278 Organic Chemistry I & Lab 4
Chem 302, 303 Principles of Physical Chemistry & Lab 4
Chem 372 Organic Chemistry II 3

Department of Civil Engineering

Howard S. Peavy, Dept. Chair (104 Buchanan Engr. Lab. 83844-1022; phone 208/885-6782). Faculty: Fouad M. Bayomy, Charles E. Brockway, Roger L. Ely, John I. Finnie, Donald F. Haber, James H. Hardcastle, Terry R. Howard, Zaher K. Khatib, Michael D. Kyte, Chyr Pyng Liou, James H. Milligan, Richard J. Nielsen, Howard S. Peavy, P. Steven Porter, Parviz F. Rad, Edwin R. Schmeckpeper, Sunil Sharma, Alfred T. Wallace.

Civil engineering consists of the application of scientific principles to the design, construction, and maintenance of public and private works that constitute the infrastructure for human populations. From a historical aspect, the pyramids of Egypt, the water resources systems that supported the agricultural society of ancient Babylonia and Assyria, the public buildings of Greece and Rome, the roads that linked the Roman Empire, and the railroads and barge canals of the early United States were all civil engineering projects that served the people of their times. Today's civil engineers are still involved in building and maintaining the infrastructure necessary for modern society to function. A civil engineer may be involved in the design and construction of highways, bridges, buildings, water conveyance systems, water and wastewater treatment plants, dams, airports, and other constructed projects. Civil engineers may also be involved in planning for traffic controls, food plain management, and water and air quality management. The graduates of civil engineering programs may work with consulting engineering firms, governmental agencies, construction contractors, or manufacturing industries.

In the foreseeable future, population growth and relocation should create a steady demand for infrastructure growth. The concept of environmentally sensitive and resource sustainable development is emerging as the tenet for future growth. Civil engineers will have to apply evolving technologies and develop innovative solutions to ensure wise stewardship of our limited natural resources. Students who enter civil engineering can anticipate a challenging and rewarding career.

Lower-division courses in civil engineering consist of a common core of basic courses in science, mathematics, and engineering required of most students within the college. Students must pass an examination covering math and basic science courses before they can register for upper-division courses. Required course work in the junior and senior years provides the student with a broad background in civil engineering subjects while 15 credits of technical electives permit some specialization at the undergraduate level.

The Department of Civil Engineering occupies the first floor of the Buchanan Engineering Laboratory Building with some additional office and laboratory space in the basement and on the second floor of the building. Maintenance and replacement of existing equipment is provided by funds from research projects, from alumni donations, and from state educational funds. Instructional and research equipment include modern computing and data acquisition equipment.

The department offers three graduate degree programs: (1) Master of Science (30 credits, with thesis), (2) Master of Engineering (33 credits, nonthesis), and (3) Doctor of Philosophy (in limited specialty

areas). Course work requirements in each of the degree programs is relatively flexible depending on student interest and course availability. Financial assistance is available on a competitive basis in the form of instructional and graduate research assistantships. Students interested in graduate studies should select a specialty area in which they wish to study. Foreign students must have a TOEFL score of at least 550 for admission to any departmental graduate degree program.

The mission of the Department of Civil Engineering is to provide a high quality education at both the undergraduate and graduate level, emphasizing the needs of Idaho and the region. The goals and objectives of the program include graduating students that are: (1) well grounded in the fundamentals of engineering and in the practice of civil engineering, (2) schooled in real-world scenarios that include the social and economic implications of engineered projects, and (3) instilled with a sense of responsibility, ethics, and a commitment to life-long learning. Additionally, the department is committed to: (1) maintaining experienced, professional instructors, modern facilities, and close interaction between the department and the professional engineering community in Idaho, (2) extending the knowledge base in civil engineering through research, continuing education, technology transfer, and professional practice, and (3) providing these services in the most cost effective manner for both the students and the taxpayers. Progress toward these goals and objectives is assessed by student performance on the nationally administered fundamentals of engineering exam, exit interviews with graduating students, surveys of graduated students and their employers, and by an external advisory committee composed of practicing civil engineers from the state and the region.

Courses

See part 6 for courses in Civil Engineering (CE) and Engineering Management (EM).

Curricular Requirements

CIVIL ENGINEERING (B.S.C.E.)

To graduate in this program, a minimum grade of C must be earned in all engineering, mathematics, and science courses used to satisfy the curriculum.

Any student majoring in civil engineering may accumulate no more than 14 credits of D or F in UI mathematics, science, or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single class or single repeats in multiple classes. A warning will be issued in writing to students who have accumulated 7 credits of D or F in UI mathematics, science, or engineering classes used to satisfy curricular requirements.

Required course work includes the university requirements (see regulation J-3) and:

CE 115 Introduction to Civil Engineering 2
CE 210 Engineering Statics 3
CE 211 Engineering Measurements 3
CE 215 Civil Engineering Analysis & Design 2
CE 320 Engineering Fluid Mechanics 3
CE 321 Hydrology 3
CE 322 Hydraulics 3
CE 323 Hydraulics Laboratory 1
CE 331 Sanitary Engineering 4
CE 342 Theory of Structures 3
CE 357 Mechanical Properties of Construction Materials 3
CE 360 Engineering Properties of Soils 3
CE 372 Fundamentals of Transportation Engineering 4
CE 386 Engineering Economy 3
CE 441 Reinforced Concrete Design or 444 Steel Design 3
CE 491 Civil Engineering Professional Seminar 1
ChE 321 Engineering Thermodynamics & Heat Transfer 3
Chem 111-112 Principles of Chemistry I-II 8
EE 207 Introduction to Electrical Engineering 3
Engl 317 Technical & Engineering Report Writing 3
One of the following 3-5
  Biol 201 Introduction to the Life Sciences
  Chem 302 Principles of Physical Chemistry
  Geol 101 Physical Geology
  Geol 111 Physical Geology for Science Majors
  MMBB 250 General Microbiology
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
ME 101 Engineering Graphics 2
ME 220 Engineering Dynamics 3
ME 340 Engineering Mechanics of Materials 3
Phys 211, 212 Engineering Physics I-II 6
Stat 301 Probability & Statistics 3
Humanities and social sciences electives, incl at least (1) one upper-division course that is the second course completed in that subject or (2) a course that has another humanities/social science course as a prerequisite 16
Technical electives (incl at least 9 cr from CE 421, 422, 436, 441, 444, 460, 473, 474, 475) 15

The minimum number of credits for the degree is 129, not counting Engl 103, Math 143, and other courses that might be required to remove deficiencies.

School of Communication

Roy Alden Atwood, Director (Communication Bldg. 83844-1072; phone 208/885-6458). Faculty: Roy Alden Atwood, Anna Banks, Stephen P. Banks, Don H. Coombs, Martha J. Einerson, Sandra Haarsager, Patricia Hart, Tom E. Jenness, Alan Lifton, Michael Nitz, Connie Owens, Jane Pritchett, Mark Secrist, William P. Woolston. Faculty Emeriti: Bert C. Cross, Peter A. Haggart, Paul L. Miles.

Communication can be seen as the discipline that links other disciplines, a discipline that is vital if people, organizations, and governments are to cope with today's complex world. Students with degrees from the School of Communication find jobs with newspapers and other forms of print communication; broadcasting, cable or satellite operations; public relations firms; advertising agencies; as practitioners of the visual arts; as communication specialists in private corporations and governmental agencies; or in other public and private communication enterprises. Students also pursue advanced degrees in communication.

The School of Communication provides theoretical and professional preparation in communication fields and also functions as an academic unit of the College of Letters and Science to provide communication courses to students in other fields of study and university general education core courses.

The school offers B.A. and B.S. degree programs in journalism, public communication, and visual communication. Students seeking careers in print and broadcast journalism should enroll in the **journalism and mass communication** degree program; those interested in broadcasting, photography, and other areas of visual communication should enroll in the **visual communication** degree program; and those interested in advertising, general communication, organizational communication, and public relations should enroll in the **public communication** degree program. All three programs of study provide preparation for those who wish to seek advanced degrees in communication.

Students seeking the B.A. degree are required to have a demonstrable proficiency in a foreign language and those seeking the B.S. degree must complete an 18-credit minor or area of emphasis in a subject area outside those taught by the School of Communication.

Courses

See part 6 for courses in Communication (Comm) and General Communication (ComG).

Curricular Requirements

Note: Required courses in a student's major cannot be used to satisfy the distributional requirements for the College of Letters and Science.

School of Communication Requirements

All majors in the School of Communication are required to take ComG 111, Introduction to Communication Studies, Comm 121, Media Writing (freshman or sophomore year), ComG 101, Fundamentals of Public Speaking, one 3-credit course in computer science, either Stat 150 or Stat 251, and at least one course in the "visual" basic skill area as approved by the School of Communication. Candidates for the B.S. degree are required to complete an academic minor or area of emphasis of at least 18 credits outside the School of Communication. Students must obtain approval from the School of Communication to apply internship credit toward a degree from the school.

ComG 111, Comm 121, and ComG 101 must be completed with a grade of C or better before a communication major may enroll in any upper-division communication courses.

A minimum cumulative university grade-point average of 2.50 is required of students seeking upper-class standing in the school or graduating with any of the majors offered by the school. All students must meet the minimum grade-point average and have completed a minimum of 58 credits to enroll in any upper-division course (numbered 300 or above) offered by the school. Registration preference in all courses is given to School of Communication majors. In order to remain in good standing in the school, the 2.50 grade-point average must be maintained.

Note: Students using a catalog issued before 1991 must meet a minimum cumulative grade-point average of 2.25 as applied above.

A student who graduates with a major in the School of Communication must complete a minimum of 128 credits of which (1) a maximum of 38 credits may be taken in communication courses having the prefix of Comm (ComG courses are not included) and (2) a maximum of 6 internship credits (3 credits in Comm 498 and 3 credits from another academic field) may be applied toward the 128-credit minimum.

JOURNALISM AND MASS COMMUNICATION (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general L & S and School of Communication requirements for either the B.A. or B.S. degree, and:

Comm 222 Reporting 3
Comm 323 Public Affairs Reporting 3
Comm 424 News Editing 3
Comm 441 Ethics in Mass Communication 3
Comm 444 Communication & Public Opinion 3
Comm 445 History of Mass Communication 3
Comm 448 Law of Mass Communication 3
Upper-division communication courses 9

PUBLIC COMMUNICATION (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general L&S and School of Communication requirements for either the B.A. or B.S. degree, and:

ComG 233 Interpersonal Communication 3
ComG 235 Organizational Communication 3
Comm 252 Principles of Public Relations 3
Comm 265 Advertising & Society 3
Comm 441 Ethics in Mass Communication 3
Comm 448 Law of Mass Communication 3
Comm 450 Quantitative Research Methods 3
Comm 451 Qualitative Research Methods 3
Five additional upper-division courses from communication offerings that emphasize advertising, general communication, organizational communication, and/or public relations 15

Students seeking careers in advertising, organizational communication, public relations, or some other area of public communication should select their courses carefully when meeting the "additional courses" requirement listed above. Seek adviser guidance in the selection of courses to meet your career goals.

VISUAL COMMUNICATION (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general L & S and School of Communication requirements for either the B.A. or B.S. degree, and:

Comm 275 Introduction to Video Production 3
Comm 281 Understanding Photography 3
ComG 284 Experiences in Visual Thinking 3
ComG 288 Introduction to Film Art 3
Comm 441 Ethics in Mass Comm or Comm 448 Law of Mass Comm 3
Comm 489 Critical Issues in Visual Communication 3
Two of the following 6
- Comm 276 Intermediate Video Production
- ComG 382 History of Photography
- ComG 384 History of American Film
- ComG 386 American Documentary Film/Television
- Comm 445 History of Mass Communication

Art graphics/design course 2-3
Six additional courses from the fields of photography, film, radio, television, or other visual arts (three courses must be numbered 300 or above) 17-18

Students seeking careers in broadcasting, photography, film, or other visual arts should select their courses carefully when meeting the "additional courses" required listed above. Advisers have lists of suggested courses.

Academic Minor Requirements

ADVERTISING MINOR

ComG 111 Introduction to Communication Studies 4
Comm 265 Advertising & Society 3
Comm 360 Broadcast Media Advertising 3
Comm 362 Print Media Advertising 3
Comm 431 Professional Presentation Techniques 3
At least two of the following 6
- Comm 252 Principles of Public Relations
- Comm 364 Advertising Media Planning
- Comm 444 Communication & Public Opinion
- Comm 448 Law of Mass Communication
- Comm 468 The Advertising Agency

INTERPERSONAL COMMUNICATION MINOR

ComG 101 Fundamentals of Public Speaking 2
ComG 111 Introduction to Communication Studies 4
ComG 233 Interpersonal Communication 3
ComG 332 Communication & the Small Group 3
Electives from the following (minimum credit) 10
- ComG 132 Oral Interpretation
- ComG 134 Nonverbal Communication
- ComG 235 Organizational Communication
- ComG 331 Conflict Management
- ComG 333 Interviewing
- ComG 347 Persuasion
- Com 431 Professional Presentation Techniques

JOURNALISM MINOR

ComG 111 Introduction to Communication Studies 4
Comm 121 Media Writing 3
Comm 222 Reporting 3
At least four of the following 12
- Comm 323 Public Affairs Reporting
- Comm 425 Feature Article Writing
- Comm 441 Ethics in Mass Communication
- Comm 444 Communication & Public Opinion
- Comm 445 History of Mass Communication
- Comm 448 Law of Mass Communication

PUBLIC RELATIONS MINOR

ComG 111 Introduction to Communication Studies 4
Comm 121 Media Writing 3
Comm 252 Principles of Public Relations 3
ComG 433 Organizational Communication Theory & Research 3
Comm 452 Public Relations Management 3
One of the following 3
- ComG 235 Organizational Communication
- Comm 354 Publications Editing
- Comm 431 Professional Presentation Techniques

VISUAL COMMUNICATION MINOR

ComG 111 Introduction to Communication Studies 4
Comm 121 Media Writing 3
Comm 275 Introduction to Video Production 3
ComG 284 Experiences in Visual Thinking 3
ComG 288 Introduction to Film Art 3
Comm 441 Ethics in Mass Comm or Comm 448 Law of Mass Comm 3
Comm 445 History of Mass Communication 3

Program in Computer Engineering

John W. Dickinson, Program Director (B40 Janssen Engr. Bldg. 83844-1010; phone 208/885-6589). Faculty: James Alves-Foss, Howard B. Demuth, John W. Dickinson, James F. Frenzel, Axel Krings, Thomas Miller, Eugene Saghi, Karen H. Van Houten, Richard W. Wall.

The Computer Engineering Program provides students with solid training in the fundamentals of digital systems and computer software and prepares them for professional practice in computer engineering. Many modern systems depend on computers and other digital systems for performing tasks such as data collection, data processing, communication, and control. The Computer Engineering Program was created specifically to meet the high employer demand for graduates capable of developing these intelligent systems. The design of such systems requires a solid understanding of both software and hardware. This understanding must extend to areas such as software engineering, digital systems and VLSI design, computer architecture, networking, and operating system design.

The Computer Engineering Program is offered through the combined efforts of the Departments of Computer Science and Electrical Engineering. Included in the curriculum is a heavy emphasis on mathematics, along with courses in physics, chemistry, technical writing, humanities, and social sciences. This program, which leads to the degree of Bachelor of Science in Computer Engineering, produces graduates with the technical skills needed to pursue challenging careers with a wide variety of companies and to continue their educations in new and rapidly developing areas. The basic measure of quality of the program is the placement and success of the graduates.

Graduates in computer engineering apply technical skills and knowledge to problems in such areas as operating systems, microprocessor and microcontroller systems, digital systems, and data communication systems. The range of needs in these areas provides career opportunities in design, production, reliability and quality control, research and development, marketing and sales, education, technical management, and plant operations. The continuing demand for computer engineering graduates suggests that employment opportunities are plentiful.

Computer engineering is a very rewarding field; it is also a demanding occupation. The high-school student planning to pursue an engineering career should prepare for entrance into UI by taking at least three years of mathematics (including advanced algebra and trigonometry) and three years of natural science (including chemistry and physics). One or two courses in computer programming and advanced-placement calculus courses are also helpful. Deficiencies in high school can be made up on campus, but at the cost of delaying the regular degree program.

Each student's program is developed by consultation with an academic adviser from the computer engineering faculty, who are members of either the Department of Computer Science or the Department of Electrical Engineering. The student's adviser assists the student with course selection; selection of general education, engineering science, and technical electives; understanding and meeting the academic requirements of the university and the program; and planning a timely graduation.

The College of Engineering consists of a cluster of buildings on the UI campus. The Computer Engineering Program draws on the strong programs in electrical engineering and computer science and benefits from the outstanding facilities provided by these departments. The Department of Computer Science has offices and student laboratories in the Janssen Engineering Building (JEB). The three student laboratories in the Department of Computer Science consist of state-of-the-art Hewlett-Packard workstations and X-terminals that provide students with complete Internet access and software system design and development environments. The Department of Electrical Engineering has offices and student laboratories in two campus buildings, the Buchanan Engineering Laboratory (BEL) and the Johnson Electrical Engineering Laboratory (JEL). The nine laboratories in the Department of Electrical Engineering consist of electronics, digital logic and microprocessors, senior design, computers, and VLSI/digital systems in BEL, and electrical circuits, microwaves, and electrical machines in JEL. The computer laboratory includes a large number of desk-top personal computer systems and a number of workstations and X-terminals. The VLSI/digital systems lab consists of state-of-the-art workstations for developing integrated circuit designs as well as FPGA-based designs. The other labs include computer systems to support circuit analysis and development. All of these systems are networked and provide for Internet access, software development, and hardware simulation, analysis, and development.

Note: In addition to college requirements for admission to classes (see "Admission to Classes" under College of Engineering, part 4), students majoring in computer engineering must pass a qualifying examination as prerequisite to any upper-division course in computer engineering except CoE 340 and 344. In addition, a grade of C or better is required in certain selected courses before upper-division courses may be taken (see "Curricular Requirements" below). Adviser's approval is required to admission to all courses.

Courses

See part 6 for courses in Computer Engineering (CoE).

Curricular Requirements

COMPUTER ENGINEERING (B.S.Comp.E.)

Required course work includes the university requirements (see regulation J-3) and:

CoE 241 Computer Organization 3
CoE 243 Digital Logic 3
CoE 244 Logic Circuit Lab 1
CoE 341 Digital Systems Engineering 3
CoE 351 Computer Architecture 3
CoE 361 Microcontrollers 4
CoE 480-481 Computer Systems Design Projects 6
ComG 101 Fundamentals of Public Speaking 2
CS 112 Introduction to Problem Solving & Programming 3
CS 113 Program Design & Algorithms 3
CS 213 Data Structures 3
CS 341 Computer Operating Systems 4
CS 381 Software Engineering 3
EE 210, 211 Electrical Circuits I & Lab 4
EE 212, 213 Electrical Circuits II & Lab 5
EE 316, 317 Electronics I & Lab 4
EE 350 Signals & Systems Analysis 4
Eng 317 Technical & Engineering Report Writing 3
Math 170, 175 Analytic Geometry & Calculus I-II 8
Math 176 Discrete Mathematics 3
Math 310 Ordinary Differential Equations 3
Math 330 Linear Algebra 3
Phys 211, 212 Engineering Physics I-II 8
Stat 301 Probability & Statistics 3
Humanities and social sciences electives, incl at least (1) one upper-division course that is the second course completed in that subject, or (2) a course that has another humanities-social science course as a prerequisite 18
Technical electives selected from upper-division computer engineering, electrical engineering (except EE 441), and computer science courses 12

The minimum number of credits for the degree is 128, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

A grade of C or better is required in each of the following courses before registration is permitted in upper-division computer science courses: CS 112, 113, 213, CoE 241, Math 170, 175, 176. A grade of C or better is required in each of the following courses before registration is permitted in upper-division engineering courses: CoE 243, 244, EE 210, 212, math 170, 175, 310, Phys 211, 212.

Department of Computer Science

John W. Dickinson, Dept. Chair (B40 Janssen Engr. Bldg. 83844-1010; phone 208/885-6589). Faculty: James Alves-Foss, John W. Dickinson, A. Kent Dunnam, James A. Foster, Deborah A. Frincke, William S. Junk, Axel W. Krings, Thomas H. Miller, John C. Munson, Charles K. Nelson, Paul W. Oman, Robert C. Probasco, Molly W. Stock, Karen H. Van Houten.

Computer science is the systematic study of algorithmic processes that describe and transform information: their theory, analysis, design, efficiency, implementation, and application. It is a broad discipline with an ever growing array of opportunities. Graduates in this field can find employment in a wide spectrum of public and private enterprises.

The field of computer science encompasses many areas of specialization. One may find a personal niche in software development, systems development and hardware selection, studies of compatibility between hardware and software, language development and modification, or perhaps a combination of these and any number of other diverse computer-oriented applications and concepts. Because of this diversity in potential application areas, the computer scientist must be familiar with the language of the physical sciences, mathematics, and English. If the computer is to extend its role as a benefit to mankind, the computer scientist must be broadly educated and conversant with the many implications of the powerful tool that he or she is controlling and developing.

The Department of Computer Science was formed in 1981 and is in the College of Engineering. The Bachelor of Science in Computer Science has been offered at UI since 1977. This program consists of a carefully designed technical core, surrounded by an extensive array of challenging technical elective courses. The technical core consists of courses in algorithms and data structures, programming languages, computer architecture, numerical and symbolic computation, operating systems, software engineering, database, and a senior capstone design sequence. All of these courses have important components of theory, abstraction, and design.

The Bachelor of Science program in computer science is accredited by the Computer Science Accreditation Commission (CSAC) of the Computing Sciences Accreditation Board (CSAB), a specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation (CORPA).

Students in computer science have the unique opportunity to draw from the expertise of an outstanding faculty with extensive experience in industry, teaching, and research. Computers currently available to students include an extensive department network of workstations from Hewlett-Packard and several campus personal computer laboratories. All major campus and department computer systems are networked together with Internet connections, providing a state-of-the-art computing environment.

The purpose of the graduate program in computer science is to develop the student's critical professional thinking and intuition. The curriculum involves a balanced mixture of learning experiences to make the graduate capable of sound professional decisions. The study of computer science at the graduate level requires mathematical maturity, skill in the use of high-level and machine-level programming languages, and basic knowledge of computer hardware organization and technology. Students wishing to enter the master's program must demonstrate competence in specific areas equivalent to the material covered in several of the undergraduate courses. The prerequisites for entry into graduate-level courses are knowledge of: a structured high-level language; data structures; a full year of calculus; and discrete mathematics. A student who does not have an adequate background in computer science will be required to satisfactorily complete those courses in which he or she is deficient. The deficiencies for graduate studies are compiler design; theory of programming languages; operating systems; files and databases; computer architecture; and theory of computation. The Graduate Record Examination general test is also required for admission. For a complete description of the master's and doctoral programs in computer science, consult the *Graduate Catalog*.

Courses

See part 6 for courses in Computer Science (CS).

Curricular Requirements

COMPUTER SCIENCE (B.S.C.S.)

Required course work includes the university requirements (see regulation J-3) and:

CS 112 Introduction to Problem Solving & Programming 3
CS 113 Program Design & Algorithms 3
CS 200 Sophomore Seminar 0
CS 213 Data Structures 3
CS 241 Computer Organization 3
CS 310 Computing Languages 3
CS 341 Computer Operating Systems 4
CS 351 Computer Architecture 3
CS 360 Files & Databases 3
CS 400 Senior Seminar 0
CS 401 Contemporary Issues in Computer Science 1
CS 445 Systems Program Design 3
CS 480, 481 Design 6
CS 490 Theory of Computation 3
CS 495 Analysis of Algorithms 3
ComG 101 Fundamentals of Public Speaking 2
CoE 243 Digital Logic 3
CoE 244 Logic Circuit Lab 1
Engl 317 Technical & Engineering Report Writing 3
Math 176 Discrete Mathematics 3
Math 170, 175 Analytic Geometry & Calculus I, II 8
Math 330 Linear Algebra 3
Phys 211-212 Engineering Physics I-II 8
Stat 301 Probability & Statistics 3
Upper-division electives selected to satisfy the credit distribution in the following three categories 18
- Category A—any upper-division CS course except 499 (9 cr)
- Category B—Math 210 or any upper-division Math or Stat course except 400, 404, and 499 (3 cr)
- Category C—any upper-division CS, Math, Stat, CoE, or EE course, including no more than 3 cr in 499 (6 cr)

Science electives 4
Electives to total 128 cr for the degree ..... —
- A minimum of 15 cr in humanities and social sc that satisfy regulation J-3-d
- A minimum of 4 cr from an approved list of courses that include study in humanities, social sciences, arts, and other disciplines that serve to broaden student's background

The minimum number of credits for the degree is 128, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

A grade of C or better is required in each of the following courses before registration is permitted in upper-division computer science courses: CS 113, 213, and 241, and Math 170, 175, and 176.

Technical and undesignated electives may be chosen from other disciplines to allow students to develop individualized programs to meet personal and career goals. A planned area of emphasis may be developed by the student with his or her adviser. This plan requires the approval of the CS faculty.

Academic Minor Requirements

COMPUTER SCIENCE MINOR

CS 112 Introduction to Problem Solving & Programming 3
CS 113 Program Design & Algorithms 3
CS 213 Data Structures 3
CS 241 Computer Organization 3
Math 176 Discrete Mathematics 3
Upper-division electives in computer science 6

Department of Economics

S. M. Ghazanfar, Dept. Chair (329 Admin. Bldg. 83844-3172; phone 208/885-6294; e-mail econ@uidaho.edu). Faculty: Richard B. Coffman, Michael J. DiNoto, S. M. Ghazanfar, John W. Knudsen, R. Ashley Lyman, Jon R. Miller, John T. Wenders.

Economics deals with how people choose among alternatives and then exchange with others based on these choices. Because many choices are made in the private sector of the economy, economics majors study consumer behavior, business behavior, and the workings of markets. Because many other choices are made in the public sector, economics majors study public finance, government decision-making, and the behavior of bureaucracies. Problems of inflation, unemployment, economic growth and development, regional and labor economics, and international trade are also studied.

However, because choice and exchange are basic to much human activity, the tools of economics are applicable to many areas of human behavior other than those conventionally thought of as economic. Increasingly, economic concepts are being used in other disciplines such as business, law, political science, history, and the social sciences. Thus, in addition to providing an understanding of economic phenomena, economics also provides a discipline of mind and an approach that are widely applicable. For these reasons, economics is often chosen as a major by students who do not intend to become professional economists. Economics has traditionally been attractive as a major to those preparing for careers in business, MBA study, law school, government, and public administration. Many successful business and professional people have majored in economics as undergraduates.

The wide applicability of economic training also means that there are many employment opportunities for professional economists. Careers as a professional economist usually require graduate training. The undergraduate majors provide an opportunity to prepare for successful graduate work. Students intending to attend graduate school in economics are expected to consult with faculty members for specific advice on their undergraduate course selections.

The department offers three undergraduate economics degree programs, one in the College of Business and Economics and two in the College of Letters and Science. The essential difference among these programs is that those in the College of Letters and Science require fewer business courses and allow more electives. The less structured programs in this college are in the liberal arts tradition. A minor in economics is also offered through the College of Letters and Science.

The Department of Economics also offers an integrated course of graduate study oriented toward policy analysis and applied studies. Two types of master's degrees are offered: (1) a thesis degree, which provides specialized research experience for careers requiring such expertise, and (2) a nonthesis degree, which provides a broader background for careers where research competence may be desirable but is not of primary importance.

Applicants for graduate study in economics are considered on the basis of their prior academic performance and their potential for success in the program. The undergraduate degree need not be in economics, though a minor in economics is desirable. Students with a minimal background in economics will be required to take certain undergraduate courses that may not be included in the graduate study plan.

Courses

See part 6 for courses in Economics (Econ).

Curricular Requirements

ECONOMICS (B.S.Bus.)

This program is offered through the College of Business and Economics.

Students preparing for professional careers as economists in private business, government service, or careers where a broad knowledge of economics is useful should elect this curriculum.

Required course work includes the university requirements (see regulation J-3), the college requirements, and:

Econ 351 Intermediate Macroeconomic Analysis 3
Econ 352 Intermediate Microeconomic Analysis 3
Econ 353 Quantitative Methods in Economics or Econ 453 Econometrics 3
Econ 455 History of Economic Thought 3
Econ 490 Economic Theory & Policy 3
Additional upper-division cr in economics 6
Upper-division courses in related field areas, with approval of department 9

ECONOMICS (B.A.)

This program is offered through the College of Letters and Science.

Required course work includes the university requirements (see regulation J-3), the general College of L & S requirements for the B.A. degree, and:

Econ 201, 202 Principles of Economics 6
Econ 351 Intermediate Macroeconomic Analysis 3
Econ 352 Intermediate Microeconomic Analysis 3
Econ 353 Quantitative Methods in Economics or Econ 453 Econometrics 3
Econ 455 History of Economic Thought 3
Econ 490 Economic Theory & Policy 3
Acct 201 Introduction to Financial Accounting 3
Math 130 Finite Mathematics or Math 143 Pre-calculus Algebra & Analytic Geom and Phil 211 Intro to Symbolic Logic 4-6
Stat 251 Principles of Statistics 3
Additional upper-division credits in economics 9
Upper-division credits in a combination of anthro, geog, hist, political sc, psych, or soc (at least 9 credits in one social sc) 15

ECONOMICS (B.S.)

This program is offered through the College of Letters and Science.

Required course work includes the university requirements (see regulation J-3), the general College of L & S requirements for the B.S. degree, and:

Econ 201, 202 Principles of Economics 6
Econ 351 Intermediate Macroeconomic Analysis 3
Econ 352 Intermediate Microeconomic Analysis 3
Econ 353 Quantitative Methods in Economics or Econ 453 Econometrics 3
Econ 455 History of Economic Thought 3
Econ 490 Economic Theory & Policy 3
Acct 201 Introduction to Financial Accounting 3
Math 130 Finite Mathematics 4
Math 160 Survey of Calculus or 170 Analytic Geometry & Calculus I 4
Stat 251 Principles of Statistics 3
Additional upper-division cr in economics 9
Upper-division social sc credits (credits earned in math beyond the stated requirement will be accepted) 15

Academic Minor Requirements

ECONOMICS MINOR

This academic minor (with its five different areas) is offered through the College of Letters and Science.

Econ 201, 202 Prin of Econ or 272 Foundations of Econ Analysis 4-6
Econ 351 Intermediate Macroeconomic Analysis 3
Econ 352 Intermediate Microeconomic Analysis 3

And one of the following areas (with the permission of the student's adviser, the student may petition to have one substitute course for one of the following specific courses in the first four areas):

Forecasting
Econ 343 Money & Banking 3
Econ 353 Quantitative Methods in Economics 3
Econ 453 Econometrics 3

Public Policy
Econ 345 American Econ Dev or 390 Comparative Econ Systems 3
Econ 407 Public Finance or 408 State & Local Govt Finance 3
Econ 415 Market Structure & Governmental Policy 3

Development
Econ 430 Regional/Urban Economics 3
Econ 446 International Economics 3
Econ 447 Economics of Developing Countries 3

Economic Resources
Econ 385 Environmental Economics 3
Econ 441 Labor Economics 3
Course approved by student's adviser 3

General Economics
Upper-division economics courses approved by student's adviser and dept chair 9

Department of Electrical Engineering

David P. Egolf, Dept. Chair (214 Buchanan Engr. Lab. 83844-1023; phone 208/885-6554). Faculty: Touraj Assefi, David H. Atkinson, R. Jacob Baker, Howard B. Demuth, David P. Egolf, Joseph J. Feeley, Calvin L. Finn, James F. Frenzel, Karen Z. Frenzel, Herbert L. Hess, Brian K. Johnson, Joseph D. Law, Harry W. Li, Kenneth V. Noren, James N. Peterson, Eugene Saghi, Richard W. Wall, Richard B. Wells, Jeffrey L. Young.

The Department of Electrical Engineering provides students the opportunity to receive a solid education in the fundamentals of electrical circuits, electronics, and electrical machines, as well as to explore advanced topics through technical elective courses taken primarily in the senior year. Included in the curriculum is a heavy emphasis on mathematics, along with courses in physics, chemistry, technical writing, humanities, and social sciences. This program, leading to the degree of Bachelor of Science in Electrical Engineering, produces graduates with the technical skills needed for stepping into challenging careers with a wide variety of companies and for continuing their education in new and changing areas.

The Department of Electrical Engineering, in cooperation with the Department of Computer Science, also offers a Bachelor of Science in Computer Engineering. This program, which includes intensive study of basic courses in electrical engineering and computer science, was created in response to high employer demand for computer engineering graduates.

Graduates in electrical engineering apply technical skills and knowledge to problems in such areas as energy, computers, instrumentation, microprocessors, electrical power, electronics, and communication systems. The range of needs in these areas provide career opportunities in design, production, reliability and quality control, research and development, marketing and sales, education, technical management, and plant operations. Demand for electrical engineering graduates suggests that employment opportunities are strong.

Electrical and computer engineering are extremely rewarding fields; they also are demanding occupations. The high-school student planning to enter an engineering career should prepare for entrance into UI by taking at least three years of mathematics (including advanced algebra and trigonometry) and three years of natural science (including chemistry and physics). Deficiencies in high school can be made up on campus, but at the cost of delaying the regular degree program.

On campus, the freshman year curriculum is similar for all engineering students. It is a busy year of adjustment and foundational study of science and mathematics. It involves graphics and written communication, introductory calculus, chemistry, physics, and computer programming.

During the sophomore and junior years, the EE student continues with his or her academic program. This program is developed by consultation with an academic adviser from the EE departmental

faculty. Students study topics in electronics, electrical machines, digital logic and microprocessors, electromagnetic fields, and analysis of signals and dynamic systems after taking introductory circuits and laboratories. These introductory courses allow students to experiment with single circuits and familiarize themselves with laboratory instruments. Additional laboratory classes during this time further develop the student's understanding of concepts presented in lecture classes while introducing some of the practical problems that arise in hardware.

As a senior, the student will take a two-semester sequence in electrical engineering design that involves both individual and team design projects. The senior student selects technical elective courses primarily from the advanced elective courses that are offered in electrical engineering. These include specialized topics in digital logic and design, computer methods in electrical power systems, feedback control systems, advanced electronics, communication theory, analysis and applications of microprocessors, and antennas and microwave devices.

Eighteen credits of technical elective courses are required by the Electrical Engineering Department. Nine credits must be selected from the following list of core technical electives: [411], [421, 424], [435], [440, 441, 443], [452], and [470]. Only one course per bracketed area will count toward the nine credits. In addition to this requirement, three additional credits must be selected from any upper-division electrical engineering courses. The remaining six credits may be selected from either upper-division electrical engineering courses or appropriate supporting areas. These supporting areas include mechanical engineering, civil engineering, chemical engineering, engineering science, computer science, physics, mathematics, and statistics.

The eighteen credits of technical electives are separate from, and in addition to, the required three credits of engineering science electives that must be chosen from upper-division courses.

The Department of Electrical Engineering has offices and laboratory rooms in two campus buildings, the Buchanan Engineering Laboratory (BEL) and the Johnson Electrical Laboratory (JEL). The seven laboratories consist of electronics, senior design, digital logic, and computers in BEL, and electrical circuits, microwaves, and electrical machines in JEL. In addition, laboratory space is used for microprocessor system development and testing. The computer laboratory includes a large number of desk-top personal computer systems, a minicomputer system with many terminals, microprocessor instructional systems, and several specialized computer systems for developing microprocessor software and other dedicated computing.

Note: In addition to college requirements for admission to classes (see "Admission to Classes" under College of Engineering, part four), students majoring in electrical engineering or computer engineering must pass a qualifying examination as prerequisite to any upper-division course in electrical engineering or computer engineering except EE 340 and EE 344. Adviser's approval is required for admission to all EE and CoE courses. Finally, adviser and department chair approval is required to take EE 480 and 481 during the summer session.

Courses

See part 6 for courses in Electrical Engineering (EE).

Curricular Requirements

ELECTRICAL ENGINEERING (B.S.E.E.)

Required course work includes the university requirements (see regulation J-3) and:

EE 210, 211 Electrical Circuits I & Lab 4
EE 212, 213 Electrical Circuits II & Lab 5
EE 292 Sophomore Seminar 0
EE 316, 317 Electronics I & Lab 4
EE 318, 319 Electronics II & Lab 4
EE 320 Electrical Machinery 5
EE 330 Electromagnetic Theory 4
EE 340 Digital Logic 3
EE 344 Logic Circuit Lab 1
EE 350 Signals & Systems Analysis 4
EE 480-481 Senior Design 6
EE 491 Senior Seminar 0
Chem 111 Principles of Chemistry I 4
CE 210 Engineering Statics 3
CE 386 Engineering Economy 3
CS 112 Introduction to Problem Solving & Programming 3
Engl 317 Technical & Engineering Report Writing 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
Math 330 Linear Algebra 3
ME 101 Engineering Graphics 2
ME 220 Engineering Dynamics 3
Phys 211, 212 Engineering Physics I-II 8
Stat 301 Probability & Statistics 3
Upper-division engineering science elective chosen from CE 320, ChE 321, ME 340, or CE 402 3
Humanities and social science electives, incl at least (1) one upper-division courses that is the second course completed in that subject or (2) a course that has another humanities/social science course as a prerequisite 18
Technical upper-div electives (at least 12 cr from EE courses, including 9 cr from EE [411], [421, 424], [435], [440, 441, 443], [452], and [470]) 18

The minimum number of credits for the degree is 131, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

A grade of C or better is required in each of the following courses before registration is permitted in upper-division engineering courses: Chem 111, CS 112, EE 210, 211, 212, and 213, CE 210, ME 101 and 220, Math 170, 175, 275, 310, and 330, and Phys 211, 212. A grade of P is required in EE 292 before registration is permitted in upper-division engineering courses.

Department of English

Douglas Q. Adams, Dept. Chair (200 Carol Ryrie Brink Hall 83844-1102; phone 208/885-6156). Faculty: Douglas Q. Adams, David S. Barber, Terryn L. Berry, Mary Clearman Blew, Steven R. Chandler, Richard J. Dozier, E. Phil Druker, Richard W. Fehrenbacher, Stephan P. Flores, Tina Foriyes, Candida Gillis, Richard G. Hannaford, Walter A. Hesford, D'Wayne Hodgin, Edward V. Hughes, Mary Ann Judge, Carole Lowinger, Maria T. Maggi, Nancie E. McCoy, Ronald E. McFarland, Kerry E. McKeever, Barbara R. Meldrum, Jennie Nelson, Sheila O'Brien, Lance Olsen, Kurt O. Olsson, Joy Passanante, Richard Penticoff, Patricia Riley, Teoman Sipahigil, Charles R. Stratton, Dene Kay Thomas, Gordon P. Thomas, Roger P. Wallins, Gary Williams.

English majors develop skills in writing, textual interpretation, and critical thinking as they study the nature of language and learn how Anglo-American literary traditions develop and relate to world literature. Majors study a wide range of authors, male and female, upper class and working class, white and minority. They learn the formal qualities of texts as well as their historical and cultural contexts. Students write extensively in all courses and gain speaking experience through oral reports and class discussions. (For this reason, international students should have a TOEFL score of 560 or above.)

The early phases of the program emphasize literary traditions (Engl 257, 258, 341, 342, 343, 344), reading skills and textual analysis (especially Engl 210 and 295), and the study of Shakespeare (Eng 345). Advanced courses allow students to pursue individual interests in literature, expository and creative writing, literary criticism and theory, and linguistics.

Through requirements, course offerings, and advising, the Department of English encourages students to plan their curricula according to personal and career goals. Aspiring poets and novelists emphasize creative writing courses; film scholars take courses in film; future teachers of English as a Second Language (ESL) study linguistics; pre-professionals of all kinds take advanced writing courses. Those heading for graduate school in literature, linguistics, or ESL choose courses that prepare them for graduate study in their area. English majors who intend to teach English in secondary schools plan their program to satisfy state certification requirements (see "Secondary School Teaching Certification for Majors Outside the College of Education" in the College of Education section in part 4).

To enable students to focus on such interests within a coherent program of study, the English Department offers the choice of three emphases within the major: literature, creative writing, and preprofessional.

The Department of English offers four graduate degrees at the master's level: the M.F.A., the M.A., the M.A.T., the M.A. in Teaching English as a Second Language. Through course selection and choice of thesis topic, and with the approval of appropriate faculty members, students pursuing the M.A. may emphasize literary studies or studies in composition/rhetoric. Through course selection and choice of thesis topic, and with the approval of appropriate faculty members, those pursuing the M.F.A. may emphasize fiction, poetry, or creative nonfiction. Students planning to work for the M.F.A., M.A.. or M.A.T. should be well prepared through the curriculum outlined below. Those planning to pursue the M.A. in Teaching English as a Second Language should take extra course work in linguistics.

Courses

See part 6 for courses in English (Eng).

Curricular Requirements

ENGLISH (B.A.)

Where specific courses are listed with the area requirements, the department may approve equivalencies.

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and one of the following emphases:

LITERATURE EMPHASIS

Engl 210 Reading - Writing - Texts 3
Engl 257-258 Literature of Western Civilization 6
Engl 295 Seminar in Literary Studies 3
Engl 341-342 Survey of British Literature 6
Engl 343-344 Survey of American Literature 6
Engl 345 Shakespeare 3
400-level courses in literature before 1800 3
Courses in linguistics 3
English electives selected in consultation with adviser, incl at least 12 cr at the 400 level 18
Related field approved by adviser 20

CREATIVE WRITING EMPHASIS

Engl 210 Reading - Writing - Texts 3
Engl 257-258 Literature of Western Civilization 6
Engl 291-292 Creative Writing: Poetry or Fiction 6
Engl 341-342 Survey of British Literature 6
Engl 343-344 Survey of American Literature 6
Engl 345 Shakespeare 3
Engl 391 and/or 392 Creative Writing: Poetry or Fiction 3-6
Engl 491 or 492 Creative Writing: Poetry or Fiction 3
400-level English courses in literature in any period 3
400-level English courses in literature before 1800 3
Elective writing courses chosen from Eng 309 (may not be repeated), 404, 491, 492 (may be repeated); 498 (Internship: Editing of Literary Journal, may be repeated up to a maximum of 3 cr) 6-9
Related field approved by adviser 20

PREPROFESSIONAL EMPHASIS

Eng 210 Reading - Writing - Texts 3
Eng 257-258 Literature of Western Civilization 6
Eng 341 or 342 Survey of British Literature 3
Eng 343 or 344 Survey of American Literature 3
Two writing courses chosen from Eng 207, 208, 209, 309, 313, 317 6
Elective English courses (at least 9 cr at 400 level) 15
Courses outside the English Dept appropriate to student's career goals (at least 9 upper-div cr) 15
Related field OR academic minor appropriate to student's career goals (at least 9 upper-div cr) 20

The preprofessional emphasis is an individualized program for students wishing to stress preparation for professions such as law, writing and editing, government service, and business. All course decisions are to be made in consultation with the student's English adviser and require the adviser's approval.

TEACHING CERTIFICATION

L&S English majors wishing secondary teaching certification must complete the appropriate English and education courses listed in the "Teaching Majors and Minors in the College of Education" section of this catalog. Some of these courses may be included in the student's English-major requirements. Students should plan their programs with their English advisers; they should also see College of Education advisers regarding certification requirements.

Academic Minor Requirements

ENGLISH MINOR

Eng 210 Reading - Writing - Texts 3
Eng 295 Seminar in Literary Studies 3
Eng 345 Shakespeare 3
Three of the following courses 9
  Eng 341-342 Survey of British Literature
  Eng 343-344 Survey of American Literature
One 400-level English course 3

TEACHING ENGLISH AS A SECOND LANGUAGE MINOR

Eng 404 Special Topics: ESL Methods or EDTE 474 Secondary School Foreign Language Methods 3
Eng 441 Introduction to the Study of Language 3
Eng 442 Introduction to English Syntax 3
Anth/Soc 322 Racial & Ethnic Relations or Anth 261 Language & Culture 3
ED 314 Strategies for Teaching 3
Electives chosen from among other courses in English language and linguistics or from Anth 261 or 322 if not chosen above 6

Program in Environmental Science

Margrit von Braun, Coordinator (315 Buchanan Engr. Lab. 83844-1025; phone 208/885-6113; e-mail cdixon@ uidaho.edu).

Biological Science Option Faculty: Steven N. Austad, George H. Belt, Jr., David H. Bennett, Steven J. Brunsfeld, Alton G. Campbell, Donald L. Crawford, Ronald L. Crawford, Brian C. Dennis, C. Michael Falter, Edward O. Garton, Patricia J. Heglund, Thomas F. Hess, Scott T. Kellogg, L. Kirk Lohman, Robert L. Mahler, John D. Marshall, Joseph P. McCaffrey, Penelope Morgan, Matthew J. Morra, James M. Peek, Kerry P. Reese, Ronald Robberecht, R. Francis Rosenzweig, Arthur W. Rourke, Dennis L. Scarnecchia, J. Michael Scott, George G. Spomer, Molly W. Stock, Karel J. Stoszek, R. Gerald Wright, Robert S. Zemetra.

Physical Science Option Faculty: Thomas E. Carleson, Valerie E. Chamberlain, H. Bradley Eldredge, Roger Ely, Scott E. Fendorf, T. Rick Fletcher, Dennis J. Geist, Mickey E. Gunter, John E. Hammel, Terry R. Howard, Gary S. Johnson, Paul A. McDaniel, Jeanne L. McHale, Maynard M. Miller, Leland L. Mink, Gregory Moller, Denny V. Naylor, Beth A. Palmer, Howard S. Peavy, P. Steven Porter, Keith A. Prisbrey, Dale R. Ralston, Peter L. Siems, Margrit von Braun, Ray von Wandruszka, Chien M. Wai, Scott A. Wood, David M. Woodall.

Social Science Option Faculty: Katherine G. Aiken, Diane M. Baumgart, John E. Carlson, Stephen C. Cooke, Donald W. Crowley, E. Philip Druker, Jo Ellen Force, Katherine Paxton George, Dale D. Goble, Bruce T. Haglund, Joel R. Hamilton, Charles C. Harris, Harley E. Johansen, Douglas Lind, Gary E. Machlis, Jon R. Miller, Scott E. Morris, Gundars Rudzitis, Arthur D. Smith, Jr., William R. Swagerty, Roger P. Wallins, Jerry L. Wegman.

The Environmental Science Program emphasizes the importance of an interdisciplinary approach for students committed to studying and solving environmental issues. The multi-disciplinary faculty represents all colleges at the university and includes soil scientists, engineers, geographers, biologists, ecologists, urban and regional planners, sociologists, chemists, and hydrologists.

Career opportunities in the environmental sciences are diverse and numerous. Graduates are employed in areas such as natural resource management, pollution prevention, air and water quality monitoring, hazardous waste management, environmental and land use planning, and environmental regulation.

The curriculum leading to the B.S. degree in environmental science offers students the opportunity to combine studies in several disciplines and professional fields in order to gain an understanding of the complex nature of environmental problems. In addition to understanding relationships between traditional disciplines, the program creates an integrated and coherent approach to environmental problem solving. The curriculum includes the university core (general education) requirements, a common set of required courses and electives for all environmental science majors, and the student's choice of one of three options.

The required courses and electives for all majors are designed to build a strong base of knowledge in biological, physical, and social sciences, supplemented by a set of electives, in consultation with an environmental science adviser, from four areas (ecology, natural resource economics, sociology, and management). All students complete a senior project or internship as part of their course of study.

Three option areas are offered: biological science, physical science, and social science.

The M.S. degree in environmental science is also offered. Six option areas are available: ecology/biological science, waste management, earth science/hydrology, natural resource management, physical science, and policy and law.

Questions regarding either the B.S.Env.S. or M.S. programs should be directed to the program coordinator (208/885-6113).

Courses

See part 6 for courses in Environmental Science (EnvS).

Curricular Requirements

ENVIRONMENTAL SCIENCE (B.S.Env.S.)

Required course work includes the university requirements (see regulation J-3) and:

EnvS 101 Introduction to Environmental Science 3
EnvS 102 Field Activities in Environmental Sciences 1
EnvS 400 Seminar 1
EnvS 497 Practicum in Environmental Science 3
Biol 201 Introduction to the Life Sciences 4
Chem 111 Principles of Chemistry I (students in social science option may substitute Chem 101) 4
CS 112 Introduction to Problem Solving & Programming 3
Engl 207 Persuasive Writing or 208 Personal & Exploratory Writing or 209 Inquiry-Based Writing or 3-4 cr in foreign language courses 3-4
Engl 317 Technical & Engr Report Writing or ComG 101 Fundamentals of Public Speaking 2-3
Geog 100 Physical Geography 4
Geol 101 Physical Geology 4
Phil 407 Environmental Ethics 3
Stat 251 Principles of Statistics 3
Humanities courses selected from the following 9-10
- AmSt 301 Interpreting America
- Engl 257 Literature of Western Civilization
- Engl 258 Literature of Western Civilization
- Phil 103 Ethics

Social science courses selected from the following 12
- Anth 100 Introduction to Anthropology
- Econ 201 Principles of Economics
- Econ 202 Principles of Economics
- Geog 200 World Regional Geography
- Hist 101 History of Civilization
- Hist 102 History of Civilization
- PolS 101 Introduction to Political Science & American Government
- Psyc 101 Introduction to Psychology
- Soc 101 Introduction to Sociology

Adviser-directed breadth electives, including at least one course from the first four areas 24
- Ecology
  - Biol 331 General Ecology
  - Bot 432 Plant Ecology
  - For 221 Natural Resources Ecology
  - MMBB 425 Microbial Ecology
  - WLF 290 Principles of Wildlife Biology
- Natural Resource Economics and Sociology
  - AgEc 451 Land & Natural Resource Economics
  - Econ 385 Environmental Economics
  - For 235 Society & Natural Resources
  - For 383 Economics for Natural Resource Managers
- Management
  - ChE 470 or EnvS 445 Hazardous Waste Management
  - For 470 Interdisciplinary Natural Resource Planning
  - For 484 Forest Policy & Administration
  - Geog 420 Land & Resource Regulation
  - Geog 427 Decision-Making in Resource Management
  - Geog 444 Environmental Assessment
  - WLF 493 Environmental Law
- History, Philosophy, and Political Science
  - Hist 424 American Environmental History
  - Phil 412 Philosophy of Science
  - Phil 418 Philosophy of Biology
  - PolS 461 Western Environmental Legal History
  - PolS 464 Politics of the Environment
- Technical
  - Biol R531 Environmental Science & Pollutants
  - Chem 253 Quantitative Analysis
  - Chem 275 Carbon Compounds or Chem 277 and 372 Organic Chemistry
  - Chem 302 Principles of Physical Chem or 305-306 Physical Chem
  - Chem 303 Principles of Physical Chem Lab
  - Chem J318/J418 Environmental Chemistry
  - EnvS 428 Pollution Prevention
  - EnvS R471 Waste Treatment Technologies
  - For 472 Remote Sensing of Environment
  - Geog 301 Meteorology or 401 Climatology
  - Geog 385 GIS Primer
  - Geol 361 Geology & the Environment
  - Geol 409 Ground Water
  - Math 175 Analytic Geometry & Calculus II
  - MMBB 380 Introductory Biochemistry
  - Phys 111 General Physics I or 230 and 232 Engr Physics I-II
  - Soil 205 General Soils

And one the following options:

A. BIOLOGICAL SCIENCE OPTION

This option is suitable for students wishing to pursue technically oriented careers in environmental professions such as natural resource management, bioremediation, and environmental impact analysis.

Chem 112 Prin of Chem II or Chem 113 Inorganic Chem & Qual Analysis 4-5
Math 170 Analytic Geometry & Calculus I or 160 Survey of Calculus 4
MMBB 250 General Microbiology 5
Adviser-approved depth electives—include all the courses from at least two of the following areas 20
- Plant Ecology
  - Bot 432 Plant Ecology
  - For 221 Natural Resources Ecology
  - For 426 Wildland Fire Management & Ecology
- Animal Ecology
  - WLF 290 Principles of Wildlife Biology
  - WLF 314 Wildlife Ecology
- Aquatic Ecology
  - Fish 290 Principles of Fish Biology & Management
  - Fish 413 Fish Ecology
  - Fish 415 Limnology
- Forest and Range Systems
  - For 205, 206 Wildland Resource Conservation & Lab
  - For 330 Forest Ecosystem Processes
  - For 465 Forest Protection
  - Rnge 251 Principles of Range Resources Management
- Soils
  - Soil 422 Chemistry of Soil Environment
  - Soil 437 Soil Biology
  - Soil 446 Soil Fertility
- Water
  - AgE 351 Hydrology
  - For 462 Watershed Management
  - Geol 409 Ground Water
- Environmental Regulation
  - Geog 420 Land & Resource Regulation
  - Geog 444 Environmental Assessment or For 470 Interdisciplinary Natural Resource Planning
- Decision Making Tools
  - For 472 Remote Sensing of Environment
  - Geog 385 GIS Primer
  - LArc 490 Computer-Aided Regional Landscape Planning
- Environmental Chemistry
  - Biol R431 Environmental Science & Pollutants
  - Chem 318 Environmental Chemistry
  - Ent 438 Pesticides in the Environment

Electives to total 128 credits for the degree ....—

B. PHYSICAL SCIENCE OPTION

This option is suitable for students wishing to pursue technical careers in environmental professions such as air, soil, and water pollution abatement, hazardous waste management, waste minimization, and ecological restoration.

Chem 114 General Chem or Chem 113 Inorganic Chem & Qual Analysis 4-5
Math 170 Analytic Geometry & Calculus I or 160 Survey of Calculus 4
Adviser-approved depth electives—include all the courses from at least two of the following areas 20
- Water
  - AgE 351 or CE 321 Hydrology
  - For 462 Watershed Management
  - Geol 409 Ground Water
- Chemistry
  - Chem 454 Instrumental Analysis or Phys R309 Fundamentals of Radiation Biophysics or Phys R311 Health Physics in Industry Safety
  - Chem J318/J418 Environmental Chemistry
  - MMBB 380 Introductory Biochemistry
- Hazardous Waste
  - ChE 470 or EnvS 445 Hazardous Waste Management or BSyE 433 Bioremediation or Met 406 Treatment Technology for Recycled Waste or EnvS R472 Remediation Technologies & Project Implementation
  - ChE 480 Engineering Risk Assessment for Hazardous Waste Evaluations
- Geology
  - Geol 335 Geomorphology or Geol 360 Geologic Hazards
  - Geol 386 Principles of Geochemistry or Geop 422 Principles of General Geophysics
  - Geol 478 Low Temperature Aqueous Geochemistry
- Statistics
  - GeoE 428 Geostatistics
  - Stat 401 Statistical Analysis
  - Stat 422 Sampling Methods
- Mathematics
  - Math 175 Analytic Geometry & Calculus II
  - Math 275 Analytic Geometry & Calculus III
  - Math 310 Ordinary Differential Equations
  - Math 330 Linear Algebra

Soils
Soil 415 Soil Physics
Soil 422 Chemistry of Soil Environment
Soil 438 Pesticides in the Environment
Soil 454 Soil Development & Classification
Ecology
Biol 331 General Ecology
Economics and Management
Econ 385 Environmental Economics
For 472 Remote Sensing of Environment
Geog/LArc 385 GIS Primer
Geog 444 Environmental Assessment or For 470 Interdisciplinary Natural Resource Planning
Electives to total 128 credits for the degree.....—

C. SOCIAL SCIENCE OPTION

This option is suitable for students wishing to pursue careers in environmental professions such as environmental regulation, land use planning, environmental administration, and as a pre-law program for environmental law.

Math 143 Pre-calculus Algebra & Analytic Geometry.....3
Adviser-approved depth electives chosen from the following.....20
Business and Economics
AgEc 451 Land & Natural Resource Economics
Bus 314 World of Corporate Business
Econ 316 Economics of Regulation
Econ 385 Environmental Economics
English
Engl 472 Emerson, Thoreau, & Whitman
Engl 473 Literature of the American West
Forest Resources
For 383 Economics for Natural Resource Managers
For 470 Interdisciplinary Natural Resource Planning
For 484 Forest Policy & Administration
Geography
Geog 360 Population Dynamics & Distribution
Geog 420 Land & Resource Regulation
Geog 427 Decision-Making in Resource Management
Geog 444 Environmental Assessment or For 470 Interdisciplinary Natural Resource Planning
History
Hist 423 Idaho & the Pacific Northwest
Hist 424 American Environmental History
Hist 428 History of the American West
Philosophy
Phil 412 Philosophy of Science
Phil 418 Philosophy of Biology
Political Science
PolS 439 Public Policy
PolS 452 Administrative Law & Regulation
PolS 461 Western Environmental Legal History
PolS 464 Politics of the Environment
Sociology
Soc 312 Sociology of Organizations
Electives to total 128 credits for the degree.....—

Margaret Ritchie School of Family and Consumer Sciences

Suzanne Loker, Director (105 Mary Hall Niccolls Family and Consumer Sciences Bldg. 83844-3183; phone 208/885-6545; e-mail famcon@novell.uidaho.edu). Faculty: Martha Funk Archuleta, Laurel J. Branen, Sandra Evenson, Janice W. Fletcher, Rose L. Forbes, Linda Kirk Fox, Kathe A. Gabel, Yvonne S. Gentzler, Madeline Dellwo Houghton, Virginia W. Junk, Kathleen M. Kearney, Suzanne Loker, Ernestine Porter, Cynthia J. Schmiege, John Thorngate, Nancy J. Wanamaker, Doris K. Williams. Adjunct Faculty: A Larry Branen, Bernadene A. Magnuson, Randy M. Page.

Family and consumer sciences focuses on the relationships, resources, and services contributing to individual and family well being. The discipline analyzes the needs of individuals and families using social, psychological, physical, biological, economic, and aesthetic theories and concepts.

Three majors leading to the degree of Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.) are offered by the School of Family and Consumer Sciences and are designed to meet professional and individual goals of students. These are: (1) child, family, and consumer studies, (2) food and nutrition, and (3) clothing, textiles and design.

Students may choose one of three program options in the child, family, and consumer studies major. Child development/family relations focuses on the normal, healthy development of children and families. Consumer affairs emphasizes "the consumers' interests" when studying economics, business, and communication practices in our society. Family life education prepares students for teaching in the public schools, in community settings, or business audiences. Graduates of the major include day care managers, child life specialists, consumer affairs advocates, extension agents, and teachers.

The food and nutrition major offers the dietetics and consumer foods options. The Coordinated Program in Dietetics includes a senior year experience in Spokane where students complete a supervised practicum in community and medical center settings. This program is accredited by the American Dietetic Association and allows students to take the exam to become registered dietitians. The consumer foods option prepares students to work on consumer issues such as food safety, product development, and labeling within the food industry, government agencies, and commodity groups. The first two years of courses are very similar in these two options, making it possible to delay the choice of option until the end of the sophomore year.

The clothing, textiles, and design major offers both apparel design and fashion merchandising emphases. Combining courses from art or business with the clothing, textile, and design courses offered in the school prepares students for careers in retail and wholesale sectors of the apparel and textile industries. Designers, product development specialists, retail buyers and managers, and merchandise managers are some of the career titles held by UI graduates.

A Master of Science degree in family and consumer sciences is offered.

The Margaret Ritchie School of Family and Consumer Sciences has an outstanding scholarship program for entering first-year students, continuing undergraduate majors, and graduate students. Most scholarships are awarded on the basis of academic excellence regardless of financial need.

Courses

See part 6 for courses in Family and Consumer Sciences (FCS).

Curricular Requirements

CHILD, FAMILY, AND CONSUMER STUDIES (B.S.F.C.S.) (or B.A., Child Development/Family Relations option only)

This major has an interdisciplinary focus on the child, the family as an institution, and families as consumers.

The minimum credits required for graduation are 132, including at least 36 credits at the 300-level or above. Required course work includes the university requirements (see regulation J-3) and:

FCS 105 Individual & Family Development.....3
FCS 346 Personal & Family Finance & Management.....4
FCS 440 Contemporary Family Relationships.....3
FCS 451 Professional Development.....3

And one of the following options:

A. CHILD DEVELOPMENT/FAMILY RELATIONS OPTION

The CDFR option allows students to develop individualized programs to meet personal and career goals. Some suggested career emphasis areas are: (1) human services, (2) education (double major leading to Idaho elementary teaching certification is possible—consult an adviser in the College of Education), and (3) child life. Students are encouraged to complete an internship.

FCS 205 Concepts in Human Nutrition.....3
FCS 234 Infancy & Early Childhood.....3
FCS 235 Principles & Methods of Child Observation.....3
FCS 240 Intimate Relationships.....3
FCS 333 Developmental Curriculum for Young Children.....3
FCS 334 Middle Childhood-Adolescence.....3
FCS 340 Parent-Child Relationships in Family & Community.....3
FCS 436 Theories of Child & Family Development.....3
FCS 497 Practicum.....9
ComG 101 Fundamentals of Public Speaking.....2
ED 201 Introduction to Teaching.....2
H&S 288 First Aid: Emergency Response.....2
Stat 150 Intro to Statistics or 251 Principles of Statistics.....3
Computer applications elective.....3

B. CONSUMER AFFAIRS OPTION

The consumer affairs option prepares students to advocate for the consumer and to help consumers improve their well-being. Consumer affairs professionals present the consumer's viewpoint to their employing organization and convey information about the organization's products and services to the consumer. Career options include jobs in business firms, government agencies, and nonprofit organizations.

FCS 445 Issues in Work & Family Life 3
FCS 448 Consumer Education 3
FCS 460 Family as an Ecosystem 3
FCS 498 Internship 3-8
AgEc 356 Agricultural Programs & Policies or Econ 316 Econ of Regulation 3
ASM 240 Computer Applications in Biological Systems 3
Bus 311 Introduction to Management 3
Bus 321 Marketing 3
Bus 324 Consumer Behavior 3
Bus 413 Organizational Behavior 3
BuEd 415 Microcomputer Applications 3
ComG 101 Fundamentals of Public Speaking 2
Comm 121 Media Writing 3
Comm 252 Principles of Public Relations 3
Comm 265 Advertising & Society 3
Comm 431 Professional Presentation Techniques 3
Econ 201, 202 Principles of Economics 6
Stat 150 Intro to Statistics or 251 Prin of Statistics 3
FCS consumer elective 3
Additional family and consumer sciences courses to total at least 45 cr ..... —

C. FAMILY LIFE EDUCATION OPTION

Family Life Education prepares students for teaching in the public schools, in community settings, or business audiences.

Students seeking certification as secondary teachers must meet College of Education requirements for entry into teacher education. These requirements are prerequisite to enrollment in upper-division courses in the College of Education (see "Admission to the Teacher Education Program"). Completion of this option will qualify students for the Idaho standard secondary teaching certification with a vocational home economics endorsement. With minimal additional course work, students can qualify for other teaching endorsements.

FCS 123 Textiles 3
FCS 129 Dress & Culture 3
FCS 170 Introductory Foods 3
FCS 205 Concepts in Human Nutrition 3
FCS 224 Apparel Design I 3
FCS 234 Infancy & Early Childhood 3
FCS 270 Intermediate Foods 3
FCS 448 Consumer Education 3
FCS 450 Curriculum Development in Family Life Education 3
FCS 471 Student Teaching in Family Life Education 10
Art 100 Visual Art 3
BuEd 415 Microcomputer Applications 2
ComG 101 Fundamentals of Public Speaking 2
Econ 201 Principles of Economics 3
ED 201 Introduction to Teaching 2
ED 312 Educational Psychology 2
ED 313 Educational Measurement 1
ED 314 Strategies for Teaching 3
EDTE 463 Literacy Methods for Content Learning 3
IA 151 Introduction to Interior Design 3
Psyc 101 Introduction to Psychology 3
Soc 101 Introduction to Sociology 3
VoEd 351 Principles & Philosophy of Vocational Ed 3
VoEd 444 Diverse Populations & Individual Differences 2
VoEd 445 Proseminar in Vocational Education 2
VoEd 464 Vocational Guidance 2
Biology elective 4
Chemistry elective 4
Humanities elective 3
Math/statistics/computer science elective 3

CLOTHING, TEXTILES AND DESIGN (B.S.F.C.S.)

This major considers clothing, textiles and design as basic human needs, consumer products, historical and cultural artifacts, and communication tools. Career emphasis areas include retail buying and selling, design, and international marketing.

Required course work includes the university requirements (see regulation J-3) and:

FCS 105 Individual & Family Development 3
FCS 123 Textiles 3
FCS 129 Dress & Culture 3
FCS 205 Concepts in Human Nutrition or 346 Personal & Family Finance & Management or 448 Consumer Education 3-4
FCS 223 Evaluation of Apparel & Textiles 3
FCS 224 Apparel Design I 3
FCS 329 Historic Costume 3
FCS 429 Current Issues in Clothing & Textiles 3
FCS 496 Internship: Fashion Business 3-9
Art 100 Visual Art 3
Bus 321 Marketing 3
Chem 101 Introduction to Chemistry I 4
ComG 101 Fundamentals of Public Speaking 2
Econ 201 or 202 Principles of Economics 3
Psyc 101 Intro to Psychology or Soc 101 Intro to Sociology 3
Anthropology elective 3
Computer applications elective 2-3
Adviser-approved clothing, textiles, & design electives 9
Adviser-approved courses selected from the following disciplines: FCS, Acct, Anthr, Art, BLaw, Bus, FL, Hist, IPD, Psych, Soc, Stat, ThA, Fren 30
Humanities electives 3
Humanities or social science electives 3-4
Math/statistics elective 4
Electives to total 132 cr for the degree ..... —

FOOD AND NUTRITION (B.S.F.C.S.)

Required course work includes the university requirements (see regulation J-3) and one of the following options.

Upon acceptance to the professional phase of the CPD during the second semester of the sophomore year, students must maintain a cumulative grade-point average of at least 2.70 to remain in and graduate from the program. Students must also obtain at least a B (80%) in all CPD courses required for membership in the American Dietetic Association.

A. COORDINATED PROGRAM IN DIETETICS

FCS 105 Individual & Family Development 3
FCS 170 Introductory Foods 3
FCS 205 Concepts in Human Nutrition 3
FCS 270 Intermediate Foods 3
FCS 305 Nutrition Related to Fitness & Sport 2
FCS 361 Advanced Nutrition 4
FCS 362 Introduction to Clinical Dietetics 4
FCS 363 Diet Therapy 4
FCS 364 Clinical Dietetics I 4
FCS 384 Quantity Food Production & Equipment 5
FCS 387 Food Systems Management 3
FCS 405 Eating Disorders 2
FCS 470 Trends in Nutrition Research 3
FCS 472 Clinical Dietetics II 6
FCS 473 Community Nutrition 4
FCS 474 Food Research & Development 3
FCS 485 Computer Applications in Food Administration 2
FCS 486 Nutrition in the Life Cycle 4
FCS 487 Management Supervised Practice 2
FCS 488 Food Service Management Practicum 6
Acct 201 Introduction to Financial Accounting 3
Bus 311 Introduction to Management 3
Chem 101 Intro to Chemistry I or 111 Prin of Chemistry I 4
Chem 275, 276 Carbon Compounds & Lab 4
CS 101 Introduction to Computer Science or ASM 240 Computer Applications in Biological Systems 3
Econ 201 Principles of Economics 3
Engl 317 Technical & Engineering Report Writing 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
MMBB 154, 155 Principles of Microbiology & Lab 4
MMBB 380 Introductory Biochemistry 3
Psyc 101 Introduction to Psychology 3
Soc 101 Introduction to Sociology 3
Stat 251 Principles of Statistics 3
Zool 120 Human Anatomy 4
Zool 121 Human Physiology 4
Humanities electives 6
Electives to total 132 cr for the degree ..... —

B. CONSUMER FOODS OPTION

This option prepares students to work on consumer issues such as food safety, product development, and labeling in the food industry, government agencies, and commodity groups.

FCS 105 Individual & Family Development 3
FCS 170 Introductory Foods 3
FCS 205 Concepts in Human Nutrition 3
FCS 270 Intermediate Foods 3
FCS 448 Consumer Education 3
FCS 474 Food Research & Development 3
FCS 499 Directed Study 3
Biol 100 Introduction to Biology 4
Bus 311 Introduction to Management 3
Bus 321 Marketing or Bus 324 Consumer Behavior 3
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 275, 276 Carbon Compounds & Lab 4
ComG 101 Fundamentals of Public Speaking 2
Comm 265 Advertising & Society 3
CS 101 Introduction to Computer Science or ASM 240 Computer Applications in Biological Systems 3
Econ 201 or 202 Principles of Economics 3
Engl 313 Business Writing or 317 Technical & Engr Report Writing 3
FST 416, 417 Food Microbiology & Lab 4
FST 422 Food Quality Evaluation 3
FST 460, 461 Food Chemistry & Lab 4
FST elective 4
Math 143 Pre-calculus Algebra & Analytic Geometry 3
MMBB 250 General Microbiology 5
MMBB 380 Introductory Biochemistry 3
Psyc 101 Introduction to Psychology 3
Soc 101 Introduction to Sociology or Anth 100 Introduction to Anthropology 3
Stat 251 Principles of Statistics 3
Humanities electives 6
Electives to total 132 cr for the degree ..... —

Department of Fish and Wildlife Resources

George W. LaBar, Dept. Head (105A FWR Bldg. 83844-1136; phone 208/885-6434).

Fishery Resources Faculty: David H. Bennett, Ted C. Bjornn, Ernest L. Brannon, James L. Congleton, C. Michael Falter, Larisa A. Ford, George W. LaBar, L. Kirk Lohman, Christine M. Moffitt, Dennis L. Scarnecchia.

Wildlife Resources Faculty: Brian C. Dennis, Edward O. Garton, Dennis L. Murray, James M. Peek, Kerry P. Reese, John T. Ratti, J. Michael Scott, R. Gerald Wright.

The professions of fish and wildlife conservation deal with the application of principles of biology and ecology to the management of fish or wildlife populations and their habitats. The two professions are nearly identical in their basic approach to resource management and differ mainly in the type of environment, i.e., aquatic or terrestrial, with which they are concerned.

Fishery biologists and scientists conduct research or apply management principles to aquatic ecosystems. They may become involved with biological monitoring, environmental impact studies, area planning and preservation, maintenance of endangered fish, hatchery operation, commercial fish farming, control and prevention of fish diseases, and management of stream or lake ecosystems.

Wildlife biologists, or managers, attempt to maintain adequate populations of game and nongame wildlife species. This involves studying wildlife and its habitat so that management programs can be biologically based. The job often involves coordinating wildlife management programs with other natural resource activities such as forest management, range management, and land use planning.

Both professions offer opportunities in law enforcement, communications, and public relations. A common saying, and one with a great deal of truth, is that fish or wildlife management is largely people management.

Bachelor of Science degrees are offered in fishery resources and in wildlife resources. There are two options in fishery resources: aquaculture and management. Elective courses in both fisheries and wildlife resources provide an opportunity to gain additional knowledge in a special area of interest or to broaden into other fields. To ensure that the student gains practical experience, one season of approved work experience or internship before graduation is required.

Fish and wildlife graduates find employment with numerous federal and state agencies, educational institutions, and in the private sector. These include the U.S. Fish and Wildlife Service, the Bureau of Land Management, the U.S. Forest Service, the National Marine Fisheries Service, the Army Corps of Engineers, state fish and game or conservation departments, and private organizations such as power companies, commercial fish growers, and consultants. Recent surveys have shown that baccalaureate graduates of UI obtain employment at a rate considerably above the national average.

The university offers Master of Science and Doctor of Philosophy degrees in several specialty areas of fish and wildlife resources. The M.S. (thesis option) and the Ph.D. degrees each require original research.

The research mission of the department is attainment of new knowledge and the understanding of natural resources, their interrelationships and uses. The objectives of the research program are, thus, to attain knowledge of the environment and to develop management alternatives that will assist in the conservation of resources while meeting society's needs. The dissemination of this knowledge through publications, continuing education, and other channels of communication is an essential departmental function.

For additional information, please call the department at (208) 885-6434.

Courses

See part 6 for courses in Fishery Resources (Fish) and Wildlife Resources (WLF).

Curricular Requirements

FISHERY RESOURCES (B.S.Fish.Res.)

Students pursuing a B.S. degree in fishery resources (management or aquaculture options) must have received a grade of C or better in each of the following five indicator courses to register for upper-division courses in fishery resources and to graduate with a B.S.Fish.Res.: Biol 201 and 202, Stat 251, WLF/For/Rnge 221, and Fish 290.

Students must achieve a grade of C or better in each upper-division course listed in the requirements for the B.S. degree in fishery resources (management or aquaculture options).

Required course work includes the university requirements (see regulation J-3) and one of the following options:

A. AQUACULTURE OPTION

First and Second Years

Fish 102 The Fishery Resources Profession 1
Fish 290 Principles of Fish Biology & Management 2
Acct 201 Introduction to Financial Accounting 3
ASM 240 Computer Applications in Biological Systems 3
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Chem 101 Introduction to Chemistry I 4
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
Math 160 Survey of Calculus 4
Phys 100 Fundamentals of Physics 4
WLF/For/Rnge 221 Natural Resources Ecology 3
WLF 290 Principles of Wildlife Biology 2
Two of the following courses (taken before enrolling in
Fish/WLF/For/ForP/Rnge/RRT 302) 4
For 270 Principles of Forest Ecosystem Management
RRT 287 Principles of Resource Recreation & Tourism Management
Rnge 251 Principles of Range Resources Management
ForP 250 Principles of Forest Products

Summer Session

Fish/WLF/For/ForP/Rnge/RRT 302 Wildland Field Ecology II 2

Third and Fourth Years

Fish 411 Ichthyology 4
Fish 413 Fish Ecology 2
Fish 415 Limnology 4
Fish 417 Aquaculture 3
Fish 418 Fisheries Management 4
Fish 420 Fish Diseases 3
Fish/WLF/For/ForP/Rnge/RRT 470 Interdisciplinary Natural Resource Planning 3
Fish 495 Seminar 1
AgEc 391 Agribusiness Management 3
AVS 305 Animal Nutrition 3
AVS 371 Anatomy & Physiology or Zool 423 Comparative Vertebrate Physiology 3-4
Bus 321 Marketing 3
Econ 201, 202 Principles of Economics 6
Engl 313 Business Writing or Engl317 Technical & Engr Report Writing 3
For/RRT/Soc 235 Society & Natural Resources 3
MMBB 250 General Microbiology 5
MMBB 380 Introductory Biochemistry 3
Stat 251 Principles of Statistics 3
Electives to total 128redits for the degree ..... —

B. MANAGEMENT OPTION

First and Second Years

Fish 102 The Fishery Resources Profession 1
Fish 290 Principles of Fish Biology & Management 2
ASM 240 Computer Applications in Biological Systems 3
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Chem 101 Introduction to Chemistry I 4
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
Geol 101 Physical Geology or Soil 205, 206 General Soils & Lab 4
Math 160 Survey of Calculus 4
Phys 100 Fundamentals of Physics 4
WLF/For/Rnge 221 Natural Resources Ecology 3
WLF 290 Principles of Wildlife Biology 2
Two of the following courses (taken before enrolling in
Fish/WLF/For/ForP/Rnge/RRT 302) 4
For 270 Principles of Forest Ecosystem Management
RRT 287 Principles of Resource Recreation & Tourism Management
Rnge 251 Principles of Range Resource Management
ForP 250 Principles of Forest Products

Summer Session

Fish/WLF/For/ForP/Rnge/RRT 302 Wildland Field Ecology II 2

Third and Fourth Years

Fish 411 Ichthyology 4
Fish 413 Fish Ecology 2
Fish 415 Limnology 4
Fish 417 Aquaculture 3

Fish 418 Fisheries Management 4
Fish 420 Fish Diseases 3
Fish/WLF/For/ForP/Rnge/RRT 470 Interdisciplinary Natural Resource Planning 3
Fish 495 Seminar 1
AVS 371 Anatomy & Physiology or Zool 423 Comparative Vertebrate Physiology 3-4
Econ 202 Principles of Economics 3
Engl 313 Business Writing or 317 Technical & Engr Report Writing 3
Ent 472 Aquatic Entomology 1
Ent 474 Aquatic Entomology Laboratory 2
For/RRT/Soc 235 Society & Natural Resources 3
MMBB 250 General Microbiology 5
MMBB 380 Introductory Biochemistry 3
Stat 251 Principles of Statistics 3
WLF 448 Fish & Wildlife Population Ecology 4
Electives to total 128 credits for the degree ....—

WILDLIFE RESOURCES (B.S.Wildl.Res.)

Students pursuing a B.S. in wildlife resources must have received a grade of C or better in each of the following five indicator courses to register in upper-division courses in wildlife resources and to graduate with a B.S. in wildlife resources: Biol 202 and 203, Stat 251, WLF 221 and 290.

A student must receive a grade of C or better in each upper-division course listed in the requirements for the B.S. in wildlife resources.

Required course work includes the university requirements (see regulation J-3) and:

First and Second Years

WLF/For/Rnge 221 Natural Resources Ecology 3
WLF 290 Principles of Wildlife Biology 2
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Bot 241 Systematic Botany 3
Chem 101 Introduction to Chemistry I 4
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
Fish 290 Principles of Fish Biology & Management 2
For/RRT/Soc 235 Society & Natural Resources 3
Geol 101 Physical Geol or Soil 205, 206 General Soils & Lab 4
Math 160 Survey of Calculus or 170 Analytic Geometry & Calculus I 4
Phys 100 Fundamentals of Physics 4
Two of the following courses (taken before enrolling in WLF 302) 4
For 270 Principles of Forest Ecosystems Management
RRT 287 Principles of Resource Recreation & Tourism Management
Rnge 251 Principles of Range Resources Management
ForP 250 Principles of Forest Products

Summer Session

WLF/For/Rnge/RRT 302 Wildland Field Ecology II 2

Third and Fourth Years

WLF 314 Wildlife Ecology 3
WLF 440 Conservation Biology 2
WLF 442 Wildlife Management 4
WLF 448 Fish & Wildlife Population Ecology 4
WLF/For 470 Interdisciplinary Natural Resource Planning 3
WLF 495 Wildlife Seminar 1
AVS 371 Anatomy & Physiology or Zool 324 Comparative Vertebrate Anatomy 4
Biol 351 General Genetics 3
Econ 202 Principles of Economics 3
Engl 207 Persuasive Writing or 208 Personal & Exploratory Writing or
209 Inquiry-Based Writing or 317 Technical & Engr Report Writing 3
For 294 Quantitative Resource Analysis or ASM 240
Computer Applications in Biological Systems 3
For 383 Economics for Natural Resource Managers 3
RRT 387 Environmental Interpretive Methods 3
Stat 251 Principles of Statistics 3
Zool 482 Natural History of Birds 3
Zool 483 Natural History of Mammals 3
Approved electives from one of the following areas: quantitative;
habitat; aquatic; communication; policy-administration; biology 9
Electives to total 128 credits for the degree ....—

Department of Food Science and Toxicology

Jerry H. Exon, Dept. Head (22 Glen C. Holm Bldg. 83844-2201; phone 208/885-7081; e-mail fstasl@uidaho.edu). Faculty: A. Larry Branen, P. Michael Davidson, Jerry H. Exon, David R. Lineback, Bernadene A. Magnuson, Gregory Moller, John E. Montoure, Patricia A. Talcott, John H. Thorngate III. Adjunct Faculty: Kimberly A. Anderson, John Baranowski, Laurel J. Branen, Kathe A. Gabel, Miles Willard.

Food science is the study of the science and technology related to the safety, quality, procurement, processing, preservation, and distribution of foods and food products.

Toxicology is the scientific study related to poisonous substances, their biologic effects, physical properties, and antidotes, and the recognition and treatment of diseases caused by such substances. These substances may be naturally occurring or manufactured.

The Department of Food Science and Toxicology offers the B.S.F.S. and M.S. degrees in food science. Through a combination of specific program requirements, course offerings, and student advising, the Department of Food Science and Toxicology prepares students for careers in private industry, government, and academia. The professions of food science and toxicology deal with the relationship of the basic sciences to the well being of all people. Departmental programs include investigation of food additives and chemicals that protect food from deterioration and spoilage; development of new food and non-food products from raw agriculture commodities; testing of natural chemicals for beneficial health effects; examination and manipulation of food chemicals to improve product quality; investigating the sensory qualities of foods and beverages for consumer acceptance; studying toxic effects of chemicals that affect human health and the environment; and detection and study of microorganisms that are foodborne pathogens.

Courses

See part 6 for courses in Food Science and Toxicology (FST).

Curricular Requirements

FOOD SCIENCE (B.S.F.S.)

Emphasis in this program is placed on providing a sound background to prepare students for positions in food processing and related industries, governmental agencies, and research laboratories, and to prepare students who wish to pursue an advanced degree in food science. Faculty from both UI and Washington State University teach courses in the food science program. Some classes are taught on the UI campus and some on the WSU campus.

Required course work includes the university requirements (see regulation J-3) and:

First and Second Years

FST 101 Introduction to Food Science 3
FST 210 The Science of Viticulture & Enology 2
ASM 240 Computer Applications in Biological Systems 3
Biol 100 Introduction to Biology 4
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 275, 276 Carbon Compounds & Lab 4
ComG 101 Fundamentals of Public Speaking 2
Econ 202 Principles of Economics 3
FCS 170 Introductory Foods 3
MMBB 250 General Microbiology 5
MMBB 380 Introductory Biochemistry 3
Phys 111 General Physics & Lab I 4
Two courses chosen from Math 160, 170, and 175 8

Third and Fourth Years

FST 303 Food Processing 3
FST 400 Seminar 1
FST 416, 417 Food Microbiology & Lab 4
FST 422 Food Quality Evaluation 3
FST 433 Agricultural Processing Systems 3
FST 434 Food Engineering Laboratory 1
FST 450 Food Fermentations 3
FST 460, 461 Food Chemistry & Lab 4
FST 462 Food Analysis 4
FST 470 Advanced Food Technology 3
FST commodity electives (FST 263, 264, 301, 302, or 304) 5-6
Engl 317 Technical & Engineering Report Writing 3
FCS 205 Concepts of Human Nutrition 3
Stat 251 Principles of Statistics 3
Electives to total 129-131 credits for the degree ....—

Academic Minor Requirements

FOOD SCIENCE MINOR

FST 101 Introduction to Food Science 3
FST 303 Food Processing 3
FST 400 Seminar 1
FST 416, 417 Food Microbiology & Lab 4
FST 460 Food Chemistry 3
Additional courses in food science (FST) 4

Department of Foreign Languages and Literatures

James R. Reece, Dept. Chair (302 Admin. Bldg. 83844-3174; phone 208/885-6179; fax 208/885-8964; email forlang@uidaho.edu). Faculty: George Bridges (German), Alfred W. Jensen (Spanish), Irina A. Kappler-Crookston (Spanish), Richard M. Keenan (Spanish), Elisabeth Lapeyre (French), Cecelia E. Luschnig (Classics), Michael W. Moody (Spanish), Louis A. Perraud (Classics), James R. Reece (German), Alan Rose (French), Galen O. Rowe (Classics), Gerd Steckel (German), Robert L. Surles (Spanish), Dennis D. West (Spanish), Joan M. West (French).

The study of a foreign language and literature is a way of expanding one's horizons while developing specific linguistic skills that will enhance career, academic, and travel opportunities. One of the many benefits derived from foreign-language study is the ability to transcend linguistic and cultural parochialism. To understand the uniqueness of one's own language and civilization, knowledge of another culture is essential. Language study is the key that unlocks the mysteries surrounding a foreign people. Through language, one is able to explore their literature, art, history, and philosophy—in short, their way of life. In preparing to meet the challenges of a rapidly changing and interdependent world, foreign language expertise plays an increasingly important role. In many areas (business, education, communications, social work, technical and engineering positions, science, law, medicine, etc.), knowledge of a second language is not only desirable but necessary.

The Department of Foreign Languages and Literatures offers major programs of study in three modern languages (Spanish, French, and German) as well as in classical studies and Latin. The department also offers elementary and intermediate level course work in Japanese. In addition, a cooperative course agreement with Washington State University in nearby Pullman makes it possible for students to complete basic course work in Chinese and Russian.

The department's business and computer science options offer students the opportunity to combine a foreign language major with pre-professional course work in these areas. Similarly, the international studies major allows students to combine advanced foreign language study with a specific issue and area study focus.

Language instruction at UI is proficiency-oriented in approach and encourages active student involvement from the outset. Language classes are small enough to allow for instructor-student interaction and to ensure that each student receives individual attention. Classroom instruction is supported by a fully equipped language learning laboratory with facilities for audiocassette, synchronized slide/sound, and videocassette instruction.

The department actively encourages its students to pursue opportunities to work and/or study in foreign countries as part of their study program. Foreign language faculty advisers and the staff of the UI International Programs Office will gladly assist students in planning a semester's or year's study abroad.

If a student has already studied a foreign language in high school, he or she may be eligible to receive advanced placement credits simply by enrolling in a more advanced course at UI.

The department offers graduate work in French, German, and Spanish leading to the M.A.T. degree. The purpose of graduate programs in languages, cultures, and literatures is to offer advanced scholarly preparation for careers in teaching.

For further information, please consult the department chair (208/885-6179).

Courses

See part 6 for courses in English (FLEN), Chinese (Chin), French (Fren), German (Germ), Ancient Greek (Grek), Japanese (Japn), Latin (Latn), Russian (Russ), Spanish (Span), and General Courses (FL).

Curricular Requirements

A maximum of 15 transfer credits and/or credits earned through study abroad may be applied toward the upper-division requirements for the B.A. degree in French, German, Latin, and classical studies. A maximum of 18 such credits may be applied toward the upper-division requirements for the B.A. degree in Spanish.

CLASSICAL STUDIES (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

FLEN 211 Classical Mythology (Gods) 2
FLEN 212 Classical Mythology (Heroes) 2
FLEN 363-364 Literature of Ancient Greece & Rome 6
Grek 341-342 Elementary Greek (or equivalent) 8
Latn 101-102 Elem Latin I-II or 261-262 Intensive Latin (or equiv) 8
Additional Latin and/or Greek courses numbered above Latn 262 and Grek 342 (may incl up to 3 cr of adv lab courses in each language—Latn 369; Grek 349 other than basic skills) 18
At least eight credits chosen from the following 8
- Additional upper-div Latin and Greek courses (recommended for those seeking admission to graduate school)
- FLEN 243 English Word Origins
- FLEN 441 Ancient Greek Civilization
- FLEN 442 Civilization of Ancient Rome
- Anth 230 World Prehistory
- Arch 385 History of Architecture I: Pre-Modern
- Engl 441 Introduction to the Study of Language
- Phil 309 History of Ancient Philosophy

Related fields or minor as approved by major adviser

FRENCH (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

Fren 101-102 Elementary French I-II or equivalent 8
Fren 201-202 Intermediate French I-II or equivalent 8
Fren 301 Advanced French Grammar 3
Courses selected from the following 9
- Fren 302 Advanced French Writing Skills
- Fren 303 French Civilization: Institutions
- Fren 304 French Culture
- Fren 305 Survey of French Fiction & Drama
- Fren 306 Survey of French Essay & Poetry

Upper-division French courses 9
A second foreign language (elem & interm or equiv) 16
Courses in related fields approved by chair or approved academic minor in a related field 20

GERMAN (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

Germ 101-102 Elementary German I-II or equivalent 8
Germ 201-202 Intermediate German I-II or equivalent 8
Upper-division courses in German language, lit, and culture incl minimum of 12 cr from the following (at least one course from each grouping) and a minimum of 3 cr in 400-level German language & lit 21
- Germ 321 German Conversation & Germ 322 German Grammar & Composition
- Germ 325-326 German Culture & Institutions
- Germ 327-328 Survey of German Literature

A second foreign language (elem & interm or equiv) 16
Courses in related fields approved by chair or approved academic minor in a related area 20

LATIN (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

Latn 101-102 Elementary Latin I-II (or equivalent) 8
FLEN 243 English Word Origins 2
FLEN 364 Literature of Rome 3
FLEN 442 Civilization of Ancient Rome 3
Upper-division courses in Latin 20
A second foreign language (elem and interm, or equivalent) 16
Related fields or academic minor (as approved by chair) 20

SPANISH (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

Span 101-102 Elementary Spanish I-II (or equivalent) 8
Span 201-202 Intermediate Spanish I-II (or equivalent) 8
Span 381-382 Advanced Spanish Grammar & Composition 6
Span 383-384 Hispanic Culture & Institutions 6
Span 385-386 Survey of Spanish Literature 6
Span 388 Survey of Spanish-American Literature 3
Upper-division courses in Spanish language 3
A second foreign language (elem and interm, or equivalent) 16
Related fields (as approved by chair) 16

FOREIGN LANGUAGES (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

One foreign language, elementary and intermediate 16
Third-year language course (Fren 301-302, Germ 321-322, Latn 365-366, Span 381-382) 3

And one of the following options:

A. BUSINESS OPTION

Designed to provide the student majoring in foreign languages with a liberal arts background and a component of business courses that will form a good beginning for entering a program leading to the degree of Master of Business Administration.

Approved upper-division foreign language courses 15
Foreign language business course or approved alternative 3
Acct 395 Fundamentals of Accounting or 201-202 Intro to Financial Accounting & Intro to Managerial Accounting 4-6
Bus 301 Financial Management 3
Bus 311 Introduction to Management 3
Bus 321 Marketing 3
Bus 350 Management Information Systems 3
Bus 380 International Business or Bus 482 International Marketing or Econ 446 International Economics or Econ 447 Economics of Developing Countries 3
CS 112 Introduction to Problem Solving & Programming 3
Econ 272 Foundations of Econ Analysis or 201, 202 Prin of Economics 4-6
Stat 251 Principles of Statistics 3
Electives (as approved by chair) to total 128 cr for the degree ..... —

B. COMPUTER SCIENCE OPTION

Designed to provide a student majoring in foreign languages with a liberal arts background and a component of computer science courses to prepare for admission to either the M.A.T. program in foreign languages or the M.S. program in computer science. This type of curriculum, involving competence in a foreign language as well as mathematical maturity, skill in the use of at least one programming language, and a basic knowledge of computer hardware, should also prove to be a fine background for developing interesting careers and/or graduate study in various fields, e.g., library science, international business, communications media, instructional media, and education.

Approved upper-division foreign language courses in one foreign language or the following 18
FLEN 243 English Word Origins
Grek 341-342 Elementary Greek
Latn 101-102 Elementary Latin I-II
Upper-division Latin and/or Greek courses (18 cr)
CS 112 Introduction to Problem Solving & Programming 3
CS 113 Program Design & Algorithms 3
CS 213 Data Structures 3
EE 340 Digital Logic 3
Math 176 Discrete Mathematics 3
Math 170, 175 Analytic Geometry & Calculus 8
Math 330 Linear Algebra 3
Stat 251 Principles of Statistics 3
Electives to total 128 cr for the degree (including at least 3 cr at the upper-division level) ..... —

Academic Minor Requirements

A maximum of 6 transfer credits and/or credits earned through study abroad may be applied toward the upper-division course requirements for a minor in French, German, Spanish, Latin, and Greek.

CLASSICAL STUDIES MINOR

FLEN 211 Classical Mythology (Gods) 2
FLEN 212 Classical Mythology (Heroes) 2
FLEN 243 English Word Origins 2

And one of the following emphasis areas:

Language Emphasis

Grek 341-342 Elementary Greek 8
Latn 101-102 Elementary Latin I-II 8
Courses chosen from the following 3
Upper-division Latin or Greek
FLEN 363 Literature of Ancient Greece
FLEN 364 Literature of Rome

Ancient World Emphasis

FLEN 363 Literature of Ancient Greece 3
FLEN 364 Literature of Rome 3
FLEN 441 Ancient Greek Civilization 3
FLEN 442 Civilization of Ancient Rome 3
Grek 341 Elementary Greek or Latn 101 Elementary Latin I 4
Phil 309 History of Ancient Philosophy or Arch 385 History of Architecture I: Pre-Modern 3

FRENCH MINOR

Fren 101-102 Elementary French I-II 8
Fren 201-202 Intermediate French I-II 8
Fren 301 Adv French Grammar or 302 Adv French Writing Skills 3
Upper-div courses in French (not incl lab-based and lit in translation courses) 6

GERMAN MINOR

Germ 101-102 Elementary German I-II 8
Germ 201-202 Intermediate German I-II 8
Germ 321 German Conversation or 322 German Grammar & Composition 3
Upper-div courses in German (not incl lab-based and lit in translation courses) 6

GREEK MINOR

Grek 341-342 Elementary Greek 8
Grek 349 Advanced Greek lab (other than basic skills) 1-3
FLEN 211 and/or 212 Classical Mythology 2-4
FLEN 363 Literature of Greece 3
Advanced Greek readings (400-level) 6-8
Courses to total 25 credits for the minor chosen from the following ..... —
Additional upper-division Greek courses
FLEN 243 English Word Origins
FLEN 364 Literature of Rome
FLEN 441 Ancient Greek Civilization
Phil 309 History of Ancient Philosophy

LATIN MINOR

Latn 101-102 or 261-262 Elementary or Intensive Latin 8
Latn 369 Advanced Latin Language Lab 1-3
FLEN 243 English Word Origins 2
FLEN 364 Literature of Ancient Rome 3
Advanced Latin readings (300- or 400-level) 6
Courses to total 25 credits for the minor chosen from the following ..... —
Additional Latin reading courses at 300- or 400-level (especially recommended for prospective teachers of Latin)
FLEN 211 Classical Mythology (Gods)
FLEN 212 Classical Mythology (Heroes)
FLEN 363 Literature of Ancient Greece
FLEN 442 Civilization of Ancient Rome

SPANISH MINOR

Span 101-102 Elementary Spanish I-II 8
Span 201-202 Intermediate Spanish I-II 8
Span 381 or 382 Adv Spanish Grammar & Composition 3
Upper-div courses in Spanish (not incl lab-based and lit in translation courses) 6

Department of Forest Products

Leonard R. Johnson, Dept. Head (102 FWR Bldg. 83844-1132; phone 208/885-6126). Faculty: Alton G. Campbell, Richard L. Folk, Thomas M. Gorman, Leonard R. Johnson, Harry W. Lee, Ali A. Moslemi, H. Peter Steinhagen, Francis G. Wagner. Adjunct Faculty: Louis L. Edwards, John S. Morris, Jay O'Laughlin, George M. Simmons. Affiliate Faculty: Keith A. Blatner, Manuel R. Jelvez, Peter Koch.

Wood is a constant part of the lives of the people in this country and throughout the world. Nearly 80 percent of the material going into the construction of a home in the U.S. is wood based. It is also in the paper we use as newspapers, money, books, and packaging. In the U.S., every man, woman, and child consumes over 2,000 pounds of wood per year in the form of various products. The forest products industries rely on a renewable resource—trees—to produce over 5,000 different products for shelter, communications, packaging, and chemicals. Wood not only forms the raw material for the product, it also supplies a large portion of the energy needed by these industries. Many wood-using industries generate more than 50 percent of their energy requirements from wood residues. The industry utilizes almost all the wood fiber that is delivered to the mills and the innovation and modernization now taking place will assure a higher degree of efficiency and a greater level of utilization of the wood fiber.

The programs of the Forest Products Department are designed to prepare students for rewarding careers in an array of forest-products industries. Outstanding careers range from work with light-frame construction, forest engineering, log transport systems, pulp and paper manufacture, wood building products manufacture, and the business and marketing aspects of forest industries. In addition to jobs in industry, our graduates also obtain positions in a variety of governmental agencies and multinational corporations. A recent survey of graduates from the Forest Products Department showed that 100 percent of the respondents were employed in permanent, forest-products jobs or were in graduate school.

The Department of Forest Products cooperates with the wood technology program at Washington State University, the pulp and paper program at the University of Minnesota, the Department of Architecture at the University of Idaho, and the region's forest products industries in carrying out its program responsibilities. The forest products industry actively supports our programs through scholarships for undergraduate students.

The department offers four options within the B.S.For.Prod. degree. These include timber harvesting, wood construction and design, forest products business management, and pulp and paper technology.

The pulp and paper option is a cooperative program with the University of Minnesota. The student in this option spends the first three years at UI. The senior year is spent at the University of Minnesota, but the degree is awarded by the University of Idaho. This program permits access to the professional courses at both universities.

Facilities available to the department include a University Experimental Forest for use in the field work of the timber harvesting option, an experimental forest student logging crew where students can receive hands on experience with timber harvesting and forest management, and forest products laboratory equipment such as a computerized hot press, testing machine, wood flaker, blender, dry kiln, conditioning chambers, and microcomputer lab. This equipment allows students hands on experience with the manufacture and testing of a variety of forest products.

The department offers bachelor's, master's, and doctoral programs. The undergraduate programs are structured, but still allow the student to follow specific interests through course selection from restricted and unrestricted electives. A graduate student's program can be tailor-made to the student's career goals and aspirations. A variety of industrial organizations and public agencies provide funds and facilities to carry out research and this allows the department to offer assistantships and fellowships.

While graduate work is often undertaken by students who desire to enter careers in teaching and research, the program is also recommended for students who plan to enter production management and marketing careers. Work at the master's and doctoral levels is designed to enhance the student's professional background and is often pursued by those with backgrounds in forestry, business management, engineering, and other fields. For some students who plan to strengthen their background and enter the industrial and production fields, a nonthesis option at the master's level is available. Current research in the department involves topics on solid wood products, new wood products, fiber products and those made of particulates, timber harvesting systems, wood energy, and wood construction.

Courses

See part 6 for courses in Forest Products (ForP).

Curricular Requirements

FOREST PRODUCTS (B.S.For.Prod.)

Required course work includes the university requirements (see regulation J-3) and one of the following options.

No more than 25 percent of the course work used for the forest products degree may be taken in business courses (excluding Econ 201 and 202). Specifically, of the 128 credits required, at most 32 credits taken in business courses may be counted toward the degree.

A. WOOD CONSTRUCTION AND DESIGN OPTION

This option is designed for students interested in residential and light commercial construction or design management positions that emphasize effective use of wood as a structural material. Students may focus in one of two emphasis areas. In the architectural technology emphasis area, the student will develop design skills in addition to a background in business and wood technology for positions in non-licensed design, specification writing, design-build construction, and architectural and construction liaison. Students selecting the wood construction business emphasis area will be prepared for careers that include both supervisory and managerial positions in residential and light commercial building and building materials, sales and marketing of wood products, estimating, banking, insurance, and government agencies that deal with housing. The wood construction and design option can also provide an educational foundation for those wishing to become entrepreneurs in the area of wood construction.

ForP 250 Principles of Forest Products 2
ForP 277 Wood Structure & Identification 3
ForP 337 Physical & Mechanical Properties of Wood 3
ForP 365 Wood Building Technology 3
ForP 435 Wood-Moisture Relationships & Drying 3
ForP 436 Wood Composites 3
ForP 437 Wood as a Structural Material 2
ForP 444 Lumber Manufacturing 2
ForP 450 Wood Deterioration & Preservation 2
ForP 499 DS: Wood Construct/Design (design project) 2
Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
Arch 156 Graphic Communication 2
Arch 255 Advanced Architectural Graphics 2
Arch 256 Basic Architectural Design 3
Arch 266 Materials & Methods 3
Arch 366 Building Technology I 3
Arch 383 Architectural Site Design 3
Arch 384 Computer-Aided Design 2
Arch 463-464 Environmental Control Systems 8
Arch 475 Professional Practice I 3
Arch 499 DS: Wood Construct/Design (design project) 2
Biol 100 Introduction to Biology 4
BLaw 265 Legal Environmental of Business 3
Chem 101 Introduction to Chemistry I 4
ComG 101 Fundamentals of Public Speaking 2
CS 112 Intro to Problem Solving & Programming or ASM 240 Computer Applications in Biological Systems 3
Econ 201, 202 Principles of Economics 6
Engl 313 Business Writing or 317 Tech & Engr Report Writing 3
FWR 101 Forestry Orientation 1
Math 160 Survey of Calculus 4
Phys 111 General Physics I 4
Stat 251 Principles of Statistics 3
Additional core electives 9-11

And one of the following emphasis areas:

Architecture Technology Emphasis:

Arch 453-454 Architectural Design II 6
Electives chosen from the following 9
- Arch 476 Professional Practice II
- Art 111-112 Drawing I-II
- Bus 321 Marketing
- Bus 327 Services/Nonprofit Marketing
- Bus 412 Human Resource Management
- Bus 414 Entrepreneurship
- ForP 230, 231, 232 Forest Land Measurements
- For 320 Dendrology
- IA 151 Introduction to Interior Design
- IA 152 Interior Design I
- LArc 270 Landscape Construction I
- LArc 389 History of Landscape Architecture

Electives to total 128 credits for the degree ..... —

Construction Business Emphasis:

Acct 381 Accounting for Managers & Investors 3
Bus 311 Introduction to Management 3
Electives chosen from the following 9
- ForP 230, 231, 232 Forest Land Measurements
- ForP 477 Forest Products Business Management
- Bus 261 Real Estate
- Bus 321 Marketing
- Bus 327 Services/Nonprofit Marketing
- Bus 362 Real Property Appraisal
- Bus 364 Insurance
- Bus 412 Human Resource Management
- Bus 414 Entrepreneurship
- For 320 Dendrology
- LArc 270 Landscape Construction

Electives to total 128 credits for the degree ..... —

B. TIMBER HARVESTING OPTION

This program area prepares students to work as managers and designers of logging operations in small timber harvesting firms, larger forest products companies, forest engineering consulting organizations, and government agencies. The program provides background in development and design of harvesting plans and timber sales, supervision of logging crews, design and layout of roads, management of logging operations, and wood procurement. Other positions can be found in the areas of equipment development and marketing and as technical representatives for equipment companies. Beyond the courses required in the basic sciences and timber harvesting, students may choose course work that will also emphasize technology and engineering or natural resources management.

ForP 230, 231, 232 Forest Land Measurements 3
ForP 250 Principles of Forest Products 2
ForP 277 Wood Structure & Identification 3
ForP/RRT/Rnge/For/Fish/WLF 301, 302 Wildland Field Ecology I, II 3
ForP 336 Introduction to the Pulp & Paper Industry 1
ForP 337 Physical & Mechanical Properties of Wood 3
ForP 430 Forest Engineering & Harvesting 3
ForP 431 Production & Cost Control in Forest Industry 3
ForP 432 Low Volume Forest Roads 3
ForP 433 Forest Tractor System Analysis 3
ForP 434 Cable Systems Analysis 3

ForP 444 Lumber Manufacturing....2
ForP 450 Wood Deterioration & Preservation....2
ForP/For/RRT/Rnge/WLF/Fish 470 Interdisciplinary Natural Resource Planning....3
Chem 101 Introduction to Chemistry I....4
ComG 101 Fundamentals of Public Speaking....2
CS 112 Intro to Problem Solving & Programming or ASM 240 Computer Applications in Biological Systems or For 294 Quantitative Resource Analysis....3
Econ 201, 202 Principles of Economics....6
Engl 313 Business Writing or 317 Tech & Engr Report Writing....3
FWR 101 Forestry Orientation....1
For/Rnge/WLF 221 Natural Resources Ecology....3
For/RRT/Soc 235 Society & Natural Resources....3
For 270 Principles of Forest Ecosystem Management....2
For 274 Forest Measurement Techniques....2
For 374 Forest Mensuration....3
Soil 205 General Soils....3
Stat 251 Principles of Statistics....3
Two of the following....4
Fish 290 Principles of Fish Biology & Management
Rnge 251 Principles of Range Resources Management
RRT 287 Principles of Resource Recreation & Tourism Management
WLF 290 Principles of Wildlife Biology
Social sciences and humanities electives....8-10

And one of the following emphasis areas:

Technical Emphasis

Biol 100 Introduction to Biology....4
CE 210 Engineering Statics....3
CE 316 Advanced & Route Surveys or 317 Land Surveying....2-3
CE 321 Hydrology....3
Math 170, 175 Analytic Geometry & Calculus I, II....8
ME 220 Engineering Dynamics....3
Phys 230, 232 Engineering Physics I-II....6
Electives to total 128 cr for the degree....—

Resource Emphasis

Biol 201 Introduction to the Life Sciences....4
Biol 203 General Botany....4
CE 317 Land Surveying....2
For 320 Dendrology....3
For 424 Silviculture....3
For 462 Watershed Management....2
Phys 113 General Physics or 211 Engineering Physics I....3
Math 160 Survey of Calculus or 170 Analytic Geom & Calculus I....4
Electives to total 128 cr for the degree....—

C. FOREST PRODUCTS BUSINESS MANAGEMENT OPTION

This program is designed for students who plan careers in the staff or line management of firms in the forest products industry. Graduates are prepared for positions in production management, marketing and distribution of wood products, and in the technical service and support areas of the forest products industry. Students focus on the production, distribution, and marketing of wood products from a combined technical and managerial perspective. The degree also provides a foundation for pursuing a graduate degree in business, for example, the M.B.A. or M.S.

ForP 250 Principles of Forest Products....2
ForP 277 Wood Structure & Identification....3
ForP/For/RRT/WLF/Rnge/Fish 301, 302 Wildland Field Ecology I, II....3
ForP 336 Introduction to the Pulp & Paper Industry....1
ForP 337 Physical & Mechanical Properties of Wood....3
ForP 425 Forest Products Marketing....2
ForP 426 Quality Control in Wood Products Manufacture....2
ForP 430 Forest Engineering & Harvesting....3
ForP 431 Production & Cost Control in Forest Industry....3
ForP 435 Wood-Moisture Relationships & Drying....3
ForP 436 Wood Composites....3
ForP 444 Lumber Manufacturing....2
ForP 450 Wood Deterioration & Preservation....2
ForP/For/RRT/WLF/Rnge/Fish 470 Interdisciplinary Natural Resource Planning....3
ForP 477 Forest Products Business Management....2
Acct 201 Introduction to Financial Accounting....3
Acct 202 Introduction to Managerial Accounting....3
Biol 100 Introduction to Biology....4
BLaw 265 Legal Environment of Business....3
Bus 301 Financial Management....3
Bus 311 Introduction to Management....3
Bus 321 Marketing....3
Bus 332 Quantitative Methods in Business....3
Bus 370 Production/Operations Management....3
Chem 101 Introduction to Chemistry I....4
ComG 101 Fundamentals of Public Speaking....2
CS 112 Intro to Problem Solving & Programming or ASM 240 Computer Applications in Biological Systems or For 294 Quantitative Resource Analysis....3
Econ 201, 202 Principles of Economics....6
Engl 313 Business Writing or 317 Technical & Engr Report Writing....3
For/Rnge/WLF 221 Natural Resources Ecology....3
For/RRT/Soc 235 Society & Natural Resources....3
For 270 Principles of Forest Ecosystem Management....2
For 320 Dendrology....3
FWR 101 Forestry Orientation....1
Math 160 Survey of Calculus....4
Phil 103 Ethics....3
Phys 111 General Physics I....3
Stat 251 Principles of Statistics....3
Two of the following....4
Fish 290 Principles of Fish Biology & Management
Rnge 251 Principles of Range Resources Management
RRT 287 Principles of Resource Recreation & Tourism Management
WLF 290 Principles of Wildlife Biology
Humanities or social science courses to satisfy regulation J-3....6
Electives to total 128 cr for the degree....—

D. PULP AND PAPER TECHNOLOGY OPTION

This innovative cooperative program allows the student to take advantage of courses at both UI and the University of Minnesota. Senior year courses are taken at the University of Minnesota through an exchange program. Students receive their degree from UI. Graduates are prepared for employment in the pulp and paper industry as process engineers and this entry position can lead to careers in pulp and paper mills in areas such as production engineering, plant supervision, and quality control. Demand for graduates is high and salaries are similar to those of engineering graduates with the pulp and paper industry projecting good growth over the next two decades.

ForP 250 Principles of Forest Products....2
ForP 277 Wood Structure & Identification....3
ForP 420 Pulp & Paper Technology....3
ForP 431 Production & Cost Control in Forest Industry or ForP 462 Analysis of Production Systems....2-3
ForP 438 Wood Chemistry....3
ForP 463 Pulp & Paper Process Lab....2
ForP 464 Pulp & Paper Process Calculations....2.7
ForP 465 Pulp & Paper Process Operations....2.7
ForP 466 Paper Engineering Lab....1.3
ForP 467 Coated Product Development....1.3
ForP 469 Surface & Colloid Chemistry of Papermaking....2
ForP 471 Pulp & Paper Process Dynamics & Control....2
ForP 472 Biological & Environmental Science of Pulp & Paper....2
ChE 123 Computations in Chemical Engineering....2
ChE 223 Material & Energy Balances....3
ChE 321 Engineering Thermodynamics & Heat Transfer....3
Chem 111-112 Principles of Chemistry I-II....8
Chem 277, 278 Organic Chemistry I & Lab....4
Chem 302 Principles of Physical Chemistry....3
Chem 372 Organic Chemistry II....3
CE 210 Engineering Statics....3
CE 320 Engineering Fluid Mechanics....3
ComG 101 Fundamentals of Public Speaking....2
CS 105 FORTRAN Programming for Engineers....2
Econ 201, 202 Principles of Economics....6
Engl 317 Technical & Engineering Report Writing....3
For 270 Principles of Forest Ecosystem Management....2
For/RRT/Soc 235 Society & Natural Resources....3
FWR 101 Forestry Orientation....1
Math 170, 175, 275 Analytic Geometry & Calculus....11
Math 310 Ordinary Differential Equations....3
Phys 211, 212 Engineering Physics I, II....6
Stat 301 Probability & Statistics....3
Electives to total 128 cr for the degree....—

Academic Minor Requirements

FOREST PRODUCTS MINOR

For students in business, engineering, forestry, or vocational education who wish to gain specific background and knowledge related to the forest products industry.

ForP 250 Principles of Forest Products....2
ForP 277 Wood Structure & Identification....3
ForP 336 Introduction to the Pulp & Paper Industry....1
ForP 337 Physical & Mechanical Properties of Wood....3
ForP 430 Forest Engineering & Harvesting....3
ForP 431 Production & Cost Control in Forest Industry or ForP 477 Forest Products Business Management....2-3
ForP 444 Lumber Manufacturing....3

Department of Forest Resources

Jo Ellen Force, Interim Dept. Head (204 FWR Bldg. 83844-1133; phone 208/885-7952; e-mail fores@uidaho.edu). Faculty: David L. Adams, George H. Belt, Steven J. Brunsfeld, Maxine E. Dakins, Lauren Fins, Jo Ellen Force, Charles R. Hatch, Gary E. Machlis, Ronald L. Mahoney, John D. Marshall, Charles W. McKetta, E. Lee Medema, James A. Moore, Penelope Morgan, Leon F. Neuenschwander, Jay O'Laughlin, Harold L. Osborne, Charles T. Stiff, Molly W. Stock, Karel J. Stoszek, Joseph J. Ulliman, David L. Wenny. Adjunct Faculty: Jerome Korol, James E. Lotan, Robert L. Mahler, Craig A. Miller, M. Henry Robison, Michael J. Scott.

The Department of Forest Resources offers programs leading to the degrees of: Bachelor of Science in Forest Resources, with options in administration, ecosystem management, production, and science; Bachelor of Science in Natural Resources Ecology and

Conservation; Master of Science (thesis and nonthesis options); and Doctor of Philosophy with a major in forestry, wildlife, and range sciences (administered at the college level for all departments). See the *Graduate Catalog* for the latter two programs.

Bachelor of Science in Forest Resources. Forestry is "managing and using for human benefit the forest lands and natural resources that occur on and in association with forest lands." These benefits may include values, services, or products such as stable human communities, aesthetics, biodiversity, recreational opportunities, clean water and air, soil protection, forage, fish and wildlife, medicinal and ornamental items, wood products, and many others.

One-third of the nation's land area and 40 percent of Idaho's land area are forested. It is imperative that the managers of these lands and of the valuable resources thereon be properly prepared for the task of providing on a continuing basis the many values, services, and goods desired and demanded by the population. With an increasingly restricted forest land base and an increasing demand for forest benefits, the practice of forestry is rapidly becoming more complex. Present-day forest management, thus, requires professionals highly trained in an interdisciplinary approach that adapts to scientific developments and sociological and economic constraints while sustaining healthy forest ecosystems.

The instructional goal of the Department of Forest Resources is to provide both undergraduate and graduate students of all nationalities with a high-quality general education and the professional knowledge of significant concepts, multiple use principles, social factors, and technical details of forest resources biology, measurements, management, and social science to effectively manage forest resources.

To attain this goal, the departmental faculty and administration will: emphasize the dynamic nature of the sciences and technologies by teaching new concepts and methods and revising the curriculum as necessary; stress understanding rather than rote learning of facts, and principles rather than routines; provide challenging programs to develop individual talents and interests; maintain class sizes in laboratory and field-oriented courses at a level commensurate with instructional effectiveness; maintain student-faculty ratios that allow for more personalized instruction and advising; expand and improve instructional facilities; develop more efficient and effective instructional techniques; expand field-oriented programs, especially at the Experimental Forest and the Forest Nursery, at Moscow and other field stations; encourage and assist students in finding seasonal professional employment and opportunities for involvement in student clubs and professional organizations; and encourage development and research programs for faculty to increase their abilities in order to pass their knowledge on to others.

The forest resources curriculum not only provides students with an interdisciplinary education, but also the opportunity to emphasize areas of individual interest, such as ecology, forest ecosystem processes, forest social sciences, computer applications in forestry, aerial-photo interpretation (remote sensing), silviculture, forest genetics and tree improvement, protection against insects, disease, and fire, tree nursery management, and other specialities by selective use of elective credits.

The four specialty options in the forest resources curriculum provide each student with an opportunity to select a course of study suited to his or her primary career goal. The administration option combines basic forest biological skills with the business management and administrative skills necessary for such positions in both public and private forestry. The forest ecosystem management option involves the study and maintenance of sustainable ecosystems for a wide variety of resource values. The production option provides a sound basis for forest management emphasizing production of renewable commodities, especially timber. The science option provides flexibility of curricular programming for the student who has specific curricular objectives not readily obtainable under the other options. The latter is particularly attractive for the student who anticipates going on to graduate study. Entry into the science option requires a 2.8 grade-point average, at least one semester in residence in the department, and petition to the Forest Science committee. The program for each student is individually designed by the student in consultation with and approval of the committee and appropriate advisers. A two-week summer session immediately following the sophomore year is required for all options.

The educational programs in administration, ecosystem management, production, and science, leading to the first professional degree in forestry of Bachelor of Science in Forest Resources, are accredited by the Society of American Foresters (SAF). SAF is the specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation as the accrediting agency for forestry in the United States.

Bachelor of Science in Natural Resources Ecology and Conservation. Global environmental problems require managers and researchers to better understand ecological conditions, to synthesize current knowledge, and to further study relationships in the environment in order to promote sustainable use of natural resources. Basic ecology will help us better understand ecosystems and applied ecology will allow us to manage those ecosystems in a sustainable manner.

The natural resources ecology and conservation program was instituted to provide students the ability to better understand and bridge the gap between basic and applied ecology with the ultimate emphasis being on the application of ecological principles to natural resources while maintaining ecosystem structure and/or function.

The degree program was developed over several years based on recommendations from faculty, students, and natural resources constituency groups. Many students want to study natural resource ecology and conservation but do not want professional careers as managers or scientists. Rather, they want a generalist degree, which is distinctly different from the management emphasis in specific natural resources management degree programs (i.e., forest resources, wildlife, fisheries, range, and resource recreation and tourism). This natural resource "liberal arts degree" could serve as preprofessional training for law school or for professional positions in federal, state, and private environmental land management and natural resource organizations, including local and regional planning groups, and consulting firms.

The program requires 128 credits and includes university core courses, the college integrated core, and ecology and natural resource analysis courses. The program culminates in a senior thesis, an opportunity for conducting independent research under the guidance of faculty members.

Further information can be obtained from the department head (208/885-7952).

Courses

See part 6 for courses in Forest Resources (For).

Curricular Requirements

FOREST RESOURCES (B.S.For.Res.)

Students pursuing a B.S. degree in forest resources (all options) must have received a passing grade with an overall grade-point average of 2.00 or better in the following indicator courses to register for upper-division courses in forest resources: Math 160 and Stat 251. Students must also have a minimum cumulative grade-point average of 2.00 in forest resource (For) courses to qualify for the B.S. degree in forest resources (all options).

Deficiency courses include Math 143 or three years of high school algebra, Math 144 or high school trigonometry, and Phys 100 or 111 or high school physics.

Required course work includes the university requirements (see regulation J-3) and:

For/Rnge/WLF 221 Natural Resources Ecology 3
For/RRT/Soc 235 Society & Natural Resources 3
For 270 Principles of Forest Ecosystem Management 2
For 274 Forest Measurement Techniques 2
For 294 Quantitative Resource Analysis 3
For/Rnge/RRT/WLF/ForP/Fish 302 Wildland Field Ecology II 2
For/Rnge/RRT/WLF/ForP/Fish 470 Interdisciplinary Natural Resource Planning 3
Three of the following courses 6
- Fish 290 Principles of Fish Biology & Management
- ForP 250 Principles of Forest Products
- Rnge 251 Principles of Range Resources Management

RRT 287 Principles of Resource Recreation & Tourism Management
WLF 290 Principles of Wildlife Biology
Biol 201 Introduction to the Life Sciences 4
Biol 203 General Botany 4
Chem 101 Introduction to Chem I or 111 Principles of Chem I 4
ComG 101 Fundamentals of Public Speaking 2
Econ 202 Principles of Economics 3
Engl 317 Technical & Engr Report Writing or 313 Business Writing 3
ForP 230 Forest Land Measurements 3
Geol 101 Physical Geology 4
Math 130 Finite Mathematics 4
Math 160 Survey of Calculus or Math 170 Analytic Geom & Calculus 4
Soil 205 General Soils 3
Stat 251 Principles of Statistics 3
Humanities and social science courses 11

And one of the following options:

A. ADMINISTRATION OPTION

For 320 Dendrology 3
For 374 Forest Mensuration 3
For 383 Economics for Natural Resource Managers 3
For 424 Silviculture 3
For 462 Watershed Management 2
For 476 Forestry Project Evaluation 3
For 477 Integrated Forest Management Models 3
Operating environment restrictive electives—choose one of the following 2-3
For 484 Forest Policy & Administration
BLaw 265 Legal Environment of Business
Bus 311 Introduction to Management
ForP 477 Forest Products Business Management
Business skills restrictive elective—choose one of the following 3
For 361 Farm & Natural Resource Appraisal
Acct 202 Introduction to Managerial Accounting
AgEc 451 Land & Natural Resource Economics
Bus 321 Marketing
Bus 332 Quantitative Methods in Business
Bus 350 Management Information Systems
Bus 412 Human Resource Management
One additional upper-division course from either of the above restrictive elective groups 2-3
Acct 201 Introduction to Financial Accounting 3
Electives to total 128 credits for the degree ....—

B. ECOSYSTEM MANAGEMENT OPTION

For 320 Dendrology 3
For 330 Forest Ecosystem Processes 3
For 383 Economics for Natural Resource Managers 3
For 424 Silviculture 3
For 426 Wildland Fire Management & Ecology 3
For 462 Watershed Management 2
For 466 Forest Disease & Insect Problems 3
Ecology restrictive elective—choose one of the following 2-4
Fish 413 Fish Ecology
Fish 415 Limnology
Rnge 459 Rangeland Ecology
WLF 314 Wildlife Ecology
Quantitative management restrictive elective—choose one of the following 3-4
For 374 Forest Mensuration
For 476 Forestry Project Evaluation
For 477 Integrated Forest Management Models
For 494 Models for Resource Decisions
Social/political environment restrictive elective—choose two of the following 4-6
For 484 Forest Policy & Administration
For 495 International Wildland Management
ComG 331 Conflict Management
PolS 464 Politics of the Environment
RRT 486 Public Involvement in Natural Resource Management
Electives to total 128 credits for the degree ....—

C. PRODUCTION OPTION

For 320 Dendrology 3
For 330 Forest Ecosystem Processes 3
For 374 Forest Mensuration 3
For 383 Economics for Natural Resource Managers 3
For 424 Silviculture 3
For 462 Watershed Management 2
For 476 Forestry Project Evaluation 3
ForP 277 Wood Structure & Identification 3
ForP 430 Forest Engineering & Harvesting 3
Forest protection restrictive elective—choose one of the following 3
For 426 Wildland Fire Management & Ecology
For 466 Forest Disease & Insect Problems
Reforestation restrictive elective—choose one of the following 2-3
For 412 Artificial Regeneration
For 413 Forest Nursery Management
For 428 Forest Gene Resource Management
Electives to total 128 credits for the degree ....—

D. SCIENCE OPTION

This option is designed for students who have specific curricular objectives not readily obtainable under the other options. Entry requires an application, sophomore standing, and one semester in residence. A 3.0 grade-point average must be maintained on an academic year basis for all subsequent course work completed after acceptance into the option.

For 497 Senior Thesis or 498 Renewable Natural Resources Internship 2
Quantitative electives 6
Professional electives 12
Natural or social science electives (other than UI core) 12
Electives to total 128 credits for the degree ....—

NATURAL RESOURCES ECOLOGY AND CONSERVATION (B.S.Nat.Res.Ecol.)

Required course work includes the university requirements (see regulation J-3) and:

For/Rnge/WLF 221 Natural Resources Ecology 3
For/RRT/Soc 235 Society & Natural Resources 3
For 270 Principles of Forest Ecosystem Management 2
For 294 Quantitative Resource Analysis 3
For/Rnge/RRT/WLF/ForP/Fish 302 Wildland Field Ecology II 2
For 375 Aerial Photo Interpretation 3
For 383 Economics for Natural Resource Managers 3
For/Rnge/RRT/WLF/ForP/Fish 470 Interdisciplinary Natural Resource Planning 3
For 497 Senior Thesis 4
Three of the following courses 6
Fish 290 Principles of Fish Biology & Management
ForP 250 Principles of Forest Products
Rnge 251 Principles of Range Resources Management
RRT 287 Principles of Resource Recreation & Tourism Management
WLF 290 Principles of Wildlife Biology
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Bot 241 Systematic Botany or For 320 Dendrology 3
Chem 101 Intro to Chemistry I or Chem 111 Principles of Chemistry I 4
ComG 101 Fundamentals of Public Speaking 2
Econ 202 Principles of Economics 3
Engl 207 Persuasive Writing or 208 Personal & Exploratory Writing or 209 Inquiry-Based Writing or 317 Technical & Engr Report Writing 3
Math 160 Survey of Calculus or Math 170 Analytic Geom & Calculus 4
Soil 205 General Soils 3
Stat 251 Principles of Statistics 3
Humanities and social science courses 11
Ecology restrictive electives chosen from the following 15
Biol 442 Biological Evolution (3 cr)
Bot 432 Plant Ecology (3 cr)
Ent 439, 445, 446 Insect-Plant Interactions (3 cr)
Fish 413 Fish Ecology (2 cr)
Fish 415 Limnology (4 cr)
Fish/Rnge 430 Riparian Ecology & Management (2 cr)
For 330 Forest Ecosystem Processes (3 cr)
For 423 Forest Community Ecology (1 cr)
For 426 Wildland Fire Management & Ecology (3 cr)
For 466 Forest Disease & Insect Problems (3 cr)
MMBB 425 Microbial Ecology (4 cr)
Rnge 459 Rangeland Ecology (3 cr)
WLF 314 Wildlife Ecology (3 cr)
Two social/political restrictive courses chosen from the following 5-6
AgEc 356 Agricultural Programs & Policies (3 cr)
ComG 331 Conflict Management (3 cr)
Econ 385 Environmental Economics (3 cr)
For 484 Forest Policy & Administration (2 cr)
Geog 420 Land & Resource Regulation (3 cr)
Geog 444 Environmental Assessment (3 cr)
Hist 424 American Environmental History (3 cr)
Phil 407 Environmental Ethics (3 cr)
PolS 464 Politics of the Environment (3 cr)
Two resource management courses chosen from the following 4-8
Fish 418 Fisheries Management (4 cr)
For 424 Silviculture (3 cr)
For 462 Watershed Management (2 cr)
For 472 Remote Sensing of Environment (3 cr)
Geog 385 GIS Primer (3 cr)
Rnge 456 Integrated Rangeland Resource Mgt & Planning (4 cr)
RRT 385 Resource Recreation & Tourism Management (3 cr)
RRT 486 Public Involvement in Natural Resource Mgt (3 cr)
RRT 490 Wilderness Management (3 cr)
WLF 441 Wildlife Behavioral Ecology & Management (2 cr)
WLF 442 Wildlife Management (4 cr)
WLF 445 Nongame Management (2 cr)
Electives to total 128 credits for the degree ....—

Forestry, Wildlife and Range Sciences (General)

Charles R. Hatch, Dean (202C FWR Bldg. 83844-1138; phone 208/885-6441); Alton G. Campbell, Associate Dean.

Courses

See part 6 for courses in Forestry, Wildlife and Range Sciences (FWR).

Academic Minor Requirements

FORESTRY, WILDLIFE AND RANGE SCIENCES MINOR

Note: Not open to students pursuing a major in the College of Forestry, Wildlife and Range Sciences.

For 205, 206 Wildland Resource Conservation & Lab 4
At least two of the following 4-6
- Fish 290 Principles of Fish Biology & Management
- ForP 250 Principles of Forest Products
- For 270 Principles of Forest Ecosystem Management
- Rnge 251 Principles of Range Resources Management
- RRT 287 Principles of Resource Recreation & Tourism Management
- WLF 290 Principles of Wildlife Biology

At least two of the following 5-6
- For 383 Economics for Natural Resource Managers
- For 470 Interdisciplinary Natural Resource Planning
- For/RRT 235 Society & Natural Resources
- RRT 386 Resource Recreation & Tourism Planning

At least one of the following 2-6
- Fish 413 Fish Ecology
- For 208 Community & Urban Forestry
- For 221 Natural Resources Ecology
- ForP 444 Lumber Manufacturing
- Rnge 453 Rangeland Vegetation Inventory & Analysis
- RRT 385 Resource Recreation & Tourism Management
- RRT 387 Environmental Interpretative Methods
- WLF 445 Nongame Management

The minimum number of credits for the minor is 18.

Department of Geography

Harley E. Johansen, Dept. Head (203 McClure Bldg. 83844-3021; phone 208/885-6216; e-mail geog@uidaho.edu; http://www.mines.uidaho.edu/geography). Faculty: Kang-Tsung Chang, Piotr Jankowski, Harley E. Johansen, Allan Jokisaari, Scott E. Morris, Gundars Rudzitis, Sam M. W. Scripter, Curtis N. Thomson.

Geography explores the distribution and interaction of natural and human systems on global, regional, and local scales. Environmental issues involving natural resources, population, political, and economic systems are the subject of much geographic inquiry, along with practical issues in planning and resource management. Selecting locations, or designing optimal development or delivery systems are geographic problems common to business and government around the world. Geographic training in spatial analysis, cartography, geographic information systems (GIS), and remote sensing, along with knowledge of patterns and processes inherent in natural and human social systems provides the background necessary to work in an increasing field of research and planning opportunities in applied geography and cartography.

To prepare students for many rewarding and important career opportunities, the Department of Geography, in the College of Mines and Earth Resources, offers the following undergraduate degree programs: B.S. Geography with options in physical environment and earth resources, mineral property and land management, applied economic geography, and generalist; and B.S. Cartography with options in cartography and GIS. The department also offers the major in geography (leading to the B.A. or B.S. degree) through the College of Letters and Science. Students benefit from close contact with their instructors and hands-on experience in their course work and through internships with industries and agencies involved in geographic and cartographic activities.

Graduate Programs. M.S. and Ph.D. degrees in geography are offered. Emphasis is on natural resources, regional development, cartography, spatial decision support systems, and physical topics, using locational analysis and other analytical techniques. Additional information is available from the department on these programs.

Career Opportunities. Geographers work in a variety of fields where knowledge of both natural and human characteristics of places is required. This includes planning and development careers in both public and private agencies as well as careers in environmental impact and assessment. Geographers also work in industry using their skills in research, locational analysis, site selection, mapping, and management of geographical information, with the aid of computers. Industrial jobs for geographers range from research, planning, and data management in primary resources to deciding where to locate a new supermarket or shopping mall. Many jobs for geographers involve computer mapping or GIS. Cartographers from our program are employed in a variety of positions working with map design, graphics, and production cartography. We have recently designed a program leading to GIS analyst positions, available under the B.S. Cartography. The department arranges student internships with industries and agencies to provide on-the-job training and maintains a close relationship with the UI Career Services Center to aid students in their search for employment.

Faculty members in the department will answer questions about specific programs and courses. Prospective majors in geography or cartography should contact the department head (telephone 208/885-6216).

Courses

See part 6 for courses in Geography (Geog).

Curricular Requirements

GEOGRAPHY (B.S.Geog.)

This program is offered through the College of Mines and Earth Resources. Required course work includes the university requirements (see regulation J-3) and:

Geog 100 Physical Geography 4
Geog 180 Spatial Graphics 3
Geog 200 World Regional Geography 3
Geog 240 Economic Geography 3
Geog 380 Cartography & Graphic Communication 3
Geog 385 GIS Primer 3
Stat 251 Principles of Statistics 3
Stat 401 Statistical Analysis 3

And completion of one of the following options (a list of recommended electives may be obtained from the departmental office; students interested in pursuing graduate studies are advised to emphasize analytical techniques in their choice of electives):

A. PHYSICAL ENVIRONMENT AND EARTH RESOURCES OPTION

This option emphasizes the interaction between natural environmental systems and human activities. Students gain a knowledge of major issues in the utilization and management of earth resources as they relate to the natural environment. They also acquire the skills necessary to solve practical problems related to resource development.

Geog 301 Meteorology or 401 Climatology 3
Geog 315 Geomorphology or 325 Quantitative Geomorphology 3
Geog 483 Remote Sensing/GIS Integration 3
Geog 491 Field Techniques 3
Engl 317 Technical & Engineering Report Writing 3
Courses chosen from the following 21
- Geog 427 Decision-Making in Resource Management
- Geog 444 Environmental Assessment
- Geog 470 Computer Mapping
- Geog 475 Geographic Information Systems
- Geog 484 Remote Sensing in the Geosciences
- Chem 101 Intro to Chem I or 111 Principles of Chem I
- CE 211 Engr Measurements or 218 Elementary Surveying
- CS 112 Intro to Problem Solving & Programming
- For 375 Aerial Photo Interpretation
- Math 143 Pre-calculus Algebra & Analytic Geometry
- Math 160 Survey of Calculus
- Phys 111 General Physics

Courses chosen from the following 9
- Geog 301 Meteorology or 401 Climatology
- Geog 316 Processes in Glacial/Periglacial Environments
- Geog 364 Idaho & the Pacific Northwest
- AgE 351 Hydrology
- For 462 Watershed Management
- Geol 101 Physical Geology
- Geol 360 Geologic Hazards
- Geol 361 Geology & the Environment
- Geol 409 Ground Water
- Soil 205 General Soils

Electives to total 128 cr for the degree ..... —

B. APPLIED ECONOMIC GEOGRAPHY OPTION

This option is designed to prepare students for employment opportunities in business and industry and also in the field of planning at the regional or community scale. It emphasizes the locational aspects of economic activity and economic decision making. Students will gain an understanding of geographical patterns of markets, transactions and trade, transportation, production and consumption, industrial processing, and other aspects of the spatial economy. With this option, most students can go on to complete master's degrees in business administration or geography within one year or move directly into a growing area of employment for the business-oriented geographer.

Geog 165 Human Geography 3
Geog 330 Urban Geography 3
Geog 340 Business Location Decisions 3
Geog 346 Transportation 3
Geog 427 Decision-Making in Resource Management 3
Bus 321 Marketing 3
Econ 201, 202 Principles of Economics 6
Econ 430 Regional/Urban Economics 3
Engl 313 Business Writing or 317 Tech & Engr Report Writing 3
Courses chosen from the following 9
- Geog 470 Computer Mapping
- Geog 478 Interactive Cartographics
- Geog 497 Practicum (internship with a company or agency)
- Bus 421 Marketing Research & Analysis
- Econ 352 Intermediate Microeconomic Analysis
- LArc 490 Computer-Aided Regional Landscape Planning
- Math 170 Analytic Geometry & Calculus I
- Math 326 Linear Programming

Courses chosen from the following 9
- Geog 360 Population Dynamics & Distribution
- Geog 365 Political Geography
- AgEc 332 Economics of Agricultural Development
- AgEc 451 Land & Natural Resource Economics
- Bus 325 Retail Distribution Management
- Econ 385 Environmental Economics
- Econ 415 Market Structure & Governmental Policy
- Econ 446 International Economics

Electives to total 128 cr for the degree ..... —

C. MINERAL PROPERTY AND LAND MANAGEMENT OPTION

This option is designed to provide a background in land-use decision making and land management. Emphasis is on mineral properties, but the techniques also apply to other resources. Courses include locational, socioeconomic, environmental, and legal aspects of land management to prepare the student for either employment or advanced study in this growing profession.

Geog 315 Geomorphology or 301 Meteorology or 401 Climatology 3
Geog 330 Urban Geography or 346 Transportation or 360 Population Dynamics 3
Geog 420 Land & Resource Regulation or 425 Mineral Land Mgt 3
Geog 470 Computer Mapping or 478 Interactive Cartographics 3
Geog 492 Mineral Industry Case Studies 3
AgEc 451 Land & Natural Resource Economics or Econ 430 Regional/ Urban Economics or Econ 385 Environmental Economics 3
Bus 362 Real Property Appraisal 3
CE 218 Elementary Surveying 2
CS 112 Introduction to Problem Solving & Programming 3
Econ 201, 202 Principles of Economics 6
Engl 313 Business Writing or 317 Technical & Engr Report Writing 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
PolS 451 Public Administration or 452 Administrative Law 3
Approved geography electives 12
Electives to total 128 cr for the degree ..... —

D. GENERAL OPTION

For students interested in geography but not in one of the specialty options, this option allows them to design their own curricula with the approval of a geography faculty adviser.

Math 143 Pre-calculus Algebra & Analytic Geometry 3
Approved electives in geography (not incl Geog 480, 485) 27
Approved electives to total 128 cr for the degree ..... —

GEOGRAPHY (B.A. or B.S.)

This program is offered through the College of Letters and Science. Required course work includes the university requirements (see regulation J-3), the general College of L & S requirements for either the B.A. or B.S. degree, and:

Geog 100 Physical Geography 4
Geog 165 Human Geography 3
Geog 200 World Regional Geography 3
Geog 240 Economic Geography 3
Geog 380 Cartography & Graphic Communication 3
Geog 490 Trends in Geography 3
Geol 101 Physical Geology 4
Geography electives (upper-division) 18
Related fields approved by the Dept of Geography 20

CARTOGRAPHY (B.S.Cart.)

This program is offered through the College of Mines and Earth Resources. Required course work includes the university requirements (see regulation J-3) and:

Geog 100 Physical Geography 4
Geog 180 Spatial Graphics 3
Geog 200 World Regional Geography 3
Geog 380 Cartography & Graphic Communication 3
Geog 385 GIS Primer 3
Geog 470 Computer Mapping 3
Geog 475 Geographic Information Systems 3
Geog 478 Interactive Cartographics 3
Geog 483 Remote Sensing/GIS Integration 3
Geog 485 Cartographic Production Techniques 4
Geog 497 Practicum 3-6
CE 211 Engineering Measurements or 218 Elementary Surveying 2-4
CS 112 Intro to Problem Solving & Programming 3
Engl 313 Business Writing or 317 Technical & Engr Report Writing 3
For 375 Aerial Photo Interpretation 3
For 472 Remote Sensing of Environment 3
Math 143 Pre-calculus Algebra & Analytic Geometry 3
Math 160 Survey of Calculus or 170 Analytic Geometry & Calculus I 4
ME 101 Engineering Graphics 2
Stat 251 Principles of Statistics 3
Stat 401 Statistical Analysis 3

And one of the following options:

A. CARTOGRAPHY OPTION

This option emphasizes graphic design and communication and both computerized and conventional techniques of production cartography. It provides extensive applied professional cartographic training and exposure to theoretical-research oriented aspects of the field. Students who complete this option should be capable of eventually occupying supervisory positions in graphic sections or organizations producing maps and allied graphic products. To provide these students with a realistic education, the department has developed a modern, fully equipped graphic arts laboratory (Cart-O-Graphics) that has the capacity to execute all necessary map-making functions from original drafting or scribing to press-ready printing plates. The laboratory provides talented and interested students with the opportunity to solve real cartographic problems, gaining professional experience, academic credit, and income.

Geog 315 Geomorphology 3
Adviser-approved electives to total 128 cr for the degree ..... —

B. GIS OPTION

This option focuses on teaching theoretical fundamentals, techniques, and practical applications of modern geoprocessing using spatial analysis and information systems technology. It is intended to educate specialists in GIS and Spatial Analysis who have a solid grasp of cartographic principles, computational technology, and the knowledge of substantive issues involved in geoprocessing applications.

CS 113 Program Design & Algorithms 3
CS 213 Data Structures 3
CS 241 Computer Organization 3
CS 360 Files & Databases 3
Math 176 Discrete Mathematics 3
Adviser-approved electives to total 128 cr for the degree ..... —

Department of Geology and Geological Engineering

John S. Oldow, Dept. Head (322 Mines Bldg. 83844-3022; phone 208/885-6192). Faculty: John H. Bush, Jr., Valerie E. Chamberlain, Dennis J. Geist, Mickey E. Gunter, James H. Hardcastle, Terry R. Howard, Peter E. Isaacson, Maynard M. Miller, Stanley M. Miller, John S. Oldow, James Osiensky, Beth A. Palmer, Dale R. Ralston, Peter L. Siems, Kenneth F. Sprenke, Roy E. Williams, Scott A. Wood. Adjunct Faculty: Earl H. Bennett II, Bill Bonnichsen, Roy M. Breckenridge, Charles R. Knowles, Kurt L. Othberg, Roger C. Stewart.

Geology is the study of the origin and evolution of the earth, utilizing the principles of chemistry, physics, and biology and the unifying concepts of geologic time and uniformitarianism. The applied aspects of geology include the search for ores, industrial minerals, petroleum, coal, water, and other useful geologic materials. Geological engineering is the application of engineering principles to geologic problems. Hydrology is concerned with water: surface water, underground water, and water in the atmosphere. Generally involved are geologic aspects of mined land reclamation, waste disposal, and pollution abatement. Geophysics is the scientific study of the earth using the methods of physics.

Bachelor's degrees are offered in geology and in geological engineering. Both programs emphasize field and applied aspects along with theoretical considerations. Both programs require effective use of English in written and oral reports. It is the goal of the department that our graduates not only be ready for immediate employment, but also that they have the broad education that will help them to grow professionally and advance through positions of greater responsibility during their careers.

The **geology** program provides the student with the necessary background courses in basic sciences and mathematics plus a spectrum of courses in the subdisciplines of geology, including mineralogy, petrology, paleontology, stratigraphy, structural geology, geomorphology, geochemistry, and geophysics. A well-rounded education is obtained through additional courses in the humanities

and social sciences. Specialized elective courses can be chosen to prepare for various careers such as exploration for minerals or for petroleum; or in dealing with geological problems related to engineering; or in the search for, and management of, ground water; or for preparation for advanced studies in graduate school.

Geological engineering is the professional discipline that relies on the use of geologic conditions and implications for: (1) the design and construction of civil and mining projects, (2) the evaluation and mitigation of natural and human-caused geologic hazards, and (3) the exploration and development of mineral and energy resources. The B.S. Geological Engineering Program is intended to provide its students with a thorough educational experience in applied geology, in the engineering sciences, and in the integration of geologic concepts into engineering evaluation and design. Furthermore, the program objectives are to have its graduates be current in the latest technology, have a solid understanding of the ethical and professional responsibilities of the engineering profession, have an appreciation of societal concerns and a commitment to public safety, and be dedicated to life-long professional development. To assess the ability of the department to meet these objectives, job placement information and the results of alumni surveys are recorded in university and departmental files and are updated annually.

A minor in geology is offered for students in allied fields who have an interest in geology. The minor curriculum can be tailored to meet the needs of individual students.

Laboratories are maintained for work in all of the basic courses, with large study collections of fossils, rocks, minerals, crystal models, ore suites, thin sections, polished sections, and topographic and geologic maps.

Equipment used in advanced courses includes rock sawing and polishing facilities, binocular microscopes, reflection and polarizing microscopes, photomicrographic apparatus, x-ray diffraction and fluorescence equipment, and an atomic absorption spectrophotometer. The electron microprobe of the Idaho Geological Survey is available to advanced students. Also available are several computers, resistivity survey equipment, seismographs, magnetometer, soil drilling and sampling kits, water-level recorders, and various types of soil and rock strength-testing equipment.

Research laboratories are equipped for work in applied geochemistry, geophysics, petrology, economic geology, paleontology, photogeologic analysis, remote sensing, engineering geology, and geomechanics. Facilities for research in hydrology are also available in other divisions of the university.

Through the Glaciological and Arctic Sciences Institute, cooperative facilities for field training and research in British Columbia and Alaska are available in the disciplines of mining and exploration geology, geophysics, terrestrial photogrammetry, geomorphology, and glaciology.

The department offers Master of Science degrees in geology, geophysics, hydrology, and geological engineering. Theses are required in the first two programs (i.e., geology and geophysics), whereas a thesis/nonthesis option is available in the latter two programs (i.e., geological engineering and hydrology). A nonthesis program is also available in the Master of Arts in Teaching (major in earth science). The Doctor of Philosophy is offered in geology.

The undergraduate preparation expected of the entering candidates depends upon the degree sought. Candidates who do not have adequate preparation are admitted with the requirement that deficiencies be made up. Some of our most promising graduate students have come to us with bachelor's degrees in the humanities or social sciences. Deficiencies for master's candidates are determined by the major professor. The master's degrees in hydrology and geophysics are interdisciplinary, and candidates are accepted from various fields of science and engineering; mathematics through Math 310 is required, and other deficiencies will be determined by the major professor. No special requirements exist as to deficiencies of candidates for the Master of Arts in Teaching. Candidates for the Doctor of Philosophy in geology are expected to have earned a master's degree in geology.

BSU-ISU Cooperative Programs. The department participates in cooperative programs with the Earth Science Departments at Boise State University and at Idaho State University. Students interested in pursuing bachelor's degrees in geology or geophysics at those institutions may take transferable preparatory courses at UI. The master's degree in geophysics at UI is fully cooperative and students may take courses or perform research at any of the three institutions.

Courses

See part 6 for courses in Geological Engineering (GeoE), Geology (Geol), Geophysics (Geop), and Hydrology (Hydr).

Curricular Requirements

GEOLOGY (B.S.Geol.)

Required course work includes the university requirements (see regulation J-3) and:

Geol 102 Historical Geology 4
Geol 111 Physical Geology for Science Majors 4
Geol 212 Principles of Paleontology 4
Geol 249 Mineralogy & Optical Mineralogy 5
Geol 301 Field Geology & Report Writing 6
Geol 335 Geomorphology 3
Geol 345 Structural Geology 3
Geol 386 Principles of Geochemistry 3
Geol 423 Stratigraphy & Sedimentary Petrography 3
Geol 425 Sedimentology 3
Geol 466 Igneous & Metamorphic Rocks 4
Chem 111, 113 Principles of Chem I & Inorganic Chem or 112 Prin of Chem II 8-9
Engl 313 Business Writing (cannot be used to fulfill core requirements for communication) or 317 Technical & Engineering Report Writing 3
Geop 420 Exploration Geophysics or Geop 422 Prin of General Geophysics 3
Math 160 Survey of Calculus 4
One course chosen from Math 176, 170, 175, 215, 326, 330, or Stat 251 3-4
Phys 111-112 General Physics I-II (or 211, 212) 8

And the completion of one course in computer programming, one of the areas of emphasis A, B, C, or D below, and electives approved by adviser to total 128 credits for the degree.

A. GENERAL GEOLOGY EMPHASIS

Twenty-five additional credits with adviser's approval beyond the required courses are to be selected from engineering, biology, chemistry, math, physics, or upper-division College of Mines and Earth Resources courses.

B. ACADEMIC MINOR EMPHASIS

Complete the requirements of any approved academic minor, plus electives approved by adviser to a total of 27 credits. A list of approved minors may be obtained from the departmental office.

C. ENVIRONMENTAL GEOLOGY EMPHASIS

Geol 360 Geologic Hazards or GeoE 435 Geol Engr Principles 3
Geol 361 Geology & the Environment 3
Geol 409 Ground Water 3
Geol 410 Techniques of Ground Water Study 3
Adviser-approved elective 3

D. MINERAL EXPLORATION GEOLOGY EMPHASIS

Geol 476 Design of Exploration Programs 3
Geol 485 Geochemical Exploration 3
GeoE 475 Mineral Deposits 4
Min 350 Mineral Economics 3

GEOLOGICAL ENGINEERING (B.S.Geol.E.)

As part of a cooperative program with Oregon State University, Oregon resident students may enroll in this program and will not be charged out-of-state tuition by UI.

Required course work includes the university requirements (see regulation J-3) and:

GeoE 301 Field Geology & Report Writing 6
GeoE 407 Rock Mechanics 3
GeoE 409 Ground Water 3
GeoE 428 Geostatistics 3
GeoE 430 Site Testing & Evaluation or GeoE 485 Geochemical Exploration 3
GeoE 435 Geological Engineering Principles 3
GeoE 436 Geological Engineering Design or GeoE 476 Design of Exploration Programs 3
GeoE 475 Mineral Deposits or CE 360 Engineering Properties of Soils 3-4
Geol 111 Physical Geology for Science Majors 4
Geol 260 Survey of Minerals 2
Geol 261 Survey of Rocks 2
Geol 335 Geomorphology 3
Geol 345 Structural Geology 3
Geol 425 Sedimentology 3
ChE 321 Engineering Thermodynamics & Heat Transfer 3
Chem 111,112 Principles of Chemistry I-II 8

CE 210 Engineering Statics 3
CE 211 Engineering Measurements 3
CE 320 Engineering Fluid Mechanics 3
CS 105 FORTRAN Programming for Engineers 2
Engl 317 Technical & Engineering Report Writing 3
Geop 421 Engineering Geophysics or Geop 420 Exploration Geophysics 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
ME 220 Engineering Dynamics 3
ME 340 Engineering Mechanics of Materials 3
Min 352 Project Investment Analysis & Management 3
Phys 211, 212 Engineering Physics I-II 8
Stat 301 Probability & Statistics 3
Humanities and social sciences electives—must satisfy regulation J-3 and include at least (1) one upper-division course that is the second course completed in that subject, or (2) a course that has another humanities-social science course as a prerequisite 16
Technical electives from a list approved by dept 9

The minimum number of credits for the degree is 134.

Academic Minor Requirements

GEOLOGY MINOR

Geol 101 Physical Geology 4
Geol 102 Historical Geology 4
Electives in geology, geophysics, or geological engineering 13

Division of Health, Physical Education, Recreation and Dance

Calvin W. Lathen, Div. Director and Coordinator of Recreation (101 Phys. Ed. Bldg. 83844-2401; phone 208/885-7921). Faculty: Brian Bennington, Damon D. Burton, Jess D. Caudillo, Dennis Dolny (Coordinator, Sport Science), Lisa Gilbert, Grace Goc Karp, Bonnie J. Hultstrand (Coordinator, Physical Education), Glenn Kastrinos, Michael L. Kinziger, Calvin W. Lathen, Randy M. Page (Coordinator, Health and Safety), Sharon K. Stoll, Charles J. Thompson (Coordinator, Basic Instruction), Diane B. Walker (Director, Center for Dance), Emily Wallace, Marianne Woods.

The Division of Health, Physical Education, Recreation and Dance is one of three divisions and two departments in the College of Education. The division offers a Ph.D. in education with tracks in sport pedagogy and in physical education; master's degrees in recreation and physical education; baccalaureate degrees in dance, physical education, health, recreation, and sport science; several minors and options; basic instruction in numerous activities, and leisure activities through Campus Recreation.

The activity portion of the program is supported by outstanding facilities, which include three gymnasia, two dance studios, two pools, eight indoor tennis courts, nine racquetball courts, indoor and outdoor tracks, weight rooms, fitness trail, climbing wall and rope course, and expansive field and play areas.

The baccalaureate degree in dance is designed to give the student professional training in teaching, performing, choreography, and concert production. The Festival Dance and Performing Arts Association maintains a residency program with the division.

The baccalaureate degree in physical education leads to elementary and secondary teaching certification and provides a foundation for athletic coaching. Physical education is concerned primarily with the art and science of human movement, principles and concepts relating to skill acquisition and analysis, the effects of exercise on the body, and concepts relating to total fitness.

The baccalaureate degree in recreation prepares the student for recreation leadership roles in municipalities, agencies, institutions, and private industry. Students enrolled in this program complete a summer recreation internship. Recreation students specialize by completing a university-approved academic minor.

The baccalaureate degree in school and community health education leads to teaching certification in grades 6-12 and provides a foundation for health education teaching in schools. Health education is concerned with providing individuals with learning experiences designed to predispose, enable, and reinforce voluntary adaptations of behavior conducive to well-being. In addition to school health education, this degree emphasizes community health and may lead to employment possibilities within hospitals, health departments, governmental agencies, volunteer agencies, and business/industry.

The baccalaureate degree in sport science prepares students to work in the general areas of sport, and corporate, clinical, or private wellness programming. It is for students interested in professional opportunities that do not require teacher certification. An internship at a corporate, clinical, or sport facility is included.

Academic and teaching minors offered by the division include: health education, dance, recreation, therapeutic recreation, outdoor recreation leadership, tourism and leisure enterprises, elementary physical education, secondary physical education, fitness/wellness, coaching, and athletic training.

Master's degree tracks include sport or dance pedagogy, sport science, and sport psychology in physical education and sport and recreation management in recreation. A 2.8 undergraduate grade-point average is required for admission. Doctoral admission requirements can be obtained from the College of Education.

Courses

See part 6 for courses in Dance (Dan), Health and Safety (H&S), Physical Education (PE), and Recreation (Rec).

Curricular Requirements

DANCE (B.Dan.)

The curriculum leading to the degree of Bachelor of Dance is designed to give the student professional training in teaching, performing, choreography, and concert production.

Required course work includes the university requirements (see regulation J-3) and:

Dan 216/416 Technique (must include a minimum of 6 semesters each of ballet, modern, and jazz) 24-32
Dan 100 Introduction to Dance 3
Dan 112 Recreational Dance Forms 2
Dan 210 Dance Theatre 4
Dan 220 Children's Dance 2
Dan 320 Labanotation 3
Dan 321 Dance Pedagogy 3
Dan 325 Dance Production 3
Dan 383 Dance Composition 6
Dan 410 Pre-professional Dance Theatre 4
Dan 420 Dance Accompaniment 3
Dan 421 Dance History 3
Art 100 Visual Art 3
MusH 101 Survey of Music 3
PE 260 Motor Development & Control 3
PE 300 Human Kinesiology 2
PE 418 Physiology of Exercise 3
Psyc 305 or ED 312 Developmental or Educational Psychology 2-3
TheA 103 Theatre Technology I 2
TheA 105-106 Basics of Performance 6
TheA 205 Lighting Design I 3
Two of the following courses 6
  Engl 257-258 Literature of Western Civilization
  Engl 321 The Novel for Nonmajors
  Engl 325 Contemporary Literature for Nonmajors
Two of the following courses 2
  MusA 114 Individual Instruction (voice or piano)
  MusA 145-146 Piano Class
  MusA 147-148 Voice Class
  MusA 149-150 Voice for Actors

Dance majors planning to qualify for the Standard Secondary-School Teaching Certificate must include college requirements and the following courses among the electives to complete the 128 credits for the degree and should elect ED 312, Educational Psychology, above:

Dan 433 Practicum: Dance Teaching 14
ED 201 Introduction to Teaching 2
ED 313 Educational Measurement 1
ED 314 Strategies for Teaching 2-3
ED 328 Introduction to Educational Techology 2
ED 445 Proseminar in Teaching 3
ED 468 Historical & Philosophical Foundations of Education 3
EDTE 463 Literacy Methods for Content Learning 3

PHYSICAL EDUCATION (B.S.Ed.)

The major in physical education leads to certification in grades 1-12. This requires 14 credits of student teaching. Current first aid and CPR certification or equivalent are required for graduation.

Required course work includes the university requirements (see regulation J-3), general College of Education requirements, and:

PE 108 Swimming or Swimming Certification 1
PE 160 Foundations of Physical Education & Education 3
PE 201 Fitness Activities & Concepts 2
PE 202 Skill & Analysis: Tumbling & Gymnastics 2
PE 260 Motor Development & Control 3
PE 300 Human Kinesiology 2
PE 305 Applied Sports Psych or PE 310 Cultural & Phil Aspects of Sport 2-3
PE 320 Methods & Materials in Physical Education 3
PE 321 Physical Education Teaching Lab 1
PE 340 Elementary School Physical Education 3
PE 380, 381 Measurement & Evaluation I & II 3
PE 412 Proseminar in Physical Education 1
PE 418 Physiology of Exercise 3
PE 424 Physical Education for Special Populations 3
PE 440 Physical Education & Sport Management 3
Dan 105 Dance (incl social swing, modern, tap, ballet, jazz, or square) 1
Dan 112 Recreational Dance Forms 2
H&S 150 Wellness Lifestyles 3
Zool 120 Human Anatomy 4
Zool 121 Human Physiology 4
Skill & Analysis courses: select 6 courses from PE 112, 113, 114, 115, 116, 117, 118, 119, 122 6
Survey courses: select 2 courses from PE 123, 124, 243 2-3

And the satisfactory completion of an approved teaching minor.

NOTE: Students who complete a teaching major in a second field may have the above list of requirements reduced to 30 credits with the approval of the division.

A single-subject 60-credit major in physical education includes the above courses and an approved physical education concentration. See the division office for information on concentrations.

RECREATION (B.S.Rec.)

This curriculum is primarily for students interested in careers in leadership, supervision, or management of recreation agencies. Students graduating from this program are immediately eligible to sit for the national-level examination to become a Certified Leisure Professional and thereby acquire this valuable credential for professional advancement.

A minimum cumulative university GPA of 2.25 is required of all recreation majors who seek to take upper-division courses (numbered 300 or above) offered by the Recreation Program Unit. Recreation majors must also achieve a minimum cumulative university GPA of 2.25 to graduate with a B.S.Rec. degree.

Required course work includes the recreation major, the university requirements (see regulation J-3), division requirements (contact the division office), and completion of an academic minor or 20 credits in an approved cognate area of study. Note: Students should contact adviser before registering for courses to satisfy regulation J-3.

BuEd 415 Microcomputer Applications or ASM 240 Computer Applications in Biological Systems or other approved computer course 3
BLaw 265 Legal Environment of Business 3
Engl 207 Persuasive Writing or 208 Personal & Exploratory Writing or 209 Inquiry-Based Writing or 313 Business Writing or 317 Technical & Engineering Report Writing 3
H&S 288 First Aid: Emergency Response or current emergency responder certification 2
Psyc 305 Developmental Psychology 3
Four courses (only two may be B.I.P. courses—PE 105, 106, 107) selected from PE 105, 106, 107, 112, 113, 114, 115, 116, 117, 118, 119, 201, or 202 4-5
Aquatic course (Lifeguarding/WSI recommended) 1
Electives to total 128 cr for the degree ....—

Recreation Core:

Rec 102 Introduction to Recreation Professions 1
Rec 110 Recreation for Special Populations 3
Rec 125 Outdoor Leisure Pursuits 2
Rec 260 Leisure & Society 3
Rec 275 Computer Applications in Leisure Services 2
Rec 280 Recreation Practicum 1
Rec 329 Leadership in Recreation 3
Rec 349 Municipal Park Admin & Maintenance or Rec 340 Leisure & Tourism Enterprises or Rec 330 Therapeutic Recreation Programming for People with Disabilities 2-3
Rec 365 Leisure & the Aging Process 3
Rec 410 Trends & Issues in Leisure Services 3
Rec 425 Leisure Education 2
Rec 445 Professional Seminar 1
Rec 460 History & Philosophy of Recreation & Leisure 3
Rec 486-487 Recreation Program Planning & Marketing I-II 4
Rec 493 Management of Leisure Services 3
Rec 495 Practicum in Tutoring 1
Rec 498 Internship in Recreation 9
RRT 310 Leisure Services Research & Evaluation 3
Additional courses selected from the following 5
- Rec 204 ST: Recreation Issues
- Rec 254 Camp Leadership
- Rec 340 Leisure & Tourism Enterprises (if not chosen above)
- Rec 349 Municipal Park Admin & Maintenance (if not chosen above)
- Rec 400 Seminar
- Rec 403 Workshop
- Rec 404 Special Topics
- Rec 420 Experiential Education

SCHOOL AND COMMUNITY HEALTH EDUCATION (B.S.Ed.)

The major in school and community health education leads to certification in grades 6-12. Certification in the American Red Cross Emergency Response (or equivalent) is required on graduation.

Required course work includes the university requirements (see regulation J-3—contact the division for specific courses required in the core), general College of Education requirements that include 14 credits of student teaching (see division for details), an approved teaching minor, and:

H&S 150 Wellness Lifestyles 3
H&S 289 Drugs in Society 2
H&S 316 School & Community Health Services 2
H&S 323 Health Education Methods & Administration 3
H&S 350 Stress Management & Mental Health 2
H&S 355 Accident Control, Prevention, & Human Ecology 2
H&S 436 Health & Wellness Promotion 3
H&S 450 Contemporary Issues in Health 2
FCS 205 Concepts in Human Nutrition 3
FCS 240 Intimate Relationships 3
PE 418 Physiology of Exercise 3
Psyc 305 Developmental Psychology 3
Psyc 330 Human Sexuality 3
Zool 120 Human Anatomy 4
Zool 121 Human Physiology 4
Two of the following courses 5-6
- ComG 331 Conflict Management
- FCS 305 Nutrition Related to Fitness & Sport
- FCS 334 Middle Childhood-Adolescence
- FCS 440 Contemporary Family Relationships
- FCS 448 Consumer Education
- PE 493 Fitness Assessment & Prescription
- Soc 320 Sociology of Substance Abuse

Electives to total 128 cr for the degree ....—

SPORT SCIENCE (B.S.P.E.)

This curriculum is for students interested in professional opportunities that do not require teaching certification. Graduates will be prepared to work in the general areas of sport, corporate, clinical, or private wellness programs, or enter graduate studies.

Required course work includes the university requirements (see regulation J-3), an approved 20-credit cognate area of study, 16-17 credits of other requirements of the Division of Health, Physical Education, Recreation and Dance that support the sport science major (see the division director for necessary courses in the university requirements, cognate area of study, and other division requirements), and the following.

Note: See the division director for information on which students should select courses listed as "or."

H&S 150 Wellness Lifestyles 3
H&S 289 Drugs in Society 2
H&S 350 Stress Management & Mental Health 2
H&S 436 Health & Wellness Promotion 3
PE 100 Introduction to Sport Sciences 1
PE 201 Fitness Activities & Concepts 2
PE 260 Motor Development & Control 3
PE 300 Human Kinesiology 2
PE 305 Applied Sports Psych or PE 310 Cultural & Phil Aspects of Sport 2-3
PE 380 Measurement & Evaluation I 2
PE 418 Physiology of Exercise 3
PE 493 Fitness Assessment & Prescription or PE 305/310 (not taken above) 2-3
PE 495 Practicum in Tutoring 2
PE 498 Internship in Physical Education (summer preferred) 9
Rec 330 Therapeutic Rec Programming for People with Disabilities or Rec 110 Recreation for Special Populations 3
Rec 445 Professional Seminar 1
PE activity/skill classes (see division director for selection) 5
Electives to total 128 cr for the degree ....—

Sport science options/studies are available in the following areas: athletic training, communication, business, exercise specialist, fitness/wellness, prephysical therapy, research, sport psychology, and wellness. Consult the director of the Division of Health, Physical Education, Recreation, and Dance for specific course requirements.

Academic Minor Requirements

ATHLETIC TRAINING MINOR

Note: Chem 101 or 111 is required for students who select this minor and Zool 120 is a prerequisite to H&S 245. Only students enrolled in the UI Athletic Training Room clinical experience (approved NATA students) may enroll in H&S 465, 466, 467, 468, or 469. NATA students are not required to take H&S 349.

H&S 245 Introduction to Athletic Injuries 3
H&S 289 Drugs in Society 2
H&S 349 Advanced Athletic Injuries 3
H&S 495 Practicum in Tutoring 2
FCS 205 Concepts in Human Nutrition 3
FCS 305 Nutrition Related to Fitness & Sport 2
PE 300 Human Kinesiology 2
PE 418 Physiology of Exercise 3
Rec 431 Medical Terminology 1

NATA certification students must complete the following additional courses:
- H&S 466 Athletic Training Evaluation
- H&S 467 Athletic Training Rehabilitation
- H&S 468 Athletic Training Modalities
- H&S 469 Athletic Training Organization & Administration

Elective: H&S 465 Medical Aspects of Athletic Injuries

COACHING MINOR

Note: H&S 245, PE 300, and PE 418 have prerequisite requirements.

FCS 305 Nutrition Related to Fitness & Sport 2
H&S 245 Introduction to Athletic Injuries 3
H&S 289 Drugs in Society 2
H&S 349 Advanced Athletic Injuries 3
PE 204 Special Topics: Coaching 4
PE 220 Coaching Youth Sports 1
PE 300 Human Kinesiology or PE 418 Physiology of Exercise 2-3
PE 305 Applied Sports Psych or PE 310 Cultural & Phil Aspects of Sport 2-3
PE 495 Practicum in Tutoring 1
PE 497 Athletic Program Management or PE 440 Phys Ed & Sport Management 3

DANCE MINOR

Dan 320 Labanotation 3
Dan 325 Dance Production 3
Dan 383 Dance Composition 2
Dan 420 Dance Accompaniment 3
Dan 421 Dance History 3
Electives in theatrical dance tech (selected from ballet, jazz, modern) 7

OUTDOOR RECREATION LEADERSHIP MINOR

Rec 125 Outdoor Leisure Pursuits 2
Rec 320 Outdoor Recreation Leadership 2
Rec 321 Wilderness Medicine & Evacuation or H&S 288 First Aid: Emergency Response or other approved medical emergency course 1-2
Rec 420 Experiential Educ or RRT 487 Field Environmental Educ 2-3
RRT 287 Principles of Resource Recreation & Tourism Management or RRT 490 Wilderness Management 2-3
RRT 387 Environmental Interpretive Methods 3
RRT 403 Workshop: Wilderness Vision Questing or RRT 491 Use of Wilderness Environments for Personal Growth 2-3
Courses selected from the following 7
- PE 106 Individual & Dual Sports: Fly Tying/Casting (1 cr)
- PE 108 Swimming: Scuba (1 cr)
- Rec 220 Rock Climbing
- Rec 221 Mountaineering
- Rec 222 Cross Country Skiing
- Rec 223 Winter Camping
- Rec 224 Whitewater Rafting
- Rec 225 Kayaking
- Rec 226 Whitewater Canoeing
- Rec 227 Mountain Biking
- Rec 255 Backpacking & Camping Skills
- Rec 270 Big Game Hunting Techniques & Safety
- Rec/RRT 204 Approved Special Topics course
- Technical competency (contact dept) (max 4 cr)

RECREATION MINOR

Rec 102 Introduction to Recreation Professions 1
Rec 260 Leisure & Society 3
Rec 280 Recreation Practicum 1
Rec 329 Leadership in Recreation 3
Rec 460 History & Philosophy of Recreation & Leisure 3
Rec 486 Recreation Program Planning & Marketing I 2
Rec 493 Management of Leisure Services 3
Recreation electives 4

SPORT ETHICS MINOR

PE J275/J475 Moral Reasoning in Sport 2
PE 310 Cultural & Philosophical Aspects of Sport 2
PE 460 Competition & Social Values 3
PE 470 Sport & Athletic Business Ethics 3
PE 480 Seminar in Sportsmanship: Moral Development 3
PE 499 Directed Study 1
Phil 103 Ethics 3
Phil 414 Ethical Theory 3

SPORT SCIENCE MINOR

Note: H&S 245 and PE 418 have prerequisite requirements..

H&S 150 Wellness Lifestyles 3
H&S 245 Introduction to Athletic Injuries or 288 First Aid: Emergency Response 2-3
H&S 350 Stress Management & Mental Health 2
FCS 205 Concepts in Human Nutrition 3
FCS 305 Nutrition Related to Fitness & Sport 2
PE 201 Fitness Activities & Concepts 2
PE 418 Physiology of Exercise 3
PE 495 Practicum in Tutoring (40 hrs minimum) 1
Courses selected from the following 4-6
- H&S 289 Drugs in Society (2 cr)
- H&S 436 Health & Wellness Promotion (3 cr)
- FCS 470 Trends in Nutrition Research (3 cr)
- PE 105 Dance Aerobics or Jazzercise (1 cr)
- PE 106 Weight Training & Conditioning (1 cr)
- PE 108 Aqua Fitness or Water Aerobics (1 cr)
- PE 305 Applied Sports Psychology (3 cr)
- PE 310 Cultural & Philosophical Aspects of Sport (2 cr)
- PE 493 Fitness Assessment & Prescription (3 cr)

THERAPEUTIC RECREATION MINOR

Note: Zool 120 and 121 are required for Therapeutic Recreation certification.

Psyc 311 Abnormal Psychology 3
Rec 230 Principles of Therapeutic Recreation 3
Rec 280 Recreation Practicum 2
Rec 341 Assessment & Evaluation in Therapeutic Recreation 2
Rec 342 Therapeutic Recreation in Psychiatric Settings 3
Rec 431 Medical Terminology 1
Rec 435 Clinical Aspects of Therapeutic Recreation 3
Rec 467 Therapeutic Recreation for People with Dev Disabilities 3
Approved electives 2-3

TOURISM AND LEISURE ENTERPRISES MINOR

Bus 321 Marketing 3
Rec/RRT 181 Introduction to Hospitality Services Industries 3
Rec 340 Leisure & Tourism Enterprises 3
Rec 382/RRT 381 Hospitality Management & Organization 3
RRT 494 Resource-Based Public Relations & Marketing 3
One course selected from the following 2-3
- Rec 204/Rec 280 Special Topics/Practicum
- Rec 235/RRT 236 Principles of Tourism
- Rec 486 Recreation Program Planning & Marketing I
- RRT 386 Resource Recreation & Tourism Planning
- RRT 398 Internship

Department of History

Richard B. Spence, Dept. Chair (315 Admin. Bldg. 83844-3175; phone 208/885-6253). Faculty: Katherine G. Aiken, Dale T. Graden, Wm. Kent Hackmann, Ellen E. Kittell, Rebecca K. McCoy, Carlos A. Schwantes, Richard B. Spence, William R. Swagerty. Affiliate Faculty: Marvin G. Slind, Merle W. Wells.

The study of history provides a broad, general view of human development from the beginning of recorded time to the present. Emphasis is on intellectual and cultural values and activities in political, social, economic, and religious institutions. Each course provides rigorous training of the mind to think, to evaluate problems, and to reach sound conclusions through the examination of general or specific chronological periods in several geographic settings. Special attention is given to written work in the form of quizzes, examinations, and review or research essays.

A major in history can be used in government service, the new specialty of public history, several areas of business and industry, and many other fields. It can also be used in preparation for study of the law, the ministry, and archival work and librarianship. Double majors combining history with other fields are easily arranged.

The history curricula provide, through lectures, seminars, colloquia, and directed studies, a survey of mankind's experience. The department offers courses of study leading to the B.A. or the B.S. degree and has a staff of eight full-time professors who hold the Ph.D. degree. The historian's laboratory is the library, where one finds the record of the past as preserved in primary sources and interpreted by authorities in general works, monographs, and maps. The department has a good collection of maps, slides, and microform readers.

Graduate study is offered in American, English, European (medieval through modern), and Latin American history. The degree programs include Master of Arts, Master of Arts in Teaching, and Doctor of Philosophy, for which dissertation topics are limited to the fields of the North American West, U.S. since 1877, and Europe since 1750. Undergraduates considering graduate study should master at least one modern foreign language through the intermediate level.

Courses

See part 6 for courses in History (Hist).

Curricular Requirements

HISTORY (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

Lower-division courses selected from the following 9
- Hist 101-102 History of Civilization
- Hist 111-112 Introduction to U.S. History

Hist 290 The Historian's Craft 3
Upper-division history courses, including a seminar in senior year 27
Related fields 20

HISTORY (B.S.)

Note: Students expecting to study for an M.A. or Ph.D. degree in history should take the B.A. rather than the B.S. degree.

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.S. degree, and:

Lower-division courses selected from the following 9
- Hist 101-102 History of Civilization
- Hist 111-112 Introduction to U.S. History

Hist 290 The Historian's Craft 3
Upper-division history courses, including a seminar in senior year 27
Related fields 20
Any combination of the following 12
- Any foreign language (high-school foreign language may be substituted at the rate of 4 cr per year)
- Engl 257-258 Literature of Western Civilization
- FL/EN 313-314 Modern French Literature in Translation
- FL/EN 323-324 German Literature in Translation
- FL/EN 363-364 Literature of Ancient Greece & Rome
- FL/EN 393 Spanish Literature in Translation
- FL/EN 394 Latin American Literature in Translation

Academic Minor Requirements

HISTORY MINOR

History courses chosen from the following* 9
- Hist 101-102 History of Civilization
- Hist 111-112 Introduction to U.S. History

History courses at the 300- or 400-level (at least 3 cr in U.S. or Latin American hist and at least 3 cr in Ancient or European hist) 9
History elective (may be course not taken above) 3

*For demonstrable cause, department chair or minor adviser may allow substitution of courses numbered above 100-level.

Program in Interdisciplinary Studies

Thomas E. Bitterwolf, Coordinator, Undergraduate Courses (112 Admin. Bldg. 83844-3154; phone 208/885-6426). Roger P. Wallins, Coordinator, Graduate Courses (112 Morrill Hall 83844-3017; phone 208/885-6243).

Courses

See part 6 for courses in Interdisciplinary Studies (Inter).

Curricular Requirements

INTERDISCIPLINARY STUDIES (B.A. or B.S.)

A student may present a curriculum not included among the ones listed elsewhere in this catalog provided the program is focused toward meeting the student's particular educational goal by combining the offerings of two or more major departments. The program normally is developed and presented during the sophomore year. It must be presented before the end of the second semester of the junior year or at the time when at least 30 credits of the proposed program remain to be taken. It must be approved by: (a) at least one faculty member from each of the participating departments of the university, one of which must be in L & S, (b) the chair of one of the L & S departments involved, and (c) the L & S Committee on Interdisciplinary Studies. University requirements (see regulation J-3) and L & S requirements for either the B.A. or B.S. degree apply. This program requires a minimum of 128 credits, of which at least 50 credits must be in courses numbered 200 or above, including a minimum of 36 credits in courses numbered 300 or above. It is recommended, however, that majors in interdisciplinary studies complete at least 50 credits in upper-division courses.

Interested students should consult the L & S dean's office for referral to the Interdisciplinary Studies Committee for further information about this program.

INTERDISCIPLINARY ACADEMIC MINORS

A student may present a minor curriculum not included among the ones listed elsewhere in this catalog. The program must include at least 24 credits and be approved by: (a) at least one faculty member from each of the participating departments of the university, (b) the chair of one of the departments involved, and (c) in the case of minors that involve a department in the College of Letters and Science, the L & S Committee on Interdisciplinary Studies.

Program in International Studies

Richard A. Slaughter, Coordinator (1 Cont. Ed. Bldg. 83844-3229; phone 208/885-6527). Faculty: Ernest D. Ables, Roy A. Atwood, John H. Ehrenreich, Shaikh M. Ghazanfar, James R. Jones, Michael W. Moody, Alwyn R. Rouyer, Richard B. Spence, Roderick Sprague, Curtis N. Thomson, Maurice V. Wiese. Adjunct Faculty: Michael R. Whiteman.

Courses

See part 6 for courses in International Studies (IS).

Curricular Requirements

INTERNATIONAL STUDIES (B.A.)

Required course work includes the university requirements (see regulation J-3) and:

Courses to include the following (no more than 15 cr at the lower-div level and no more than 12 cr from any single discipline) 48
- Anth 220 Peoples of the World
- Econ 201-202 Principles of Economics
- Econ 446 International Econ or Econ 447 Econ of Developing Countries
- Geog 200 World Regional Geography
- Hist 290 The Historian's Craft or PolS 435 Political Research Methods & Approaches or Soc 410 Methods of Social Research
- IS 400 Seminar: International Issues
- PolS 237 International Politics
- Stat 150 Intro to Statistics or 251 Principles of Statistics
- At least 9 cr from one of the following issue emphases: international relations, international economics and business, global resources and development (see courses below)
- At least 12 cr from one of the following regional emphases: Latin America, Europe, Asia-Africa (see courses below)

Demonstrated proficiency in a modern foreign language equivalent to that gained from six semesters of university study 0-22

In addition, international experience is required for all students in this major. The experience must extend consecutively for at least 10-12 weeks and include an academic project or assignment and immersion in the culture of the country. All costs associated with the international experience are the responsibility of the student. The requirement of international experience may be satisfied by:

a. Academic Experience. Fulfilled by completing a registered credit program such as study abroad, student exchange, student teaching, or internship. In general, credits are registered on the UI campus; course work and field experience are taken abroad.

b. Work Abroad. Fulfilled by completing a noncredit work experience that places the student abroad for a contracted length of time. In general, the work assignment is taken during the degree program.

c. Past Work Abroad. A student who has had previous contracted experience abroad (e.g., Peace Corps), petitions for acceptance. A panel of three faculty members assesses the merits of the experience based on, but not limited to, the following criteria: verification, length, nature, recentness, and relevancy of experience.

ISSUE EMPHASES IN INTERNATIONAL STUDIES

A. International Relations

Geog 365 Political Geography (3 cr)
Hist 429-430 U.S. Diplomatic History (3 cr each)
Hist 458 Military History (3 cr)
Phil 461 Philosophy of War & Peace (3 cr)
PolS 237 International Politics (3 cr) (reqd for major)
PolS 382 Post-Communist Politics (3 cr)
PolS 438 Conduct of American Foreign Policy (3 cr)
PolS 440 International Organizations and International Law (3 cr)
PolS 449 World Politics and War (3 cr)
PolS 487 Political Violence and Revolution (3 cr)

B. International Economics and Business

AgEc 332 Economics of Agricultural Development (3 cr)
Bus 380 International Business (3 cr)
Bus 481 International Finance (3 cr)
Bus 482 International Marketing (3 cr)
Bus 485 Advanced International Business (3 cr)
Econ 390 Comparative Economic Systems (3 cr)
Econ 446 International Economics (3 cr)
Econ 447 Economics of Developing Countries (3 cr) (reqd for major)

C. Global Resources and Development

AgEc 332 Economics of Agricultural Development (3 cr)
Anth 462 Human Issues in International Development (3 cr)
For/RRT/Soc 235 Society & Natural Resources (3 cr)
For 420 Tropical Dendrology/Ecology (3 cr)
For 495 International Wildland Management (1-3 cr, max 3)
Geog 350 Geography of Development (3 cr)
Geog 360 Population Dynamics and Distribution (3 cr)
PolS 480 Politics of Development (3 cr)
Rnge 358 Natural Resources of the World (3 cr)
Rnge 458 Agroforestry (3 cr)
RRT 492 International Land Preservation Systems (3 cr)
RRT 493 International Issues in Nature Conservation (3 cr)

REGIONAL EMPHASES IN INTERNATIONAL STUDIES

A. Latin America

FLEN/Span 391 Hispanic Film (3 cr)
FLEN 394 Latin American Literature in Translation (3 cr)
Span 384 Hispanic Culture and Institutions (3 cr)
Span 387-388 Survey of Spanish-American Literature (3 cr)
Span 487-488 Contemporary Spanish-American Literature (3 cr)
Hist 210 Intro to Modern Latin American History (3 cr)
Hist 435 Latin America: The Colonial Era (3 cr)
Hist 438 Modern Mexico (3 cr)
Hist 439 Modern Latin America (3 cr)
Hist 440 Social Revolution in Latin America (3 cr)
PolS 482 Latin American Politics (3 cr)

B. Europe

Engl 342 Survey of British Literature (3 cr)
FLEN 313-314 Modern French Literature in Translation (3 cr each)
FLEN 323-324 German Literature in Translation (3 cr each)
FLEN 393 Spanish Literature in Translation (3 cr)
Fren 303 French Civilization: Institutions (3 cr)
Fren 304 French Culture (3 cr).
Fren 305 Survey of French Fiction & Drama (3 cr)
Fren 306 Survey of French Essay & Poetry (3 cr)
Fren 407 French Literary Themes (3 cr)
Fren 416 French Business (3 cr)
Germ 325-326 German Culture and Institutions (3 cr each)
Germ 327-328 Survey of German Literature (3 cr)
Germ 420 Readings in German Literature (3 cr)
Hist 345 European Christianity, 500-1700 (3 cr)
Hist 350 European Popular Culture, 1500-1800 (3 cr)
Hist 366 Intellectual and Cultural History of Modern Europe (3 cr)
Hist 447 The Age of the Renaissance and the Reformation (3 cr)
Hist 451 Age of the French Revolution (3 cr)
Hist 452 19th Century Europe (3 cr)
Hist 455 20th Century Europe (3 cr)
Hist 466 Eastern Europe Since 1774 (3 cr)
Hist 467 Russia to 1894 (3 cr)
Hist 468 Russia and Soviet Union Since 1894 (3 cr)
Hist 469 Modern France (3 cr)
Hist 470 Germany and Central Europe Since 1815 (3 cr)
PolS 381 Politics of Western Europe (3 cr)
Span 383 Hispanic Culture and Institutions (3 cr)
Span 385-386 Survey of Spanish Literature (3 cr)

C. Asia-Africa

Anth 426 Anthropology of China (3 cr)
Hist 457 History of the Middle East (3 cr)
Phil 306 Hindu Thought (3 cr)
Phil 307 Buddhism (3 cr)
Phil 308 Confucianism & Taoism (3 cr)
PolS 483 Middle Eastern Politics (3 cr)
PolS 484 Politics of India and the Subcontinent (3 cr)
PolS 485 African Politics (3 cr)

COMPARATIVE WORLD SOCIETIES AND CULTURES

Anth 327 Belief Systems (3 cr)
Arch 385 History of Architecture I: Pre-Modern (3 cr)
Arch 386 History of Architecture II: Modern (3 cr)
Art 301 History of Art: 19th Century (3 cr)
Art 302 History of Art: 20th Century (3 cr)
Comm 490 International Communication (3 cr)
Engl 441 Introduction to the Study of Language (3 cr)
Hist 441 Comparative Slavery & Emancipation in the Atlantic World (3 cr)
MusH 322-323 Music in Western Civilization (3 cr each)

Academic Minor Requirements

INTERNATIONAL STUDIES MINOR

In consultation with the International Studies Committee (ISC), students electing this academic minor submit an individual study plan emphasizing (a) international relations, (b) international economics and business, or (c) global resources and development.

Basic Credit Requirements. At least 21 credits selected from the list of courses approved by the ISC—consisting of the following:

6 credits chosen from Anth 220, Econ 446, Econ 447, Geog 200, IS 400, PolS 237

6 credits from one of the following issue emphases: international relations, international economics and business, global resources and development (see courses above)

6 credits from one of the following regional emphases: Latin America, Europe, Asia-Africa (see courses above)

2. **Limitations**. Of the minimum of 18 credits required, (a) not more than six may be at the lower-division level, (b) no more than nine may be in any single discipline, and (c) no more than six may be in the student's major field. No course to be counted toward the minor may be taken by directed study without prior approval by the ISC.

3. **Language Proficiency**. Demonstrated proficiency (equivalent to that required for the B.A. degree) in a modern foreign language. Students who cannot demonstrate proficiency must complete at least four credits in a modern foreign language, but these credits do not count toward the basic 18-credit requirement.

Department of Landscape Architecture

Stephen R. Drown, Dept. Chair (204 Art and Arch. Annex 83844-2481; phone 208/885-7448). Faculty: Gary Austin, Stephen R. Drown, James J. Kuska, Toru Otawa. Affiliate Faculty: Don Brigham, Lynda A. Johnson, Janet Silbernagel.

Landscape architecture is an environmental design and planning profession. It is the art and science of integrating human activities with the natural and urban environment. The profession's objective is to minimize the impact of humans on the natural processes while providing for their physical and psychological needs through design.

As a profession, landscape architecture encompasses certain design skills that enable it to resolve conflicts that arise in the complex interrelationships of physical, economic, political, and social activities of people and their use of the environment. This requires an understanding of the natural systems and visual pattern of the land, necessitating courses in the natural sciences, such as biology, geology, and soils. In order to understand the nature of the physical, psychological, and social characteristics of mankind, studies in the behavioral and social sciences are extremely important in adapting development to the land. Technical knowledge about site modification is gained through courses in civil engineering and site engineering (landscape construction). This knowledge is balanced with studies in the visual arts to address the needs of people for an aesthetic environment.

The landscape architect's unique expertise lies in the development of a systematic and analytical approach to solving land-use problems. The foundation of the Landscape Architecture Department has been a strong emphasis on this "design process" as a methodology for solving various planning and design problems. The types of projects encountered within the program simulate those in professional practice: residential developments; resource planning; environmental impact assessment; community and historic preservation planning; industrial, institutional, and commercial planning; transportation and utility planning; landscape restoration and reclamation; aesthetic and visual resource management; river and shoreline planning; parks and recreation planning; site energy planning; and computer land planning.

The faculty members and students in the program have access to powerful geographic information systems, visual simulation and CADD computer programs, and an interactive video system that makes this one of the leading departments in landscape architecture in terms of computing capabilities. The faculty members have agreed to use the computer in some way in each landscape architecture course they teach, assuring that students will be computer literate upon graduation.

Landscape architecture students are required to take part in two major field trips at their own expense as partial fulfillment of the program requirements. In addition, one-day or overnight trips are a common occurrence as part of individual classes.

The Department of Landscape Architecture is housed with the interrelated professions of art, architecture, and interior design in the College of Art and Architecture. The department offers a professional four-year program leading to the degree of Bachelor of Landscape Architecture. The department's program is fully accredited by the American Society of Landscape Architects.

Courses

See part 6 for courses in Landscape Architecture (LArc).

Curricular Requirements

LANDSCAPE ARCHITECTURE (B.L.Arch.)

A place in the program (sophomore and above) may be restricted due to Landscape Architecture Accreditation Board guidelines (faculty-student ratios), studio space availability, and GPA. Entry decisions for transfer students from within the university and outside institutions will be based on GPA (typically limited to 2.5 or above), test scores (ACT/SAT), a portfolio, and a letter of intent.

On registering for a course offered in the department, the student agrees that the department may retain work completed by the student.

Note: A "C" or better in all landscape architecture courses must be maintained for a student to remain in good standing in the department. At no time may a student advance in the design and construction studio series (LArc 259, 260, 270, 359, 360, 371, 459, 460) if he or she has received less than a "C" in design for more than one semester. A grade of "C" or better is required in all landscape architecture courses, with the exception of no more than one studio, for a student to graduate from the program.

Students must complete Engl 101 and 102 with a "C" or better before entering LArc 259, and Math 143 (or equivalent) with a "C" or better before entering LArc 270.

Required course work includes the university requirements (see regulation J-3) and:

LArc 155, 156 Introduction to Landscape Architecture I-II 2
LArc 210 Computer Applications in Landscape Architecture 2
LArc 247 Landscape Graphics 3
LArc 259-260 Landscape Architecture I 12
LArc 270, 371 Landscape Construction I-II 8
LArc 288, 388 Plant Materials I-II 7
LArc 358 Professional Office Practice, LA 2
LArc 359-360 Landscape Architecture II 12
LArc 385 GIS Primer 3
LArc 389 History of Landscape Architecture 3
LArc 459-460 Landscape Architecture III 12
LArc 480 Issues for the Emerging Landscape 3
Arch 483 Urban Theory & Issues 3
Art 100 Visual Art 3
Art 111 Drawing I-II 3
Art 121 Visual Communication & the Design Process 3
Biol 100 Introduction to Biology 4
Biol 331 General Ecology or For/Rnge/WLF 221 Natural Resources Ecology 3
Geol 101 Physical Geology 4
Math 143 Pre-calculus Algebra & Analytic Geometry 3
Soil 205 General Soils 3
Electives to total 133 cr for the degree, of which at least 6 cr must be from psychology and/or sociology ..... —
Recommended elective:
- Arch 374 Computer Applications in Architecture
- Arch 384 Computer-Aided Design
- Geol 335 Geomorphology
- LArc 299 DS: Irrigation
- LArc 490 Computer-Aided Regional Landscape Planning

Academic Minor Requirements

LANDSCAPE ARCHITECTURE MINOR

LArc 155 Introduction to Landscape Architecture I 1
LArc 389 History of Landscape Architecture 3
LArc 480 Issues for the Emerging Landscape 3
Courses chosen from the following 11
- LArc 156 Intro to Landscape Architecture II (1 cr)
- LArc 210 Computer Applications in Landscape Architecture (2 cr)
- LArc 247 Landscape Graphics (3 cr)
- LArc 259 Landscape Architecture I (6 cr) (with instructor's perm)
- LArc 270 Landscape Construction I (4 cr)
- LArc 288 Plant Materials I (3 cr)
- LArc 371 Landscape Construction II (4 cr)
- LArc 385 GIS Primer (3 cr)
- LArc 388 Plant Materials (4 cr)
- LArc 490 Computer-Aided Regional Landscape Planning (3 cr)

Program in Latin American Studies

Dale T. Graden, Coordinator (305-A Admin. Bldg. 83844-3175; phone 208/885-8956). Faculty: Dale T. Graden, Sam H. Ham, Peter E. Isaacson, Alfred W. Jensen, Irina Kappler-Crookston, Richard M. Keenan, Michael W. Moody, Laura Putsche, Mary H. Voxman, Dennis D. West, Daniel G. Zirker.

The program in Latin American studies is a multidisciplinary major leading to the B.A. degree. The appeal of this field of study has greatly increased over the last decade, due to the region's growing economic and political importance. A degree in the major is appropriate for employment in many fields, among which are the diplomatic service and overseas business as well as graduate study in various disciplines. Students electing the major will also broaden their awareness of non-Western cultures and history.

Curricular Requirements

LATIN-AMERICAN STUDIES (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, including Spanish for the foreign language requirement, and:

Hist 435 Latin America: The Colonial Era 3
Hist 438 Modern Mexico or 439 Modern Latin America 3
Span 384 Hispanic Culture & Institutions 3
Span 387-388 Survey of Spanish-American Literature or 487-488 Contemporary Spanish-American Literature 6
And at least seven of the following courses (or the optional courses listed above) 21
- Anth 220 Peoples of the World
- Anth 462 Human Issues in International Development
- *Econ 447 Economics of Developing Countries
- FLEN or Span 391 Hispanic Film
- FLEN 394 Latin American Literature in Translation
- Hist 210 Introduction to Modern Latin American History
- Hist 440 Social Revolution in Latin America
- Hist 441 Comparative Slavery & Emancipation in the Atlantic World
- *PolS 482 Latin American Politics
- RRT 493 International Issues in Nature Conservation
- Span 386 Survey of Spanish Literature
- Span 404 Special Topics (with prior approval of program coordinator)

*Students are strongly urged to elect those courses marked with an asterisk and to take Hist 101-102 (History of Civilization) in their freshman year.

Martin Institute for Peace Studies and Conflict Resolution

Richard A. Slaughter, Director (1 Cont. Educ. Bldg 83844-3229; phone 208/885-6527).

The Martin Institute for Peace Studies and Conflict Resolution is a multidisciplinary center at the University of Idaho, founded in the belief that war and violence are neither necessary nor inevitable. Its purposes are to encourage education and research to advance peace at all levels and also to resolve local and regional conflicts with alternatives to confrontation and litigation. Institute scholars seek to understand the major causes of disputes and violence and to provide information, training, and assistance for the resolution of conflicts. The institute brings together scholars, students, and present and future leaders to develop the knowledge needed for the on-going and new challenges of establishing peace as a basis for long-range social and economic progress.

Courses

See part 6 for courses in the Martin Institute (Mrtn).

Department of Mathematics

Erol Barbut, Dept. Chair (300 Carol Ryrie Brink Hall 83844-1103; phone 208/885-6742). Faculty: Gail H. Adele, Erol Barbut, Arie Bialostocki, Larry E. Bobisud, Willy Brandal, James E. Calvert, Jr., Charles O. Christenson, John I. Cobb, Paul F. Dierker, Roy H. Goetschel, Jr., Paul Joyce, Stephen M. Krone, Mark J. Nielsen, Ralph J. Neuhaus, Cynthia M. Piez, William D. Royalty, Hunter S. Snevily, Mary H. Voxman, William L. Voxman. Affiliate Faculty: Paul Erdos.

The Department of Mathematics offers a wide variety of majors and minors. In addition to the degree programs described below, many students pursue joint majors in mathematics and other disciplines that utilize mathematics. The most popular of these are mathematics/computer science and mathematics/physics. A joint major is obtained by completing the degree requirements for both majors. Minor programs are described below under "Curricular

Requirements." At the graduate level, the department offers the M.S., M.A.T., and Ph.D. in mathematics. Detailed information on these programs is published in the *Graduate Catalog*.

The need for persons with quantitative skills is increasing dramatically as the world grows more complex. Mathematicians and statisticians have employment opportunities in business, industry, government, and teaching. Training in mathematics, with its emphasis on problem solving, analysis, and critical thinking, is excellent preparation for graduate programs in engineering science, business, or law. In fact, persons planning careers in almost any field will find their opportunities enhanced by the study of mathematics and statistics. The programs are intended to provide students just such enhancement. It is generally the case that the person who develops his or her quantitative skills has increased ability to attack many of the complex problems of society. Advances in science, technology, the social sciences, business, industry, and government become more and more dependent on precise analysis and the extraction of information from large quantities of data. Environmental problems, for example, require careful analysis by persons (or teams of persons) with skills in mathematics, statistics, and computer science as well as in biology, geology, physics, and many other fields.

The demand for teachers of mathematics is greater now than ever before. Nearly every school district in the nation has a shortage of teachers trained in mathematics. UI offers a broadly based program leading to teacher certification, through enrollment either in the Department of Mathematics or in the College of Education and completion of a major or minor in mathematics.

Mathematics. The body of mathematical knowledge that has grown over the past 2,000 years is a magnificent human achievement, and it is growing more rapidly than ever before. The habits of systematic and creative thought developed in the study of mathematics are recognized as invaluable in most areas of human endeavor. UI's B.A. and B.S. programs in mathematics are designed to introduce the student to the excitement of mathematical ideas; they allow the maximum possible freedom to explore those areas of mathematics that the student finds most interesting.

The department has a sound program in mathematics with a proven record of preparing students for successful graduate study at the very best universities in the nation. There are sequences of courses in calculus, advanced calculus, linear algebra, differential equations, number theory, abstract algebra, topology, geometry, statistics, complex analysis, and mathematical analysis. Students of mathematics who do not go to graduate school are well prepared for industrial, governmental, or teaching jobs if they have some additional exposure to computer science, education, or one of the natural, social, or applied sciences.

Applied Mathematics. Many of the greatest achievements in mathematics were inspired by problems in the natural sciences; today mathematics has wide application in both the natural and social sciences. Applied mathematics provides a broad arena for intellectual and creative impulses of people. The B.S. in applied mathematics allows a choice of the actuarial science, computation, operations research, scientific, or statistics options. Each of these is discussed briefly below. Many students interested in applications of mathematics pursue a joint major in some other department.

Actuarial Science Option. An actuary applies mathematics and statistics to forecasting problems. Actuaries are employed by financial institutions, government, insurance companies, and international corporations. They address problems as diverse as economic fluctuations, population demographics, resource consumption, medical insurance rates, and retirement needs. Actuaries are in great demand and have many interesting career opportunities leading often to high management positions. Admission to the actuarial profession is governed by a series of examinations administered by the actuarial societies. The first two or three examinations can be taken by undergraduates, and the rest are usually taken while working in the industry. The first three examinations are given locally. Our actuarial science option, review seminars, and summer internship program with actuarial companies prepare students for these tests.

Computation Option. The advent of computers has changed nearly every aspect of society. As computation has become both more important and more feasible, it has inspired the development of several fields of study within mathematics. The computation option of the applied mathematics degree provides training in the mathematics applicable to computer science and technology. Many students pursue this option jointly with a computer science major.

Operations Research Option. This option is designed to prepare students for careers in business planning and management. The emphasis of study is on the mathematics used in modelling and analysis of real-world problems. This program is an excellent preparation for students planning to pursue an MBA degree.

Scientific Option. This option for the applied mathematics degree provides background sufficient for a career in science or technology. Completing this option jointly with a major in one of the sciences gives excellent preparation for graduate work in scientific research. Due to its flexibility in choosing courses, students from many scientific disciplines will find the option appealing.

Statistics Option. Statistics encompasses course work in designing and analyzing experiments, planning and interpreting surveys, and exploring relationships among variables observed on social, physical, and biological phenomena. The applied nature of the program allows the student to develop data analysis tools for such diverse areas as business and economics, crop and animal production, biological sciences, human behavior, education, engineering, and natural resource management. The statistics program thus serves to support major programs in other disciplines. Within the department, a statistics option is available under applied mathematics leading to a baccalaureate degree, and an M.S. degree in statistics is offered at the graduate level through the Division of Statistics.

Faculty members in the Department of Mathematics will be happy to answer questions about specific programs and courses. Such questions can also be addressed to the department chair (Brink 300; telephone 208/885-6742).

Courses

See part 6 for courses in Mathematics (Math).

Curricular Requirements

MATHEMATICS (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and:

Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 215 Seminar in Topology of the Plane 3
Math 330 or 440 Linear Algebra 3
Math 461 Abstract Algebra 3
Math 462 Abstract Algebra or 472 Advanced Calculus 3
Math 471 Advanced Calculus 3
Math electives in courses numbered above 300, at least 6 cr of which are in courses numbered above 401 12
Phys 211, 212 Engr Physics I, II, and either Phys 213 or an upper-division physics course with a Math 170 prereq (to acquaint the student with an area in which math is systematically applied; upon approval of the dept, substitution of other courses to meet this requirement may be allowed) 9

MATHEMATICS: APPLIED (B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.S. degree, and:

Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 330 Linear Algebra 3
CS 112 Introduction to Problem Solving & Programming 3

And one of the following options:

A. STATISTICS OPTION

Math 451-452 Probability Theory & Math Statistics 6
Math 453 Stochastic Models 3
Stat 301 Probability & Statistics 3
At least two courses from the following 6
Math 426 Discrete Optimization
Math 432 Numerical Linear Algebra
Math 433 Numerical Analysis

Math 440 Linear Algebra
Math 471-472 Advanced Calculus
Math 475 Analysis of Algorithms
CS 213 Data Structures
At least two courses from the following 5-6
Stat 401 Statistical Analysis
Stat 422 Sampling Methods
Stat 507 Experimental Design
Stat 510 Regression
Stat 514 Nonparametrics
Stat 521 Multivariate Analysis
Approved electives in fields where statistics is applied (not to be in stat courses) 6

B. COMPUTATION OPTION

Math 432 Numerical Linear Algebra or 426 Discrete Optimization 3
Math 433 Numerical Analysis 3
Math 475 Analysis of Algorithms 3
CS 213 Data Structures 3
At least three courses from the following, including at least one course numbered 346 or above 9
Math 310 Ordinary Differential Equations
Math 326 Linear Programming
Math 346 Applied Combinatorics
Math 376 Discrete Mathematics II
Math 485 Theory of Computation
Stat 301 Probability & Statistics
Two additional math courses numbered 400 or above 6

C. SCIENTIFIC OPTION

Math 310 Ordinary Differential Equations 3
Math 480 Partial Differential Equations 3
Stat 301 Probability & Stat or Math 451 Probability Theory & Math Stat 3
At least two courses from the following 5-6
Math 202 Seminar
Math 420 Complex Variables
Math 432 Numerical Linear Algebra
Math 433 Numerical Analysis
Five additional math courses selected from 326, 346, or courses numbered 400 or above 15

D. ACTUARIAL SCIENCE OPTION

Math 326 Linear Programming 3
Math 433 Numerical Analysis 3
Math 451-452 Probability Theory & Math Stat 6
Three courses selected from the following 8-9
Math 432 Numerical Linear Algebra
Math 453 Stochastic Models
Math 471 Advanced Calculus
Math 472 Advanced Calculus
Math 475 Analysis of Algorithms
Stat 422 Sampling Methods
Stat 510 Regression
Stat 521 Multivariate Analysis
Acct 201-202 Introduction to Accounting 6
Bus 301 Financial Management 3
Bus 364 Insurance 3
Econ 201, 202 Principles of Economics 6
Stat 301 Probability & Statistics 3
Stat 401 Statistical Analysis 3
At least one course selected from the following 3
Bus 401 Investments
Bus 405 Portfolio Management
Econ 352 Intermediate Microeconomic Analysis
Econ 353 Quantitative Methods in Economics
Econ 453 Econometrics

E. OPERATIONS RESEARCH OPTION

Math 326 Linear Programming 3
Math 346 Applied Combinatorics 3
Math 426 Discrete Optimization 3
Math 451 Probability Theory & Mathematical Statistics 3
Math 453 Stochastic Models 3
At least one course from the following 3
Math 310 Ordinary Differential Equations
Math 376 Discrete Mathematics II
Math 452 Probability Theory & Mathematical Statistics
Stat 401 Statistical Analysis
Any other 400-level math course except those numbered 441-449
Acctg 202 Introduction to Managerial Accounting 3
Bus 370 Production/Operations Management 3
Stat 271 Statistical Inference & Decision Analysis or 301 Probability & Statistics 3-4
Four of the following courses (two must be above 400) 12
Econ 453/Stat 433 Econometrics
Bus 332 Quantitative Methods in Business
Bus 350 Management Information Systems
Bus 355 Systems Analysis & Design
Bus 378 Project Management
Bus 437 Statistics for Business Decisions
Bus 439 Systems & Simulation
Bus 456 Quality Management
Bus 472 Operations Planning & Scheduling

Academic Minor Requirements

MATHEMATICS MINOR

Math 170, 175 Analytic Geometry & Calculus 8
Six math courses chosen from Math 275, Stat 301, and math courses numbered 300 or above 18

Department of Mechanical Engineering

Steven G. Penoncello, Dept. Chair (202 Gauss Lab. Bldg. 83844-1030; phone 208/885-6579). Faculty: Michael J. Anderson, Tony J. Anderson, Jasper R. Avery, Steven W. Beyerlein, Donald M. Blackketter, Ralph S. Budwig, John C. Crepeau, Karen R. DenBraven, Dean B. Edwards, Rudolph J. Eggert, Donald F. Elger, Martha Ford, Richard T. Gill, Richard T Jacobsen, E. Clark Lemmon, Edwin M. Odom, Steven G. Penoncello, T. Alan Place, Ronald E. Smelser, Larry A. Stauffer, Judith A. Steciak, Robert R. Stephens, Blaine W. Tew, Weldon R. Tovey, David M. Woodall.

Mechanical engineering is concerned with the application of the principles of science and technology in the creation of products and systems to benefit mankind in several areas including: (1) the conversion of energy from natural sources to provide power, light, heating and cooling, and transportation; (2) the design and production of machines to extend and to lighten the burden of human work; (3) the creative planning, design, development, and operation of systems for utilizing energy, machines, and other resources; (4) the production of manufactured goods; and (5) the interface between technology and society.

Mechanical engineering is broad in scope and provides a wide range of careers for trained professionals in industry, business, government, and universities. Positions are available in design, testing, manufacturing, research, development, operations, system analysis, marketing, and administration. Mechanical engineers are often involved as professional team members in economic and social-humanistic matters and are responsible for the interaction of technical advances with social and environmental concerns.

The mechanical engineering program at UI is designed to prepare students for entry into professional practice and for continuing education at the master's and doctoral levels. The engineering sciences, physical sciences, mathematics, communications, humanities, and social sciences form the basis for the curriculum. The program also includes specialized courses in thermal sciences and applied mechanics. Development of creative ability in design and synthesis of components and systems is an important part of the departmental curriculum. Computer applications are emphasized in course work. Students are encouraged to develop individual interests through the selection of technical elective courses.

Research projects conducted by faculty members provide both experience and financial support for undergraduate and graduate students in mechanical engineering.

Faculty members are available to discuss details of the program in their specialty areas with interested students. General questions regarding the undergraduate program should be addressed to the undergraduate adviser, Jasper R. Avery, or the department chair (telephone 208/885-6579).

A degree in manufacturing engineering may be available in the future when resources become available. An academic minor in manufacturing engineering is available. Contact the department for more information.

The following graduate degrees are available in mechanical engineering: Ph.D., M.S., and M.Engr. (nonthesis degree). The department may offer in the future M.S. and M.Engr. degrees in manufacturing engineering. In addition, the Ph.D., M.S., and M.Engr. in nuclear engineering are offered at the UI/Idaho Falls Center for Higher Education. Minimum preparation for graduate study in mechanical engineering is a B.S. degree in a curriculum in mechanical engineering that is accredited by the Accreditation Board for Engineering and Technology (A.B.E.T.). Students entering the program with an engineering or physical science baccalaureate

degree in a major other than mechanical engineering must demonstrate proficiency in the subjects required in the B.S.M.E. program. Individual student qualifications are assessed by the departmental graduate committee, which also determines undergraduate deficiencies. The graduate adviser is E. Clark Lemmon, 202 Gauss (208/885-6579).

Courses

See part 6 for courses in Mechanical Engineering (ME).

Curricular Requirements

MANUFACTURING ENGINEERING (B.S.Mfg.E.)

This curriculum may be available when adequate resources become available to seek accreditation. Contact the department for more information.

This program is not accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Required course work includes the university requirements (see regulation J-3), and the following:

Bus 370 Production/Operations Management 3
ChE 321 Engineering Thermodynamics & Heat Transfer 3
Chem 111 Principles of Chemistry I 4
CE 210 Engineering Statics 3
CE 320 Engineering Fluid Mechanics 3
CE 411 Engineering Fundamentals 0
EE 207 Introduction to Electrical Engineering 3
EE 313 Analog & Digital Engineering 3
Engl 317 Technical & Engineering Report Writing 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
ME 101 Engineering Graphics 2
ME 123 Introduction to Mechanical Design 3
ME 220 Engineering Dynamics 3
ME 223 Mechanical Design Analysis 3
ME 261 Engineering Materials or Met 201 Elements of Materials Science 3
ME 262 Sophomore Laboratory 2
ME 304 Materials Selection & Processing for Mechanical Design 3
ME 324 Dynamic Analysis in Machine Design 3
ME 330 Experimental Methods for Engineers 3
ME 340 Engineering Mechanics of Materials 3
ME 341 Intermediate Mechanics of Materials 3
ME 391 Mechanical Engineering Seminar 1
ME 409 Human Factors in Engineering Design 3
ME 410 Production Engineering 3
ME 424 Mechanical Systems Design I 3
ME 425 Machine Component Design 3
ME 426 Mechanical Systems Design II 3
ME 431 Manufacturing Processes Lab 3
ME 476 Automation, Robotics, & Computer Integrated Manufacturing 3
ME 481 Control Systems 3
Phys 211, 212 Engineering Physics I-II 8
Stat 301 Probability & Statistics 3
Science elective (including lab component) selected from Biol 100, Biol 201, Chem 112, Geog 100, Geol 101, or Phys 213 4
Humanities and social sciences electives, incl at least (1) one upper-division course that is the second course completed in that subject or (2) a course that has another humanities-social science course as a prerequisite 16

The minimum number of credits for the degree is 129, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

Pre-advising is required to register in any ME course. To graduate in this program, a minimum grade of C must be earned in all engineering, mathematics, and science courses used to satisfy the curricular requirements.

A grade of C or better is required in the following lower-division courses before registration is permitted in upper-division engineering courses: CE 210, Chem 111, EE 207, Engl 102, Math 170, 175, and 275, ME 101, 123, 220, 223, 261, and 262, Phys 211, 212, and the basic science elective. In addition, a grade higher than C must be earned in at least five of these courses. A grade of P (pass) in any of these courses is considered as a C grade in satisfying this certification requirement.

MECHANICAL ENGINEERING (B.S.M.E.)

This program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Note: Pre-advising is required to register in any ME course. To graduate in this program, a minimum grade of C must be earned in all engineering, mathematics, and science courses used to satisfy the curriculum.

Required course work includes the university requirements (see regulation J-3) and:

ME 101 Engineering Graphics 2
ME 123 Introduction to Mechanical Design 3
ME 220 Engineering Dynamics 3
ME 223 Mechanical Design Analysis 3
ME 261 Engineering Materials or Met 201 Elements of Materials Science 3
ME 262 Sophomore Lab 2
ME 313 Dynamic Modeling of Engineering Systems 3
ME 324 Dynamic Analysis in Machine Design 3
ME 330 Experimental Methods for Engineers 3
ME 340 Engineering Mechanics of Materials 3
ME 341 Intermediate Mechanics of Materials 3
ME 345 Heat Transfer 3
ME 391 Mechanical Engineering Seminar 1
ME 424 Mechanical Systems Design I 3
ME 425 Machine Component Design 3
ME 426 Mechanical Systems Design II 3
ME 430 Senior Laboratory 3
ME 435 Thermal Energy Systems Design 3
ChE 321 Engineering Thermodynamics & Heat Transfer 3
Chem 111 Principles of Chemistry I 4
CE 210 Engineering Statics 3
CE 320 Engineering Fluid Mechanics 3
CE 411 Engineering Fundamentals 0
EE 207 Introduction to Electrical Engineering 3
Engl 317 Technical & Engineering Report Writing 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
Phys 211, 212, 213 Engineering Physics I-II-III 12
Stat 301 Probability & Statistics 3
Humanities and social sciences electives, including one 300-400 level course from an approved list 16
Technical electives (see note 1 below) 12

The minimum number of credits for the degree is 130, not counting Engl 101, Math 143, and other courses that might be required to remove deficiencies.

A grade of C or better is required in each specified lower-division course before registration is permitted in upper-division engineering courses. The specific lower-division courses are: CE 210, Chem 111, EE 207, Engl 102, Math 170, 175, and 275, ME 101, 123, 220, 223, 261, and 262, Phys 211, 212, 213, and the basic science elective. In addition, a grade higher than C must be earned in at least five of these courses. A grade of P (pass) in any of these courses is considered as a C grade in satisfying this certification requirement.

NOTE (1): The 12 cr in technical electives must be selected subject to the following guidelines: (1) electives must be in approved upper-division courses (300-level or above); (2) a minimum of 9 cr must be taken from ME courses; (3) elective courses must be chosen so a minimum of four design units is achieved as follows: (a) one design unit: ME 412, 413, 422, 433, 443(s), 463; (b) two design units: ME 304, 409, 410, 427, 444, 451, 461, 472, 473, 476, 481.

Academic Minor Requirements

MANUFACTURING ENGINEERING MINOR

This minor is not accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Bus 370 Production/Operations Management 3
Bus 439 Systems & Simulation or Bus 456 Quality Management 3
Econ 202 Principles of Economics 3
ITED 253 Advanced Metals Manufacturing 3
ME 304 Materials Selection & Processing for Mechanical Design 3
ME 409 Human Factors in Engineering Design or ME 481 Control Systems 3
ME 410 Production Engineering 3
ME 476 Automation, Robotics, & Computer Integrated Manufacturing 3

Only two ME classes listed above may be used to fulfill requirements for a manufacturing engineering minor AND mechanical engineering technical electives.

Department of Metallurgical and Mining Engineering

Patrick R. Taylor, Dept. Head (203 McClure Hall. 83844-3024; phone 208/885-6376).

Metallurgy Faculty: Robert W. Bartlett, Sarit Bhaduri, Francis H. Froes, Batric Pesic, Keith A. Prisbrey, Patrick R. Taylor, T. Alan Place. Affiliate Faculty: Michael H. O'Brien, Richard N. Wright.

Mining Engineering Faculty: Robert Hautala, S. J. Jung, Martin L. Smith, Kenneth F. Sprenke, John R. Sturgul. Adjunct Faculty: Patricia L. Hautala, Stanley A. Miller, Jeffrey K. Whyatt.

Every country in the world has mineral resources that could be of benefit to its citizens. It is only upon the addition of the technological capability to convert these resources to mineral reserves, and finally into products useful to mankind, that the resources have value. Second only to agricultural resources are the mineral resources. Our modern world is a result of the technological utilization of these mineral resources. The advancement, or even continuation, of our present standard of living is dependent upon this technology.

Mining engineering includes a wide variety of mining technologies and engineering sciences devoted to the extraction or separation of the various mineral products—fuels, metals, and nonmetals. Separation of these minerals from the ground requires knowledge of the adaptation of equipment, manpower, and economics and the application of reclamation, environmental control, legal, social, and administrative talents. Mining engineering is the coordination of all engineering fields and the administrative talents employed in extracting these materials from the earth and making them available economically.

Metallurgical engineering is the technology devoted to removing the metals, nonmetals, or fuel elements from rock and even water and putting them in a form useful to mankind. This requires enhancement of the materials, separation of the minerals, and finally separation of the metals and elements from the minerals and rock into pure or semi-pure form economically. Metallurgical engineering involves the use of all the sciences and academic information from other fields to provide these metals for the everyday products we use in our industries and homes. It is the technology behind the materials that makes communication, transportation, recreation, daily living, and a healthful environment possible. More recently, a worldwide effort to develop new materials, with improved properties, has been met by new courses and research emphasis by the departmental faculty in the materials and processing area. Engineering training includes not only an emphasis on economics and technology, but on environment and safety concerns as well.

As technological and engineering fields, both metallurgical engineering and mining engineering offer a tremendous opportunity for the person who wishes to become involved in the application of our natural mineral resources to the preservation and enhancement of man. The department provides the technical training for the beginning of this understanding through both the mining engineering and metallurgical engineering fields.

It is the goal of the department to provide first-class training so that the engineer graduating from the department will be competitive with all other engineers with equivalent degrees in the world, will be current in the technology, will have a practical orientation, and will be a broad and understanding member of the society. Department objectives include developing our students to: delineate and solve problems that are susceptible to engineering treatment; be sensitive to socially related technical problems; understand the ethical characteristics of the engineering profession and practice; understand the engineer's responsibility to both occupational and public health and safety; and have the ability to maintain professional competence through life-long learning.

The department has a student assessment program that is updated yearly and is available as a publication from the department. This assessment includes a compilation of information that allows prospective students and interested parties to review the ability of the department to reach these objectives. Included in the assessment program are numerical scores for various exit survey questions, data from our graduates, and summaries of other performance criteria.

History shows that the graduates from the program have been very competent citizens able to contribute to the development of the mineral resource engineering fields, have become excellent and leading members of society, and live useful and fulfilling lives.

Laboratories for the technologies of rock mechanics, surveying, ventilation, and computer applications in simulation, optimization, and mine planning are available in mining engineering. The laboratory facilities for metallurgical engineering include: comminution and particulate processing; transport phenomena and reactor design; hydro-, pyro- and electro-processing of materials; microstructure and physical metallurgy; and advanced materials processing (including plasma processing, mechanical alloying, combustion synthesis, and other state of the art technologies), and characterization (including TEM, SEM, TGA/DTA, etc.). These laboratories provide an understanding of the technology required to convert minerals into useful metals and products.

The staff members in both disciplines have proved their qualifications by their credentials in national and international professional societies. They are well known by their publications, research, and contract work. Exposure to these faculty members provides the students with a one-to-one interaction and an expertise that makes them truly competitive.

The program is designed to take advantage of the other excellent facilities of the university and other engineering disciplines. The program of study also includes involvement with practical aspects of day-to-day mining and metallurgy by exposure to the regional industries and research groups through field trips, guest speakers, study problems, and work time during the summer or cooperative efforts as desired. Mining and metallurgical operations in the Northwest are plentiful and modern.

In normal times, most students find employment in the summer or on a cooperative basis, so that they can become more intimately involved in the processes that they are studying. The total program enables the person to leave the university with confidence, either as a baccalaureate student or on the master's or doctoral level, with the capability of a truly competent professional.

The department offers both the Master of Science degree and the doctoral degree in both of the disciplines. These programs include a mix of theoretical and practical study most appropriate to each student. Many studies include mathematical, statistical, and computer applications to specific processes or investigations. Some students prefer to work on applied problems that are presented by industry or research establishments in the area, often with funding from outside sources. Studies may be as varied as individual effort and interests.

These studies may be financed at times by research grants, an industry sponsor, or on rare occasions by departmental funding. They are designed to train the individual in research methods and investigative procedures that will enhance his or her ability in industrial or research applications or in teaching at a later date. The doctoral program is directed toward breaking new ground and advancing the field to maintain the competitive technological lead enjoyed in the U.S. for so many years. The master's program generally requires 12 to 18 months beyond the baccalaureate degree and the doctoral program usually entails at least three years beyond the baccalaureate degree.

Courses

See part 6 for courses in Metallurgical Engineering (Met), Mining Engineering (Min), and Mining Engineering-Metallurgy (MnMt).

Curricular Requirements

METALLURGICAL ENGINEERING (B.S.Met.E.)

As part of a cooperative program with Oregon State University, Oregon resident students may enroll in this program and will NOT be charged out-of-state tuition by UI.

Note: All students are encouraged to take the eight-hour EIT examination the last semester of their senior year, leading to a Professional Engineering license.

Required course work includes the university requirements (see regulation J-3) and the following:

Met 101 Intro to Metallurgy & Materials Science	1
Met 201 Elements of Materials Science or ME 261 Engineering Materials	3
Met 202 Microstructural Evaluation	2
Met 211 Metallurgical Mass & Energy Balance	3
Met 308 Metallurgical Thermodynamics	3
Met 309 Metallurgical Transport Phenomena	3
Met 310 Metallurgical Reactor Design	3
Met 313, 316 Physical Metallurgy I, II	7
Met 341 Particulate Materials Processing	4
Met 344 Hydroprocessing of Materials	4
Met 405 Design of Unit Operations & Flowsheets	3
Met 407 Materials Fabrication	3
Met 414 Process Design	3
Met 415 Materials Selection & Design	3
Met 442 Pyroprocessing of Materials	4
Chem 111 Principles of Chemistry I	4
Chem 113 Inorganic Chem & Qual Analysis or 112 Prin of Chem II	4-5
Chem 305 Physical Chemistry	3
CE 210 Engineering Statics	3
CS 112 Introduction to Problem Solving & Programming or 105 FORTRAN Programming for Engineers	2-3

EE 207 Introduction to Electrical Engineering 3
Engl 317 Technical & Engineering Report Writing 3
Geol 260 Survey of Minerals 2
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
ME 101 Engineering Graphics 2
ME 340 Engineering Mechanics of Materials 3
Min 352 Project Investment Analysis & Management 3
Phys 211, 212 Engineering Physics I, II 8
Stat 301 Probability & Stat or CE 402 Applied Numerical Methods for Engineers 3
Humanities and social science electives—must satisfy regulation J-3 and ABET criteria and include at least (1) one upper-division course that is the second course completed in that subject or (2) a course that has another humanities/social science course as a prerequisite 18
Technical electives 3
Science electives 3

The minimum number of credits for the degree is 133, exclusive of Engl 101 and mathematics courses numbered lower than Math 170.

MINING ENGINEERING (B.S.Min.E.)

As part of a cooperative program with Oregon State University, Oregon resident students may enroll in this program and will NOT be charged out-of-state tuition by UI.

Note: Approved field experience, appropriate summer employment, or an applied course in mine surveying and geologic mapping is recommended before graduation. All students are encouraged to take the eight-hour EIT examination the last semester of their senior year, leading to a Professional Engineer license.

Required course work includes the university requirements (see regulation J-3) and the following:

Min 103 Elements of Mining 3
Min 118 Miner Safety Training 1
Min 230 Computer Applications in Mining II 2
Min 290 Mine Development 2
Min 351 Optimization of Engineering Systems 3
Min 352 Project Investment Analysis & Management 3
Min 370 Mine Services 2
Min 372 Mine Ventilation 3
Min 401, 402 Rock Mechanics & Lab 5
Min 450 Surface Mine Design 2
Min 451 Underground Mine Design 3
Min 452 Surface Mine Design Lab 1
Min 454 Advanced Geologic & Mine Modeling 3
Min 491 Pre-feasibility Study 2
ChE 321 Engineering Thermodynamics & Heat Transfer 3
Chem 111, 112 Principles of Chemistry I-II 4
CE 210 Engineering Statics 3
CE 211 Engineering Measurements 4
CE 320 Engineering Fluid Mechanics 3
EE 207 Introduction to Electrical Engineering 3
Engl 317 Technical & Engineering Report Writing 3
Geol 111 Physical Geology for Science Majors 4
Geol 260 Survey of Minerals 2
Geol 261 Survey of Rocks 2
Geol 345 Structural Geology 3
GeoE 435 Geological Engineering Principles 3
Math 170, 175, 275 Analytic Geometry & Calculus 11
Math 310 Ordinary Differential Equations 3
ME 101 Engineering Graphics 2
ME 220 Engineering Dynamics 3
ME 340 Engineering Mechanics of Materials 3
Met 205 Introduction to Metallurgy 3
Phys 211, 212 Engineering Physics I, II 6
Stat 301 Probability & Statistics 3
Humanities and social sciences electives—must satisfy regulation J-3 and ABET criteria and include at least (1) one upper-division course that is the second course completed in that subject or (2) a course that has another humanities/social science course as a prerequisite 17-18
Technical electives (approved by dept) to total 136 credits for the degree ..... -

The minimum number of credits for the degree is 136, exclusive of Engl 101 and mathematics courses numbered lower than Math 170.

Academic Minor Requirements

METALLURGICAL ENGINEERING MINOR

Met 309 Metallurgical Transport Phenomena 3
Met 310 Metallurgical Reactor Design 3
CE 210 Engineering Statics 3
Math 310 Ordinary Differential Equations 3
ME 261 Engineering Materials 3
And one of the following sets of courses:
- Met 202 Microstructural Evaluation 2
  Met 313, 316 Physical Metallurgy I & II 7
  Phys 232 Engineering Physics II 3
  or
  Met 211 Metallurgical Mass & Energy Balance 3
  Met 341 Particulate Materials Processing 4
  Met 344 Hydroprocessing of Materials 4
  Chem 113 Inorganic Chem & Qual Analysis or 112 Prin of Chem II 4-5

MINING ENGINEERING MINOR

Min 103 Elements of Mining 3
Min 118 Miner Safety Training 1
Min 401 Rock Mechanics 3
Min 450 Surface Mine Design 2
Min 452 Surface Mine Design Lab 1
Courses selected from the following 8
- Min 304 Explosives
- Min 352 Project Investment Analysis & Management
- Min 370 Mine Services
- Min 372 Mine Ventilation
- Min 451 Underground Mine Design
- Min 472 Mineral Industry Case Studies
- Min 491 Pre-feasibility Study

Department of Microbiology, Molecular Biology and Biochemistry

Donald C. Robertson, Dept. Head (142 Life Sc. Bldg 83844-3052; phone 208/885-7966). Faculty: Kenneth W. Bayles, Carolyn H. Bohach, Gregory A. Bohach, Allan B. Caplan, Zhixiang Chen, Donald L. Crawford, Ronald L. Crawford, Daniel J. Guerra, Patricia L. Hartzell, Richard C. Heimsch, Scott T. Kellogg, Al J. Lingg, Bruce L. Miller, Scott A. Minnich, Donald C. Robertson, William R. Trumble, Phillip A. Youderian. Adjunct Faculty: Philip H. Berger, Alton G. Campbell, Guy R. Knudsen, Matthew Morra, R. Francis Rosenzweig, Clifford F. Weil. Affiliate Faculty: William A. Apel, Debonny Barsky-Shoaf, Frederick S. Colwell, Robert W. Ellis, Nancy A. Federspiel, James K. Fredrickson, Frederick Leung, David R. Quigley, Francisco F. Roberto, Robert D. Rogers, Robert Rychert, Dennis L. Stevens, Daphne L. Stoner, Thomas Ward, Marcia Wicklow-Howard, James H. Wolfram.

Microbiology is concerned with the study of microscopic forms of life, their distribution, importance, and role in such diverse areas as control and diagnosis of diseases, agricultural biotechnology, environmental and pollution control, and genetic engineering.

Molecular biology and biochemistry is the study of the molecular basis of life, the chemical, physical, and genetic properties of living things, their metabolic processes, and the new technologies for the genetic engineering of organisms.

The Department of Microbiology, Molecular Biology and Biochemistry offers the degrees of Bachelor of Science in Microbiology and Bachelor of Science in Molecular Biology and Biochemistry. The microbiology degree is offered in both the College of Agriculture and the College of Letters and Science while the degree in molecular biology and biochemistry is offered through the College of Agriculture. Students may choose to emphasize general microbiology or molecular biology and biochemistry by appropriate choices of courses. In addition, the department offers the degree of Bachelor of Science in Medical Technology for students who have earned the Bachelor of Science in Microbiology at UI and have completed medical technology training in an accredited hospital school. In each case, the curriculum emphasizes the need for a broad cultural base and specific training in biology, chemistry, mathematics, and physics, in addition to courses in the specialty area. Well-equipped laboratories are available and advanced students are encouraged to undertake research problems with the faculty. The department also provides courses for students who are majoring in other areas of the university and wish to obtain increased understanding of the sciences. Students are invited to inquire about academic minors in the department.

The department also offers the M.S. and Ph.D. degrees in microbiology, molecular biology and biochemistry. Excellent facilities are available for graduate studies and research. Research interests of the faculty include immunology and immunoregulation, microbial pathogenesis, membrane biochemistry, microbial ecology, microbial physiology, molecular biology and genetics, nucleic acids (including recombinant DNA), and plant biochemistry. Students should contact the department or individual faculty members and consult the *Graduate Catalog* for additional details and information concerning graduate assistantships.

Courses

See part 6 for courses in Microbiology, Molecular Biology and Biochemistry (MMBB).

Curricular Requirements

MICROBIOLOGY (B.S.Microbiol. or B.S.)

The major in microbiology is offered through either the College of Agriculture (B.S.Microbiol.) or the College of Letters and Science (B.S.). The undergraduate curriculum in microbiology prepares students for interesting and challenging careers in biotechnology, public health, medical technology, and a broad spectrum of industry, government, and agricultural research laboratories. It is also an excellent curriculum for those intending to apply to an array of graduate programs in the biological sciences or professional programs in dentistry, medicine, or veterinary medicine.

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.S. degree if applicable, and:

MMBB 250 General Microbiology 5
MMBB 380, 382 Introductory Biochemistry & Lab 4
MMBB 400 Seminar 1
MMBB 409, 410 Immunology & Laboratory 5
MMBB 460 Microbial Physiology 5
MMBB 490 Senior Thesis & Research 2-4
One of the following microbiology electives 3-5
- MMBB 416, 417 Food Microbiology & Lab
- MMBB 412, 413 Pathogenic Microbiology & Lab
- MMBB 420 Epidemiology
- MMBB 425 Microbial Ecology
- MMBB 481, 483 Virology & Lab

Biol 201 Introduction to the Life Sciences 4
Biol 351 General Genetics 3
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 277, 278 Organic Chemistry I & Lab 4
Chem 372, 376 Organic Chemistry II & Lab 5
Engl 317 Tech & Engr Report Writing or 207 Persuasive Writing or 208 Personal & Exploratory Writing or 209 Inquiry-Based Writing 3
Math 160 Survey of Calculus or Math 170 Analytic Geometry & Calculus I 4
Phys 111-112 General Physics I-II 8
Stat 251 Principles of Statistics 3
Humanities and social sciences electives 14
Science electives 12
Electives to total 128.cr for the degree ..... —

MEDICAL TECHNOLOGY

The medical technologist performs critical laboratory tests and analytical procedures that aid physicians in the diagnosis and treatment of disease. The curriculum is of interest to students desiring professional careers in hospital and clinical laboratories, public health and research laboratories, and pharmaceutical laboratories.

Students who wish to apply for clinical training in medical technology at an accredited hospital will be required to take Zool 120 and 121. Upon completion of the B.S. degree in microbiology (medical technology option), those students who successfully complete 32 credits (MMBB 421) in a 12-month training course at an accredited hospital school of medical technology with a curriculum including clinical bacteriology, medical mycology, parasitology, clinical chemistry, toxicology, urinalysis, hematology, immunology-serology, immunohematology, and clinical correlations will be awarded the B.S. degree with major in medical technology. This second degree option is open only to students who have earned the B.S. in microbiology at UI.

MOLECULAR BIOLOGY AND BIOCHEMISTRY (B.S.M.B.B.)

The major in molecular biology and biochemistry is offered through the College of Agriculture. Molecular biology and biochemistry are two of the fastest growing research areas in modern biological sciences. Students training in this area will be prepared for a number of technical professions in various aspects of biotechnology including laboratory positions in health, medicine, agriculture, and food processing industries. In addition, a B.S. degree in molecular biology and biochemistry is excellent preparation for further graduate and professional training in the biological and medical sciences.

Required course work includes the university requirements (see regulation J-3) and:

MMBB 250 General Microbiology 5
MMBB 380, 382 Introductory Biochemistry & Lab 4
MMBB 400 Seminar 1
MMBB 431 Recombinant DNA Laboratory 2
MMBB 480 Biochemistry & Molecular Biology 3
MMBB 488 Genetic Engineering 3
MMBB 490 Senior Thesis & Research 2-4
Biol 201 Introduction to the Life Sciences 4
Biol 351 General Genetics 3
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 277, 278 Organic Chemistry I & Lab 4
Chem 302 Principles of Physical Chemistry 3
Chem 372, 376 Organic Chemistry II & Lab 5
Engl 317 Tech & Engr Report Writing or 207 Persuasive Writing or 208 Personal & Exploratory Writing or 209 Inquiry-Based Writing 3
Math 160 Survey of Calculus or Math 170 Analytic Geometry & Calculus I 4
Phys 111-112 General Physics I-II 8
Stat 251 Principles of Statistics 3
One of the following physiology electives 4-6
- MMBB 460 Microbial Physiology
- Bot 311 Plant Physiology
- Zool 414 Cell Physiology

One of the following molecular biology and biochemistry electives 3-5
- MMBB 409, 410 Immunology & Lab
- MMBB 412, 413 Pathogenic Microbiology & Lab
- MMBB 481, 483 Virology & Lab
- MMBB 486 Plant Biochemistry
- Bot 452 Principles of Plant Molecular Biology

Science electives 12
Electives to total 128 credits for the degree ..... —

Academic Minor Requirements

BIOCHEMISTRY MINOR

MMBB 380 Introductory Biochemistry 3
MMBB 480 Biochemistry & Molecular Biology 3
Courses selected from the following 12
- MMBB 382 Intro Biochem Lab or 484 Biochem Lab (1 or 2 cr)
- MMBB 400 Seminar (2 cr)
- MMBB 401 Undergrad Research (1-4 cr)
- MMBB 486 Plant Biochemistry (3 cr)
- Chem 302, 303 Principles of Physical Chemistry & Lab (or equiv) (4 cr)

MICROBIOLOGY MINOR

MMBB 250 General Microbiology 5
MMBB 380 Introductory Biochemistry 3
Courses selected from the following 10
- MMBB 409 Immunology
- MMBB 410 Immunology Lab
- MMBB 412 Pathogenic Microbiology
- MMBB 413 Pathogenic Microbiology Lab
- MMBB 431 Recombinant DNA Laboratory
- MMBB 460 Microbial Physiology
- MMBB 488 Genetic Engineering

MOLECULAR BIOLOGY AND BIOCHEMISTRY MINOR

MMBB 380 Introductory Biochemistry 3
MMBB 480 Biochemistry & Molecular Biology 3
Courses selected from the following 12
- MMBB 382 Introductory Biochemistry Lab
- MMBB 431 Recombinant DNA Laboratory
- MMBB 486 Plant Biochemistry
- MMBB 488 Genetic Engineering
- Chem 302 Principles of Physical Chem or 305, 306 Physical Chem

Up to two of the following physiology courses 3-6
- MMBB 460 Microbial Physiology
- Bot 311 Plant Physiology
- Zool 414 Cell Physiology

Department of Military Science

Gary W. Kosinuk, Dept. Head (West End, Mem. Gym. 83844-2424; phone 208/885-6528). Faculty: Louis J. Haynes, Peter M. King, Gary W. Kosinuk, Michael D. Shapiro, Jerry H. Weaver.

Army ROTC, as represented at UI by the Department of Military Science, is the major source of commissioned officers for the U.S. Army. After successfully completing the program and baccalaureate degree requirements in almost any field, the student receives a commission as a second lieutenant. At this time active duty is not a requirement but is something for which students compete. Graduates also choose from among 26 different branches or specialties. Those not choosing active duty serve with the Army Reserves or Army National Guard on a part-time basis. Two-, three-, and four-year scholarships are available.

All levels of course work combine classroom instruction with practical exercises. The basic course, consisting of a one-credit course each freshman semester and a two-credit course each sophomore semester, is designed to provide men and women with information on opportunities as an officer in the Army on active duty or in the National Guard or Army Reserve. The two-year basic curriculum covers Army career opportunities, confidence building exercise, map reading, leadership, management principles, first aid, and other life skills with broad applications beyond the military. Students may voluntarily participate in one of several adventure activities (rappelling, rifle marksmanship, white water rafting, downhill skiing, etc.). Basic-course students, other than scholarship students, do not make a military commitment during this period. These students survey Army opportunities and decide whether to continue in the program as advanced-course students.

The advanced course consists of a three-credit course normally taken each semester during the last two years of university study and includes a six-week advanced camp at Fort Lewis, Washington (normally after the junior year). Students in the advanced course receive monthly stipends of $150 during the school year. Study centers on leadership styles and techniques with special emphasis placed on small-unit leadership.

The primary objective of the Army ROTC program is to develop leadership and management skills in students. Supplementary objectives include enhancement of the student's abilities in speaking and writing, goal seeking, and problem solving. Key to the program is the development of personal attributes essential to military service. Those attributes include sound situational assessment, decision making, and the ability to know, understand, and lead people. Additionally, the department hopes to cultivate within its students a strong sense of personal integrity, self-discipline, and responsibility.

Prior to commissioning, all cadets must demonstrate proficiency in written communications, human behavior, military history, computer literacy, and math reasoning. This may be achieved through taking UI course offerings in those subject areas. See your Army ROTC class adviser for a list of approved courses.

Departmental members will answer questions about specific programs and courses. Contact the department by going to the west end of Memorial Gymnasium or by calling 208/885-6528 (collect if out of state).

Courses

See part 6 for courses in Military Science (MS).

Lionel Hampton School of Music

Richard R. Hahn, Director (205 Music Bldg. 83844-4015; phone 208/885-6231; e-mail music@uidaho.edu). Faculty: Carol Padgham Albrecht, Dorothy T. Barnes, Lois Blackburn, Daniel J. Bukvich, J. Roger Cole, Robert Dickow, Mary H. DuPree, Alan J. Gemberling, Richard R. Hahn, Ronald J. Klimko, J. Cameron Littlefield, G. Jay Mauchley, Sandra Mauchley, Robert T. McCurdy, Robert W. Miller, Richard S. Neher, James E. Reid, Michael Russell, Lynn J. Skinner, Robert J. Spevacek, William C. Wharton, J. Jerry Yonkman.

The Lionel Hampton School of Music, so designated in 1987 in honor of the eminent American jazz musician, is an accredited institutional member of the National Association of Schools of Music. Established as a department in 1893, it was elevated to school status in 1969.

The courses and curricula in music seek to prepare elementary, secondary, and college teachers of music; to train professional musicians; to enrich the cultural environment for students and provide liberal-arts instruction; and to engage in research in music performance and teaching for the general benefit of the public and the discipline of music.

Students in this school learn by performing, listening, analyzing, and creating music. Emphasis is on the understanding of musical styles and techniques of all eras, including contemporary music. Musical studies balance the aesthetic and the practical, with ample opportunity for exploration and self-reliance.

The formal undergraduate curricula of the School of Music consist of degree programs in the following areas:

Bachelor of Music in Performance
: Specialization in voice, piano, guitar, or any orchestral instrument.

Bachelor of Music in Composition

Bachelor of Music in Music Education
: Specialization in elementary music education, vocal music education, instrumental music education, or a combined program in vocal and instrumental music education.

Bachelor of Music in Business
: Specialization in performance or composition combined with studies in accounting, economics, statistics, management, and marketing.

Bachelor of Arts in Music
: Emphasis in music theory, music history, or applied music. Applied music study can be in any of the areas of specialty listed under the Bachelor of Music in Performance.

The B.Mus. degree is professionally oriented, and is the normal preparation for graduate study in music or for teacher education. The B.A. degree emphasizes a broad liberal-arts education. The School of Music also offers a minor in music and participates in the university core curriculum by offering the course "Survey of Music." The ensembles and performing groups sponsored by the School of Music are open to all students, regardless of major.

The Music Building houses the Agnes Crawford Schuldt Music Library, faculty studios, ensemble rehearsal areas, classrooms, a music education materials center, a listening center, and a recital hall. Individual practice rooms are available in nearby Ridenbaugh Hall. Recording, radio-television, language listening lab, and computer facilities of the campus are also used by music students. In addition to organ, harpsichord, harp, and piano practice instruments, the school maintains two performance pipe organs, three concert grand pianos, and a concert harpsichord.

The Hampton School offers degrees at the master's level; Master of Music degrees are available in music education, performance (vocal and instrumental), composition, accompanying, and piano pedagogy and performance studies. The Master of Arts option is in music history.

Courses

See part 6 for courses in Applied Performance Studies (MusA), Theory and Composition (MusC), History and Literature (MusH), Music Teaching (MusT), General (MusX).

Curricular Requirements

General Requirements for All B.A. and B.Mus. Degrees

Minimum Grade Requirement. A music student, either major or minor, must achieve a minimum grade of C in each music course, either resident or transfer, which is applicable to a degree program in music before the student will be eligible for graduation.

Ensemble Participation. An undergraduate music major must: (1) earn a minimum of eight credits in ensemble participation to be eligible for graduation and (2) enroll in an ensemble during each semester of full-time study. Various requirements are contained in the specific curricula. For curricular purposes, "large ensemble" is defined to mean MusA 117/317, 119/319, 121/321, 316, 320, or 322. Other ensembles (listed in some curricula under "Chamber Music") consist of MusA 118/318, 315, 323, 365, and 380. For students in the B.A. in Applied Music or the B.Mus. in Music: Business, the following minimum requirements apply depending on the primary applied area of the student:

Orchestral Instrument: six credits in instrumental large ensemble and two additional credits in any instrumental ensemble.

Voice: six credits in vocal large ensemble and two additional credits in any vocal ensemble.

Keyboard: two credits in any large ensemble, four credits in MusA 315, and two credits in MusA 365.

Guitar: four credits in any large ensemble and four credits in MusA 365-02 Chamber Ensemble: Guitar Ensemble.

Keyboard Proficiency. Minimum keyboard proficiency for all music majors is met by satisfactory completion of MusA 145-146, 245-246, Piano Class, or by passing a keyboard proficiency examination.

Convocation-Recital Attendance. Because listening experiences constitute an area of major importance in the study of music, all music majors and music minors are required to register for MusX 140, Convocation; music majors must attend 10 recitals per semester for seven semesters and music minors must attend 10 recitals per semester for two semesters. Recital credit will not be granted for those performances in which a student participates. In addition, music majors must attend the weekly convocation series (studio class, area recital, and convocation). Transfer students are expected to enroll in MusX 140 during their first registration, and to receive a passing grade in a specific number of semesters (to be determined when the student's program is set up). Students must attend a full concert or program in order for it to be counted toward convocation-recital requirements.

Upper-Division Standing (UDS). For an undergraduate music major to enroll in MusA 324 or 334, or for a composition major to enroll in MusC 325, the student must have passed the requirements of the major area; this involves a special jury examination and demonstration of mastery of the fundamentals of the student's major area of performance/composition and the potential to continue improving in a manner that will lead to the successful completion of performance/composition requirements of the degree and major emphasis.

In order to register for upper-division music education courses (not including instrumental techniques courses), an undergraduate music education major must: (1) make application to upper-division music education courses by completing and submitting an application form (available in the music office) to the chair of the Music Education Committee—this should be done in the semester in which the student is enrolled in MusT 201; (2) successfully complete ED 201 and MusT 201 and the necessary core courses to meet the requirements of the application to Teacher Education in the College of Education; (3) obtain a "C" or better in music courses and at least a 2.5 overall GPA; (4) pass the individual instruction upper-division standing jury; and (5) interview with the music education faculty at the end of the semester in which the student is enrolled in MusT 201.

Diagnostic Exam in Theory and Aural Skills. The goal of this exam is to advise students regarding deficiencies in their prior theory training; this exam is not available to freshmen. A study guide is available in the music office. The exam is given during the first week of classes each semester, as needed. It is in four parts, one covering each semester of the theory/aural skills sequence. The exam will not be used for "advanced placement" or "credit by examination," as the regulations regarding these procedures are covered in regulation D-4 in Part 3. Written evaluation of each student's achievement will be placed in his or her advising file, and the student will be counseled appropriately.

MUSIC: APPLIED MUSIC (B.A.)

Required course work includes the university requirements (see regulation J-3), the L & S requirements for the B.A. or B.S. degree, and:

MusA 124 Individual Instruction (major instrument or voice) 8
MusA 324 Individual Instruction (major instrument or voice) 8
MusA 145-146, 245-246 Piano Class 4
MusA 490 Recital (half) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusX 140 Convocation (seven semesters) 0
MusA ensembles (in eight different semesters) 8
Electives to total 128 cr for the degree (incl at least 73 cr in nonmusic courses) ..... —

MUSIC: HISTORY AND LITERATURE (B.A.)

Required course work includes the university requirements (see regulation J-3), the L & S requirements for the B.A. or B.S. degree, and:

MusA 114 Individual Instruction 4
MusA 314 Individual Instruction (one instrument/voice) 4
MusA 145-146, 245-246 Piano Class 4
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusX 140 Convocation (seven semesters) 0
Upper-division MusH electives 6
Upper-division MusC elective 2
MusA ensembles (in eight different semesters) 8
Electives to total 128 cr for the degree (incl at least 73 cr in nonmusic courses) ..... —

MUSIC: THEORY (B.A.)

Required course work includes the university requirements (see regulation J-3), the L & S requirements for the B.A. or B.S. degree, and:

MusA 114 Individual Instruction 4
MusA 314 Individual Instruction (one instrument/voice) 4
MusA 145-146, 245-246 Piano Class 4
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusX 140 Convocation (seven semesters) 0
Upper-division MusC electives 8
MusA ensembles (in eight different semesters) 8
Electives to total 128 cr for the degree (incl at least 73 cr in nonmusic courses) ..... —

MUSIC: INSTRUMENTAL PERFORMANCE (B.Mus.)

Required course work includes the university requirements (see regulation J-3) and the specific requirements in one of the two sections below. It is strongly recommended and in some cases required that instrumentalists elect pedagogy courses appropriate to their major fields.

A. KEYBOARD

Note: Keyboard majors must pass the class piano proficiency exam or register for the appropriate level of class piano until the proficiency exam is passed.

MusA 134 Individual Instruction 12
MusA 334 Individual Instruction 12
MusA 315 Accompanying 4
MusA 365 Chamber Ensemble 2
MusA 387 Conducting I 2
MusA 454 Performance Practices 2
MusA 490 Recital (half) 0
MusA 491 Recital (full) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 331 Counterpoint 3
MusC 442 Musical Analysis 2
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusH 451 Repertoire: Keyboard 4
MusT 435 Pedagogy & Materials: Keyboard 4
MusX 140 Convocation (seven semesters) 0
Music history elective 3
Large ensemble (two different semesters chosen from MusA 117, 119, 121, 316, 317, 319, 320, 321, 322) 2
Music electives to complete 84 cr in music 5
Electives to total 128 cr for the degree ..... —

B. ORCHESTRAL INSTRUMENTS OR GUITAR

Note: MusT 435, Pedagogy and Materials: Guitar (2 cr), is required of guitar majors.

MusA 134 Individual Instruction 12
MusA 334 Individual Instruction 12
MusA 145-146, 245-246 Piano Class 4
MusA 387 Conducting I 2
MusA 454 Performance Practices 2
MusA 490 Recital (half) 0
MusA 491 Recital (full) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 331 Counterpoint 3
MusC 442 Musical Analysis 2
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusH 451 Repertoire 2
MusX 140 Convocation (seven semesters) 0
Music history elective 3
Large ensemble (eight different semesters chosen from MusA 121, 320, 321, 322) (4 cr in four different semesters reqd for guitar majors, who may also chose from MusA 117, 119, 316, 317, 319) 8
Chamber music (two different semesters chosen from MusA 323, 365) (4 cr in four different semesters of MusA 365: Guitar Ensemble, reqd for guitar majors) 2
Music electives to complete 84 cr in music 5
Electives to total 128 cr for the degree ..... —

MUSIC: VOCAL PERFORMANCE (B.Mus.)

Required course work includes the university requirements (see regulation J-3) and:

MusA 134 Individual Instruction 12
MusA 334 Individual Instruction 12
MusA 145-146, 245-246 Piano Class 4
MusA 380 Opera Workshop 2
MusA 387 Conducting I 2
MusA 454 Performance Practices 2
MusA 490 Recital (half) 0
MusA 491 Recital (full) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 331 Counterpoint 3
MusC 442 Musical Analysis 2
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusH 451 Repertoire: Voice 2
MusT 435 Pedagogy & Materials: Voice 2
MusX 140 Convocation (seven semesters) 0
Foreign language (two years of one language or one year each of two languages) 16
Music history elective 3
Large ensemble (six different semesters chosen from MusA 117, 316, 317) 6
Chamber music (two different semesters chosen from MusA 118, 318, 365) 2
Music electives to complete 84 cr in music 3
Electives to total 128 cr for the degree ..... —

MUSIC: COMPOSITION (B.Mus.)

Required course work includes the university requirements (see regulation J-3) and:

MusA 114 Individual Instruction (if major performing medium is other than piano, piano is suggested for the minor area) 2
MusA 124 Individual Instruction 8
MusA 324 Individual Instruction 4
MusA 145-146, 245-246 Piano Class 4
MusA 387 Conducting I 2
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 325 Composition 4
MusC 327 Orchestration 3
MusC 331 Counterpoint 3
MusC 425 Advanced Composition 4
MusC 426 Electronic Music 2
MusC 428 Choral Arranging 2
MusC 442 Musical Analysis 2
MusC 490 Recital 0
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusX 140 Convocation (seven semesters) 0
Music history elective 3

Large ensemble (eight different semesters chosen from MusA 117, 119, 121, 316, 317, 319, 320, 321, 322) 8
Chamber music (two different semesters chosen from MusA 118, 318, 323, 365) (one semester of MusA 315, Accompanying, is reqd of students whose major applied medium is keyboard) 2
Music electives to complete 84 cr in music 4
Electives to total 128 cr for the degree ..... —

MUSIC: BUSINESS (B.Mus.)

Required course work includes the university requirements (see regulation J-3) and:

MusA 124 Individual Instruction 8
MusA 324 Individual Instruction 8
MusA 145-146, 245-246 Piano Class 4
MusA 387 Conducting I 2
MusA 490 Recital (half) 0
MusA ensemble (specific requirements vary by area) 8
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC elective at the 300 or 400 level 2-3
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusH elective at the 400 level 2-3
MusX 140 Convocation (seven semesters) 0
Music electives (to total 64 credits in music) 1-3
Acct 201 Introduction to Financial Accounting 3
Acct 202 Introduction to Managerial Accounting 3
Bus 301 Financial Management 3
Bus 311 Introduction to Management 3
Bus 321 Marketing 3
Two of the following courses 6
BLaw 265 Legal Environment of Business
Bus 324 Consumer Behavior
Bus 325 Retail Distribution Management
Bus 327 Services/Nonprofit Marketing
Bus 412 Human Resource Management
Bus 413 Organizational Behavior
ComG 101 Fundamentals of Public Speaking 2
Econ 201-202 Principles of Economics 6
Stat 251 Principles of Statistics 3

Note: Students who wish to emphasize composition must: (1) substitute four credits of MusC 325, Composition, for four credits of MusA 324; (2) take four credits of MusC 425, Advanced Composition, as their upper-division theory elective, and (3) substitute MusC 490, Recital, for MusA 490, Recital.

MUSIC EDUCATION: VOCAL (B.Mus.)

NOTE: For registration in upper-division courses in education, students must have been admitted to the teacher education program and maintain a GPA of 2.5. For admission criteria, refer to "Admission to the Teacher Education Program" in the College of Education section of part four of this catalog.

Comprehensive Exit Exam. Students in this degree program take a comprehensive exam consisting of questions solicited from those faculty members who teach the respective music education courses. This exam is administered as a part of MusT 445, Proseminar in Music Teaching. Students are given the complete list of questions, from which the test questions will be drawn, at least three weeks before the announced date of the exam. The completed tests are evaluated by the music education faculty; where questions arise about the quality of one or more responses, the faculty member who submitted the question is asked for his or her input. Each student must successfully complete the comprehensive exam before being permitted to student teach. If unsuccessful, the student may repeat the test as many times as necessary to pass.

Required course work includes the university requirements (see regulation J-3) and completion of one of the two sections below:

A. PREPARATION FOR JR.-SR. HIGH SCHOOL MUSIC TEACHING

MusA 114 Individual Instruction (voice for piano majors; piano for voice majors)* 4
MusA 314 Individual Instruction (voice for piano majors; piano for voice majors)* 2
MusA 124 Individual Instruction 8
MusA 324 Individual Instruction 6
MusA 145-146, 245-246 Piano Class 4
MusA 151 or 152 Guitar Class 1
MusA 380 Opera Workshop 1
MusA 387, 487 Conducting I, II 4
MusA 490 Recital (half) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 428 Choral Arranging 2
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusT 201 Introduction to Music Teaching 1
MusT 381 Elementary School Music Methods I 3
MusT 383 Principles of Music Teaching 3
MusT 385 Choral Music in the Secondary School 2
MusT 432 Practicum: Music Teaching 14
MusT 435 Pedagogy & Materials: Voice 2
MusT 445 Proseminar in Music Teaching 2
MusT 485 Choral Ensemble Rehearsal Techniques 1
MusX 140 Convocation (seven semesters) 0
MusX 283-284 Diction for Singers 4
ED 201 Introduction to Teaching 2
ED 312 Educational Psychology 2
ED 313 Educational Measurement 1
ED 314 Strategies for Teaching 3
EDTE 463 Literacy Methods for Content Learning 3
Psyc 101 Introduction to Psychology 3
Large ensemble (six different semesters chosen from MusA 117, 316, 317) 6
Other ensemble (one semester chosen from MusA 117, 118, 316, 317, 318, 365, 380) (two semesters of MusA 315, Accompanying, is reqd of students whose major performing medium is keyboard) 1-2

*Keyboard majors must pass the piano class proficiency exam or register for the appropriate level of piano class until the piano class proficiency exam is passed. Voice majors must register for piano class (or pass the proficiency exam) before enrolling in applied piano instruction; any combination of piano class or applied piano (MusA 114/314) should equal a minimum of six credits. If the major instrument is other than voice, a minimum of six credits is required in any combination of class voice (MusA 147-148) or applied voice (MusA 114/314).

B. PREPARATION FOR ELEMENTARY SCHOOL MUSIC TEACHING

MusA 114 Individual Instruction (voice for piano majors; piano for voice majors)* 4
MusA 314 Individual Instruction (voice for piano majors; piano for voice majors)* 2
MusA 124 Individual Instruction 8
MusA 324 Individual Instruction 6
MusA 145-146, 245-246 Piano Class 4
MusA 151 or 152 Guitar Class 1
MusA 387 Conducting I 2
MusA 490 Recital (half) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 428 Choral Arranging 2
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusT 201 Introduction to Music Teaching 1
MusT 381, 481 Elementary School Music Methods I, II 6
MusT 383 Principles of Music Teaching 3
MusT 387 Orff Schulwerk 2
MusT 388 Kodaly Method 2
MusT 432 Practicum: Music Teaching 14
MusT 445 Proseminar in Music Teaching 2
MusX 140 Convocation (seven semesters) 0
ED 201 Introduction to Teaching 2
ED 314 Strategies for Teaching 3
ED 328 Introduction to Educational Technology 2
Psyc 101 Introduction to Psychology 3
Psyc 305 Developmental Psychology 3
Large ensemble (six different semesters chosen from MusA 117, 316, 317) 6
Other ensemble (two different semesters chosen from MusA 117, 118, 119, 121, 316, 317, 318, 319, 320, 321, 322, 323, 380) (two semesters of MusA 315, Accompanying, is reqd of students whose major applied medium is keyboard) 2
Electives to total 128 cr for the degree ..... —

*Keyboard majors must pass the piano class proficiency exam or register for the appropriate level of piano class until the piano class proficiency exam is passed. Voice majors must register for piano class (or pass the proficiency exam) before enrolling in applied piano instruction; any combination of piano class or applied piano should equal a minimum of six credits. If the major instrument is other than voice, a minimum of six credits is required in any combination of class voice (MusA 147-148) or applied voice (MusA 114/314).

MUSIC EDUCATION: INSTRUMENTAL (B.Mus.)

NOTE: For registration in upper-division courses in education, students must have been admitted to the teacher education program and maintain a GPA of 2.5. For admission criteria, refer to "Admission to the Teacher Education Program" in the College of Education section of part four of this catalog.

Comprehensive Exit Exam. Students in this degree program take a comprehensive exam consisting of questions solicited from those faculty members who teach the respective music education courses. This exam is administered as a part of MusT 445, Proseminar in Music Teaching. Students are given the complete list of questions, from which the test questions will be drawn, at least three weeks before the announced date of the exam. The completed tests are evaluated by the music education faculty; where questions arise about the quality of one or more responses, the faculty member who submitted the question is asked for his or her input. Each student must successfully complete the comprehensive exam before being permitted to student teach. If unsuccessful, the student may repeat the test as many times as necessary to pass.

Required course work includes the university requirements (see regulation J-3) and:

MusA 124 Individual Instruction 8
MusA 324 Individual Instruction 6
MusA 145-146, 245-246 Piano Class 4
MusA 387, 487 Conducting I, II 4
MusA 490 Recital (half) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 327 Orchestration or 461 Band Arranging 3
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusT 201 Introduction to Music Teaching 1
MusT 251, 252, 253, 254, 351, 352, 353, 354 Instrumental Techniques 8

MusT 381 Elementary School Music Methods 3
MusT 383 Principles of Music Teaching 3
MusT 386 Instrumental Music in the Secondary School 2
MusT 432 Practicum: Music Teaching 14
MusT 445 Proseminar in Music Teaching 2
MusT 465 Jazz Band Rehearsal Techniques 1
MusT 466 Marching Band Techniques 1
MusT 467 Instrumental Literature for Public Schools 1
MusT 486 Instrumental Ensemble Rehearsal Techniques 1
MusX 140 Convocation (seven semesters) 0
ED 201 Introduction to Teaching 2
ED 312 Educational Psychology 2
ED 313 Educational Measurement 1
ED 314 Strategies for Teaching 3
EDTE 463 Literacy Methods for Content Learning 3
Psyc 101 Introduction to Psychology 3
Large ensembles (six different semesters)* 6
Other ensembles (two different semesters chosen from MusA 119, 121, 319, 320, 321, 322, 323, 365) (students whose major applied medium is keyboard must select MusA 315 to satisfy this requirement) 2
Electives to total 128 cr for the degree ..... —

*The large ensemble requirement must be completed in six different semesters; wind and percussion majors must register for three different semesters of MusA 119 or 319 and three different semesters of MusA 121, 320, or 321. Wind and percussion majors may, by audition, substitute two semesters of MusA 322 for 320 or 321. String majors must register for six different semesters of MusA 322. Wind, percussion, and string majors must have a total of four semesters of large ensemble participation (as defined above) at UI.

MUSIC EDUCATION: VOCAL-INSTRUMENTAL (B.Mus.)

NOTE: For registration in upper-division courses in education, students must have been admitted to the teacher education program and maintain a GPA of 2.5. For admission criteria, refer to "Admission to the Teacher Education Program" in the College of Education section of part four of this catalog.

Comprehensive Exit Exam. Students in this degree program take a comprehensive exam consisting of questions solicited from those faculty members who teach the respective music education courses. This exam is administered as a part of MusT 445, Proseminar in Music Teaching. Students are given the complete list of questions, from which the test questions will be drawn, at least three weeks before the announced date of the exam. The completed tests are evaluated by the music education faculty; where questions arise about the quality of one or more responses, the faculty member who submitted the question is asked for his or her input. Each student must successfully complete the comprehensive exam before being permitted to student teach. If unsuccessful, the student may repeat the test as many times as necessary to pass.

Required course work includes the university requirements (see regulation J-3) and:

MusA 114 Individual Instruction (voice) 2
MusA 124 Individual Instruction 8
MusA 145-146, 245-246 Piano Class 4
MusA 147-148 Voice Class 2
MusA 324 Individual Instruction 6
MusA 387, 487 Conducting I, II 4
MusA 490 Recital (half) 0
MusC 139-140, 239-240 Aural Skills 6
MusC 141-142, 241-242 Theory of Music 10
MusC 327 Orchestration or 461 Band Arranging 3
MusC 428 Choral Arranging 2
MusH 111 Introduction to Music 2
MusH 321, 322, 323 Music in Western Civilization 9
MusT 201 Introduction to Music Teaching 1
MusT 251, 252, 253, 254, 351, 352, 353, 354 Instrumental Techniques 8
MusT 381 Elementary School Music Methods 3
MusT 383 Principles of Music Teaching 3
MusT 385 Choral Music in the Secondary School 2
MusT 386 Instrumental Music in the Secondary School 2
MusT 432 Practicum: Music Teaching 14
MusT 445 Proseminar in Music Teaching 2
MusT 465 Jazz Band Rehearsal Techniques 1
MusT 466 Marching Band Techniques 1
MusT 467 Instrumental Literature for Public Schools 1
MusT 485 Choral Ensemble Rehearsal Techniques 1
MusT 486 Instrumental Ensemble Rehearsal Techniques 1
MusX 140 Convocation (seven semesters) 0
ED 201 Introduction to Teaching 2
ED 312 Educational Psychology 2
ED 313 Educational Measurement 1
ED 314 Strategies for Teaching 3
EDTE 463 Literacy Methods for Content Learning 3
Psyc 101 Introduction to Psychology 3
Large ensembles (six different semesters)* 6
Large ensembles (two different semesters chosen from MusA 117, 316, 317) 2
Other ensembles (two different semesters chosen from MusA 119, 121, 319, 320, 321, 322, 323, 365) (students whose major applied medium is keyboard must select MusA 315 to satisfy this requirement) 2
Electives to total 128 cr for the degree ..... —

*The large ensemble requirement must be completed in six different semesters; wind and percussion majors must register for three different semesters of MusA 119 or 319 and three different semesters of MusA 121, 320, or 321. Wind and percussion majors may, by audition, substitute two semesters of MusA 322 for 320 or 321. String majors must register for six different semesters of MusA 322. Wind, percussion, and string majors must have a total of four semesters of large ensemble participation (as defined above) at UI.

Academic Minor Requirements

MUSIC MINOR

Note: Ensemble participation is recommended to meet the music electives requirement.

MusA 114 Individual Instruction 4
MusA 145-146 Piano Class 2
MusC 139-140 Aural Skills I-II 4
MusC 141-142 Theory of Music I-II 4
MusH 111 Introduction to Music 2
MusH 321, 322 Music in Western Civilization 6
MusX 140 Convocation (2 semesters) 0
Music electives 4

Department of Naval Science

Albert Z. Schwartz, Dept. Head (101 Navy Bldg. 83844-1122; phone 208/885-6333). Faculty: John C. Evarts, Douglas W. Kunzman, Christopher S. Manis, Albert Z. Schwartz.

The Navy-Marine Corps Officer Education Program (NOEP) provides instruction and training for young men and women in preparation for being commissioned as officers in the United States Navy or Marine Corps through the Naval Reserve Officer Training Corps (NROTC). Students are designated as midshipmen and receive extensive academic, physical, and leadership training while pursuing a degree in a field of their choice from the university. Emphasizing sustained strong academic performance along with leadership and physical fitness training, the goal of NROTC is to develop each midshipman to his or her highest mental, moral, and physical capability in preparation for assuming a position of high trust and responsibility as a commissioned officer in the United States Naval Service.

Both scholarship and nonscholarship (or "college") programs are offered in four-, three-, and two-year options. Application is normally made for four-year programs during the senior year in high school, however, students may apply directly to the professor of naval science for the college program at the beginning of their freshman year. Application for the three- or two-year programs may be made during the student's freshman or sophomore year. Information concerning any of these programs may be obtained from the professor of naval science.

The Naval Science Program consists of 20 semester hours of professional naval courses covering subjects such as engineering, navigation, military organization, and leadership. In addition, midshipmen are required to enroll in NS 100, where they receive instruction in military drill, courtesies, and other basic military skills during which they gain leadership experience. All uniforms and naval science textbooks are provided.

Upon graduation, the midshipmen are commissioned as officers in the U.S. Navy or U.S. Marine Corps. All new officers receive orders to active duty and are assigned to a broad spectrum of communities such as aviation, surface warfare, submarines, Marine ground forces, or other specialized fields. In all assignments the new officer takes a position that uses his or her specialized leadership, managerial, and educational training.

Scholarship Program. Scholarship benefits include tuition, fees, books, and $150 per month stipend. Initial selections are based on college entrance examination scores (SAT or ACT) and high school academic performance.

A student on scholarship participates in three summer training cruises of four to six weeks duration. During the first cruise, students are introduced to the submarine, amphibious warfare, surface warfare, and aviation communities. The second and third cruises are aboard ships of the Pacific or Atlantic fleet and often include travel to Europe or the Far East. During summer cruises, the students receive one-half the pay of newly commissioned officers, room, and board. Graduates of this program are commissioned as active duty reserve officers in the Navy or Marine Corps.

College Program. Application for this program is made directly to the head of the Department of Naval Science. Students receive their uniforms and naval science textbooks at no cost and begin receiving

a monthly $150 stipend at the beginning of their junior year. This program requires one training cruise during the summer following the junior year aboard a ship of the Pacific or Atlantic fleet. During the cruise, students receive one-half the pay of newly commissioned officers, room, and board. College Program graduates are commissioned as active duty reserve officers. Also, College Program students may be nominated by the professor of naval science to receive a scholarship, beginning as early as the spring semester of the freshman year.

Marine Corps Option. Both male and female Scholarship and College Program students who desire a Marine Corps commission may apply for the Marine Corps Option during their first two years in college. Students taking this option enroll in specialized courses on Marine Corps subjects during their junior and senior years and participate in summer training at the Marine Corps Development and Education Center, Quantico, Virginia, during the summer following their junior year.

Nursing Option. A selected number of scholarships are available for the Navy Nursing Program. Nursing students spend one to two years studying naval science and other entry-level courses at the University of Idaho, then transfer to an accredited nursing school to complete their RN training. Lewis-Clark State College in Lewiston, Idaho, is available for nursing education in conjunction with UI Naval ROTC. Nurse option students participate in all battalion activities, and also attend two summer training cruises during their college career. Graduates are commissioned as active duty reserve officers in the Navy.

Naval Science Institute. Navy-Marine Corps Scholarship and College Program applicants entering the program after completion of their sophomore year will be required to attend the Naval Science Institute (NSI) during the summer between their sophomore and junior years. At the NSI they will study the material taken by the four-year candidates during their freshman and sophomore years. On completion of the NSI, candidates return to the university and complete their junior and senior years of the naval science curriculum with their peers. Candidates in the two-year program will participate in one afloat cruise between their junior and senior years. Applications must be submitted early in the second semester of the sophomore year. The top NSI graduates are awarded scholarships for their last two years of college. The remaining graduates enter the College Program and receive those benefits.

Field Trips. Field trips to Navy and Marine Corps facilities are arranged periodically in order to allow the Navy-Marine Corps Officer Education Program members the opportunity to learn more about the naval service.

Courses

See part 6 for courses in Naval Science (NS).

Curricular Requirements

NAVAL SCIENCE (B.N.S.)

Required course work includes the university requirements (see regulation J-3) and:

NS 101 Introduction to Naval Science 2
NS 102, 201 Ships Systems I-II 6
NS 202 Seapower & Maritime Affairs 2
NS 301 Navigation 3
NS 302 Naval Operations 3
NS 401 Naval Organization & Management 2
NS 402 Naval Leadership 2
CS 112 Introduction to Problem Solving & Programming 3
Math 170, 175 Analytic Geometry & Calculus I, II 8
Phys 111-112 General Physics I-II 7
One of the following courses 3
- Hist 430 U.S. Diplomatic History
- Hist 455 20th Century Europe
- Hist 458 Military History
- PolS 237 International Politics
- PolS 438 Conduct of American Foreign Policy
- PolS 449 World Politics & War

A student applying for the bachelor's degree in naval science must have completed at least 80 percent of the requirements toward another university degree, as approved by the dean of the college concerned.

A student in naval science who concurrently qualifies for both the B.N.S. degree and another university degree will be awarded only the other university degree.

The awarding of the B.N.S. degree is administered through the College of Letters and Science; however, the academic records of the student concerned remain with the college in which he or she is registered for the regular baccalaureate degree.

Academic Minor Requirements

NAVAL SCIENCE MINOR

NS 101 Introduction to Naval Science 2
NS 102, 201 Ships Systems I, II 6
NS 202 Seapower & Maritime Affairs 2
Four to six courses from the following 10
- NS 301 Navigation
- NS 302 Naval Operations
- NS 311 Evolution of Warfare
- NS 401 Naval Organization & Management
- NS 402 Naval Leadership
- NS 412 Amphibious Operations

Department of Philosophy

Kathryn Paxton George, Dept. Chair (408 Morrill Hall 83844-3016; phone 208/885-7107). Faculty: Janice Capel Anderson, Kathryn Paxton George, Nicholas F. Gier, Douglas Lind, Michael O'Rourke. Adjunct Faculty: Raymond Dacey.

Philosophy examines the grounds of knowledge, the nature of reality, and the nature of value, justice, and morality. It asks fundamental questions about how we reason and how we ought to reason. Its subject matter encompasses all the other academic disciplines, indeed all areas of human experience—society, values, mind, language, art, and science.

The main value of philosophy lies in its contribution to a liberal education. As a central discipline of the humanities, philosophy encourages those who study it to gain insight into themselves and others—insight that proves helpful in setting high standards and working in productive collaboration with one's associates. In addition, philosophy is an excellent means of learning to reason and write clearly—skills useful in every conceivable human enterprise, now or in the future. Some philosophy majors pursue careers in academia; others, however, make rewarding careers for themselves in business, government, journalism, law, and human services.

Courses

See part 6 for courses in Philosophy (Phil).

Curricular Requirements

PHILOSOPHY (B.A. or B.S.)

Note: Students who intend to do graduate work are advised to take the Bachelor of Arts degree.

The electives in philosophy and related fields are to be selected with the approval of the chair of philosophy.

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and:

Phil 103 Ethics 3
Phil 202 Belief & Reality 3
Phil 210 Critical Thinking or Phil 211 Intro to Symbolic Logic 3
Phil 309 History of Ancient Philosophy 3
Phil 310 History of Modern Philosophy 3
Phil 490 Senior Seminar 3
Philosophy electives (upper-division; must include at least one course in non-Western thought) 12
Related fields (humanities, social sc, and sc) 20

Academic Minor Requirements

PHILOSOPHY MINOR

Phil 103 Ethics or 210 Critical Thinking or 211 Intro to Symbolic Logic or 202 Belief & Reality 3
Phil 309 History of Ancient Philosophy 3
Phil 310 History of Modern Philosophy 3
Three upper-division philosophy courses 9

RELIGIOUS STUDIES MINOR

See the Religious Studies section for details on this minor.

Department of Physics

Henry Willmes, Dept. Chair (311A Engineering/Physics Bldg. 83844-0903; phone 208/885-6380; e-mail henryw@uidaho.edu). Faculty: Philip A. Deutchman, Robert J. Kearney, Ruprecht Machleidt, George Patsakos, Bernhard J. Stumpf, Henry Willmes, Wei Jiang Yeh.

Physics is the scientific study of the nature and behavior of matter and energy. On the basis of quantitative observations, physicists develop theories to describe the observed behavior. Further experiments and observations are used to verify or refine the theories. The scientific method demands logical and mathematical rigor. The wealth of applications of physics to technology appeals to pragmatic persons, yet physics has much greater similarity to the arts and humanities than is commonly realized, because of the intellectual curiosity and creativity on which it is built.

The physics program at UI introduces students in technical and nontechnical curricula alike to the scientific method and to physical laws. The B.A. and B.S. curricula in physics emphasize a broad liberal-arts education and the core subjects in physics. Many B.A. and B.S. recipients go on to graduate study in physics or related disciplines.

Training in the theory, history, and philosophy of physics is provided by the required core courses and electives in most of the major areas of specialization. Formal laboratory courses and directed research familiarize students with experimental techniques, modern instrumentation, and computers. Facilities include a number of lasers, spectrometers, optical telescopes, nuclear radiation detectors, and microprocessors. The program is supported by a machine shop and an electronics shop. Collaborations with other universities and research institutes provide access to an even wider range of facilities.

The department offers graduate curricula leading to the M.S., M.A.T., and Ph.D. degrees. These programs are described in detail in the Graduate Catalog. A bachelor's degree in physics is normally required as preparation for graduate study. Students with a bachelor's degree in another physical science, engineering, or mathematics will generally qualify after removal of a few upper-division-level deficiencies. A major in secondary education with specialization in physical science and mathematics is suitable preparation for the M.A.T. curriculum.

Faculty members in the department will be happy to discuss programs in detail with interested persons. Requests for information or a tour of the facilities can be made by a letter or telephone call (208/885-6380) to the department.

Courses

See part 6 for courses in Physics (Phys).

Curricular Requirements

PHYSICS (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and:

Phys 211, 212, 213 Engineering Physics I, II, III 12
Phys 310 Introduction to Relativity 2
Phys 315 Introduction to Modern Physics 3
Phys 321-322 Analytical Mechanics 6
Phys 341-342 Electromagnetic Fields I-II 6
Phys 351 Elementary Quantum Mechanics 3
Phys 371 Mathematical Physics 3
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chem & Qual Analysis or 112 Prin of Chem II 4-5
Math 170, 175, 275 Analytic Geometry & Calculus 11
Mathematics (upper-division) 6

And, for the B.A. only:

Upper-division physics courses (incl at least 4 cr of lab) 9

And, for the B.S. only:

Upper-division physics courses (incl at least 4 cr of lab) 15

Academic Minor Requirements

PHYSICS MINOR

Phys 211, 212 Engineering Physics I, II 8
Phys 213 Engineering Physics III or CE 210 Engineering Statics 3
Physics courses numbered 300 or above (usual prerequisites are Math 170, 175, and 275) 12

Department of Plant, Soil, and Entomological Sciences

Lawrence E. O'Keeffe, Dept. Head (242 Iddings Wing, Ag. Sc. Bldg. 83844-2339; phone 208/885-6274).

Entomology Division: Lawrence E. O'Keeffe, Acting Division Chair; Craig R. Baird, James D. Barbour, Edward J. Bechinski, Merlyn A. Brusven, Gene P. Carpenter, Sanford D. Eigenbrode, Malcolm M. Furniss, James B. Johnson, Marc J. Klowden, Joseph P. McCaffrey, Thomas M. Mowry, Lawrence E. O'Keeffe, Larry E. Sandvol, Robert L. Stoltz, Karen Strickler.

Plant Pathology Division: Maurice V. Wiese, Division Chair; Philip H. Berger, Wesley W. C. Chun, James R. Davis, Robert L. Forster, John J. Gallian, Saad L. Hafez, S. Krishna Mohan, Phillip Nolte, Maurice V. Wiese.

Plant Science Division: Robert B. Dwelle, Division Chair; Danny L. Barney, Jack Brown, W. Michael Colt, Robert B. Dwelle, Charlotte V. Eberlein, Esmaeil Fallahi, Jeffrey D. Griffin, Thomas C. Griggs, Harold R. Guenthner, Stephen O. Guy, Gale E. Kleinkopf, Gary A. Lee, C. T. Liu, Stephen L. Love, Don W. Morishita, Glen A. Murray, John C. Ojala, Larry D. Robertson, R. Robert Romanko, Kiran K. Shetty, Edward J. Souza, Jeffrey C. Stark, Donald C. Thill, Michael K. Thornton, Robert R. Tripepi, Robert S. Zemetra.

Soil Science Division: Denny V. Naylor, Division Chair; Bradford D. Brown, Scott E. Fendorf, John E. Hammel, Guy R. Knudsen, Robert L. Mahler, Paul A. McDaniel, Matthew J. Morra, Denny V. Naylor, Terry A. Tindall.

The challenge for agriculture today is to provide the world with food and fiber while protecting the environment. Toward this end, we train students for professional careers in crop production, pest control, biotechnology, biological control of insects, weeds and diseases, and preservation of soil, water, and air quality.

The Department of Plant, Soil, and Entomological Sciences, within the College of Agriculture, offers B.S. degrees in entomology, plant science, and soil science.

The entomology major emphasizes both basic and applied aspects of the study of insects and how they influence human activities. The program provides a broad entomological education with opportunities to specialize in such areas as agricultural and aquatic entomology, biological control, host plant resistance, insect ecology, pathology and physiology, and insect-plant relations. The curriculum is designed for students pursuing professional careers in the basic and applied fields of entomology, or for those interested in continuing their education at the graduate level.

Under the plant science degree, students can study horticultural science, landscape horticulture, crop management, crop science, and plant protection. Many courses emphasize environmental concerns, ecological relationships, and sustainability of agricultural systems. Students can choose either a science option or a management option.

The science option is recommended for students interested in graduate study in plant sciences or interested in research work. It is designed for those who would like to pursue professional careers in the sciences of plant physiology, pathology, breeding, weed control, and agronomic or horticultural production. Students can tailor their plant science curriculum to meet individual needs and interests.

The management option is for students who are interested in field crop management, pest management, or in the management and

operation of commercial nurseries, greenhouses, landscapes, recreational parks, and related industries. The curriculum includes courses in basic sciences emphasizing the production and management of crops or horticultural systems that are economically significant to Idaho and the nation. Completion of this curriculum provides the student with the general knowledge necessary for positions in the chemical, fertilizer, and seed industries, or as farm or nursery managers, and as cooperative extension agents. This program can also lead to advanced degree studies.

The soil science degree program is offered for students who are interested in businesses and industries associated with soils and farm chemicals, as professional soil scientists working with the formation, classification, chemistry, physics, and fertility of valuable soil resources, or as environmental scientists in conserving or improving soil and water quality. Courses in geology, botany, chemistry, and physics, in addition to soils, are stressed.

The degree offerings are designed to prepare students for a variety of rewarding career opportunities. Each of these degree programs is based on a curriculum designed to prepare students for present and future employment. The department offers students the opportunity to work closely with faculty in classroom and field situations. The faculty members provide wide educational experiences for students who major in this department. Formal courses are offered as needed to serve the students in the various degree programs, and additional specialization may be obtained by enrolling in directed study, special topics, seminar, and other courses, with particular faculty members. An internship program also is available to provide students with practical job experience and to open doors for career opportunities.

Faculty members are concerned with the needs and interests of individual students. Questions regarding programs, arrangements, or facilities are welcome. Prospective majors in entomology, plant science, or soil science should consult the department head in Room 242, Agricultural Science Building, or telephone 208/885-6276.

Courses

Courses are offered in the following subject fields (see part 6): Entomology (Ent), Plant Science (PlSc), and Soils (Soil).

Curricular Requirements

ENTOMOLOGY (B.S.Ent.)

Designed for students who desire professional careers in the basic and applied fields of entomology (insect taxonomy, ecology, physiology, and agriculture, aquatic, and forest entomology).

Required course work includes the university requirements (see regulation J-3) and:

Ent 211 General Entomology 4
Ent 322 Economic Entomology 3
Ent 440 Insect Identification 4
Ent 484 Insect Anatomy & Physiology 4
Biol 201 Introduction to the Life Sciences 4
Biol 202 General Zoology 4
Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351 General Genetics 3
Biol 352 Experimental Genetics 2
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
Engl 313 Business Writing or 317 Tech & Engr Report Writing 3
MMBB 250 General Microbiology 5
PlSc 405 Plant Pathology 4
Stat 251 Principles of Statistics 3
Entomology electives 5
Life sciences electives 11
Mathematics electives 4
Physics electives 3
Humanities and social sciences electives 14
Electives to total 132 cr for the degree ..... —

Courses strongly recommended:

Ent 491 Principles of Insect Pest Management 3
Bot 241 Systematic Botany 3
CS 101 Introduction to Computer Science 3
Math 170 Analytic Geometry & Calculus I 4
MMBB 380 Introductory Biochemistry 3
Zool 484 Invertebrate Zoology 4

PLANT SCIENCE (B.S.Pl.Sc.)

Under the plant science degree, students can study horticultural science, landscape horticulture, crop management, crop science, and plant protection. Students can choose either a science option or a management option.

Required course work includes the university requirements (see regulation J-3) and:

PlSc 102 The Science of Plants in Agriculture 3
PlSc 338 Weed Control 3
PlSc 400 Seminar 1
PlSc 405 Plant Pathology 4
PlSc 438 Pesticides in the Environment 3
Biol 201 Introduction to the Life Sciences 4
Biol 203 General Botany 4
Bot 311 Plant Physiology 4
ComG 101 Fundamentals of Public Speaking 2
Engl 313 Business Writing or 317 Tech & Engr Report Writing 3
Gene 314 General Genetics 3
MMBB 380, 382 Introductory Biochemistry & Lab 4
Soil 205, 206 General Soils & Lab 4
Stat 251 Principles of Statistics 3
Computer science elective 3
Ecology elective 3
Humanities and social sciences electives 14
Science approved electives (upper-division plsc, bot, ent, soils) 13

And one of the following options:

A. SCIENCE OPTION

The science option is recommended for students interested in graduate study or research work directed toward professional careers in the sciences of plant physiology, pathology, breeding, weed control, and agronomic or horticultural production.

Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 275, 276 Carbon Compounds & Lab or 277, 278 Organic Chem & Lab 4
Ent 211 General Entomology 4
Math 160 Survey of Calculus 4
MMBB 250 General Microbiology 5
Phys 111 General Physics I 4
Agricultural economics/economics elective 3
Electives to total 132 cr for the degree ..... —

B. MANAGEMENT OPTION

The management option is for students who are interested in field crop management, pest management, or in the management and operation of commercial nurseries, greenhouses, landscapes, recreational parks, and related industries.

Chem 101 Introduction to Chemistry I 4
Chem 275, 276 Carbon Compounds & Lab 4
Ent 322 Economic Entomology 3
Math 143 Pre-calculus Algebra & Analytical Geom or Stat 150 Intro to Statistics 3
MMBB 154, 155 Principles of Microbiology & Lab 4
Bus, econ, acctg, law, mgt electives 13
Internship or directed study 3
Physics elective 3
Electives to total 132 cr for the degree ..... —

SOIL SCIENCE (B.S.Soil Sc.)

This degree prepares students for a variety of professional careers in challenging areas including (a) environmental issues such as water quality, waste management, environmental cleanup, and soil conservation, (b) efficient food and fiber production, and (c) land resource allocation and management in various ecosystems. Graduates are prepared for employment by agencies and companies such as agricultural consulting firms, farm chemical manufacturers and dealers, state and federal land and water resource organizations, waste management consulting firms, or graduate school.

Required course work includes the university requirements (see regulation J-3) and:

Soil 205, 206 General Soils & Lab 4
Soil 415 Soil Physics 3
Soil 422 Chemistry of Soil Environment 3
Soil 446 Soil Fertility 3
Soil 454 Soil Development & Classification 3
Biol 201 Introduction to the Life Sciences 4
Biol 203 General Botany 4
Chem 111 Principles of Chemistry I 4
Chem 113 Inorganic Chemistry & Qualitative Analysis 5
Chem 253 Quantitative Analysis 5
Chem 275 Carbon Compounds or 277 Organic Chemistry I 3
ComG 101 Fundamentals of Public Speaking 2
Engl 313 Business Writing or 317 Tech & Engr Report Writing 3
Geol 101 Physical Geology 4
Math 130 Finite Math and 160 Survey of Calculus
or 170 Analytic Geometry & Calculus I 4-8
MMBB 250 General Microbiology 5
Phys 111 General Physics I 4
Stat 251 Principles of Statistics 3

And one of the following options:

A. AGROECOSYSTEM MANAGEMENT OPTION

Soil 423 Soil-Plant Analysis 2
Soil 447 Soil Fertility Management 3

ASM 315 Irrigation Systems & Water Management 3
Bot 311 Plant Physiology 4
Ent 211 General Entomology 4
LArc 385 or Geog 385 GIS Primer 3
Computer science electives 6
Three courses selected from the following 8-11
- PISc 338 Weed Control
- PISc 405 Plant Pathology
- PISc 407 Field Crop Production
- Soil 425 Microbial Ecology

Electives to total 128 cr for the degree ..... —

B. ENVIRONMENTAL SCIENCE OPTION

Soil 438 Pesticides in the Environment 3
Biol 331 General Ecology 3
Chem 278 Organic Chemistry I: Lab 1
Chem 372 Organic Chemistry II 3
CS 105 FORTRAN Programming for Engineers or
CS 112 Intro to Problem Solving & Programming 2-3
Fish 415 Limnology 4
Math 175 Analytic Geometry & Calculus II 4
Phys 112 General Physics I 4
Two courses selected from the following 6-7
- AgE 351 Hydrology
- Bot 435, 436 Plant Environmental Biophysics & Lab
- Chem 318 Environmental Chemistry
- Geol 409 Ground Water
- Soil 425 Microbial Ecology

Electives to total 128 cr for the degree ..... —

C. LAND RESOURCES OPTION

AgE 351 Hydrology 3
ASM 240 Computer Applications in Biological Systems or
CS 101 Intro to Computer Science 3
Biol 331 General Ecology 3
Econ 202 Principles of Economics 3
For 205, 206 Wildland Resource Conservation & Lab 4
Geog 200 World Regional Geography 3
Geol 335 Geomorphology 3
LArc 385 or Geog 385 GIS Primer 3
Three courses selected from the following 9
- AgEc 451 Land & Natural Resource Economics
- For 415 Remote Sensing Applied to Terrain Evaluation
- Geog 401 Climatology
- Geog 420 Land & Resource Regulation
- Geol 361 Geology & the Environment
- Geol 409 Ground Water

Electives to total 128 cr for the degree ..... —

Academic Minor Requirements

CROP SCIENCE MINOR

Ent 211 General Entomology 4
PISc 102 The Science of Plants in Agriculture 3
PISc 405 Plant Pathology 4
PISc 407 Field Crop Production 3
Soil 205, 206 General Soils & Lab 4
Courses selected from the following 3
- PISc 308 Forage & Grassland Management
- PISc 401 Crop Physiology
- PISc 446 Plant Breeding
- PISc 469 Seed Production
- PISc 490 Potato Science

ENTOMOLOGY MINOR

Ent 211 General Entomology 4
Ent 322 Economic Entomology 3
Ent 440 Insect Identification 4
Ent 484 Insect Anatomy & Physiology 4
Courses selected from the following 3
- Ent 439 Insect-Plant Interactions: Community Dynamics
- Ent 443 Natural History & Population Management of Insects
- Ent 445 Insect-Plant Interactions: Mechanisms of Insect-Plant Interactions
- Ent 446 Insect Plant Interactions: Host Plant Resistance
- Ent 447 Fundamentals of Biological Control
- Ent 448 Medical Entomology
- Ent 472 Aquatic Entomology
- Ent 474 Aquatic Entomology Lab
- Ent 491 Principles of Insect Pest Management

HORTICULTURE MINOR

PISc 102 The Science of Plants in Agriculture 3
PISc 202 Plant Propagation 3
Three of the following courses 9
- PISc 320 Olericulture—Commercial Vegetable Crops
- PISc 340 Nursery Management
- PISc 461 Tree Fruit Production Techniques
- PISc 464 Landscape Maintenance

Two of the following courses 5-8
- PISc 234 Controlled Environments for Horticultural Production
- PISc 405 Plant Pathology
- Gene 314 General Genetics
- LArc 288 Plant Materials I
- Soil 205, 206 General Soils & Lab

PLANT PROTECTION MINOR

Ent 211 General Entomology 4
Ent 491 Principles of Insect Pest Management 3
PISc 338 Weed Control 3
PISc 405 Plant Pathology 4
Courses selected from the following 4-6
- Ent 322 Economic Entomology
- Ent 447 Fundamentals of Biological Control
- Ent 451 Applied Biological Control: Weeds
- Ent 452 Applied Biological Control: Arthropod Pests
- Ent 453 Applied Biological Control: Microbial Control
- PISc 410 Biology of Weeds

SOIL SCIENCE MINOR

Soil 205, 206 General Soils & Lab 4
Soil 415 Soil Physics 3
Soil 422 Chemistry of Soil Environment 3
Soil 446 Soil Fertility 3
Soil 454 Soil Development & Classification 3
Courses selected from the following to total at least 18 cr for the minor 0-2
- Soil 437 Soil Biology
- Soil 447 Soil Fertility Management

Department of Political Science

Donald W. Crowley, Chair, Dept. of Political Science and Public Affairs Research (205 Admin. Bldg. 83844-3165; phone 208/885-6328). Faculty: Lisa J. Carlson, Donald W. Crowley, Florence A. Heffron, Robert A. Hoover, William R. Lund, Alwyn R. Rouyer, Jack E. Vincent, Daniel G. Zirker.

Most decisions in modern society depend to some extent on the workings of the political process. Debate over the role of government vis-a-vis the individual has continued since the time of Plato and Aristotle. Political science as a discipline encompasses a broad range of subfields that attempt to describe and explain the political process, politics, and the relationships among governments. The general areas of study in political science include American government and politics, political theory, public administration, public law, comparative politics, and international relations.

The political science program at UI is designed to provide students with a comprehensive selection of introductory and advanced courses in the above areas in order to give them the background necessary to pursue a variety of potential career objectives. Students have a choice of either a Bachelor of Arts or a Bachelor of Science degree. The B.S. degree places more emphasis on methodology and statistics; the B.A. provides a more traditional liberal-arts track. All students are required to take a course in political theory and one in research methods. Students are also expected to take at least two courses in both the domestic (American) politics area and the foreign politics area. Beyond this, the student normally will specialize in one or two of the general subfields depending on his or her career plans. For instance, a prelaw major would take a heavier load in public law courses while a student interested in the foreign service would take more courses in international relations and foreign policy.

The department encourages students to gain practical experience in government by awarding up to six credits for internships. Here the student works either in the legislature, the executive branch, or on a political campaign. In the past, students have interned in most of the state executive agencies, including the governor's office, with congressmen and senators in Washington, D.C., and on political campaigns from the local to the national level.

The department places emphasis both on solid classroom preparation for a variety of career objectives and practical research and internship experience. Students benefit from close contact with instructors both in and out of the classroom and are given individual attention in designing programs of study to best fit their interests. The department encourages innovative teaching techniques among its faculty and in-class participation of its students.

The Bureau of Public Affairs Research is an integral part of the department. Since its founding, the bureau has completed many research projects concerned with a broad spectrum of state and local government activities, policies, and politics. In addition to its research function, the bureau offers training services for both state and local governmental officials. The bureau also provides consulting services to state and local agencies.

Three graduate degrees are offered by the department: Master of Arts, Master of Public Administration, and Doctor of Philosophy. More information about these programs may be found in the Graduate Catalog.

Courses

See part 6 for courses in Political Science (PolS).

Curricular Requirements

POLITICAL SCIENCE (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

PolS 101 Intro to Political Science & American Government 3
Stat 251 Principles of Statistics 3
Introductory courses in other social sciences 6
Additional political sc courses numbered 150 or above (minimum of 23 cr reqd in upper-div courses; total to incl PolS 435, at least 3 cr in PolS 425 or 426, and at least two courses in American politics area and two in foreign politics area) 29
Upper-division related field courses 20

Note: A maximum of 6 credits of political science internship and/or directed study courses may be counted toward meeting the political science credit requirements. The choice of specific electives must be approved by the department.

POLITICAL SCIENCE (B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.S. degree, and:

PolS 101 Intro to Political Science & American Government 3
Math 130 Finite Math or 143 Pre-calculus Algebra & Analytic Geom or 170 Analytic Geom & Calculus I 3-4
Stat 251 Principles of Statistics 3
Introductory courses in other social sciences 6
Additional political sc courses numbered 150 or above (minimum of 23 cr reqd in upper-div courses; total to incl PolS 435, at least 3 cr in PolS 425 or 426, and at least two courses in American politics area and two in foreign politics area) 29
Research methods in the behavioral sc, stat, data processing, or computer programming (may be counted as related field cr if upper-division) 6
Upper-division related field courses 20

Note: A maximum of 6 credits of political science internship and/or directed study courses may be counted toward meeting the political science credit requirements. The choice of specific electives must be approved by the department.

Academic Minor Requirements

AMERICAN GOVERNMENT/PUBLIC LAW MINOR

Note: Approved political science seminars may be substituted in this minor.

PolS 101 Intro to Political Science & American Government 3
Two courses from the following (American Institutions) 6
- PolS 275 American State & Local Govt
- PolS 428 American Political Thought
- PolS 431 American Political Parties & Elections
- PolS 432 American Congress
- PolS 433 American Political Culture
- PolS 437 American Presidency
- PolS 439 Public Policy
- PolS 464 Politics of the Environment
- PolS 471 Intergovernmental Relations

Two courses from the following (Public Law) 6
- PolS 429 Contemporary Political Ethics
- PolS 452 Administrative Law & Regulation
- PolS 460 Law & Society
- PolS 467 Constitutional Law
- PolS 468 Civil Liberties
- PolS 469 The Judicial Process

Additional courses from American Institutions or Public Law listed above 6

FOREIGN AND INTERNATIONAL POLITICS MINOR

Note: Approved political science seminars may be substituted in this minor. Either Econ 446 or 447 may be used for credit in this minor.

PolS 101 Intro to Political Science & American Government 3
PolS 237 International Politics 3
Courses in the following two areas (at least 3 cr in each area) 15

International Relations
- PolS 438 Conduct of American Foreign Policy
- PolS 440 International Organizations & International Law
- PolS 449 World Politics & War
- PolS 487 Political Violence & Revolution

Comparative Politics
- PolS 380 Canadian Political System
- PolS 381 Politics of Western Europe
- PolS 382 Post-Communist Politics
- PolS 447 Political Systems of East Asia
- PolS 480 Politics of Development
- PolS 482 Latin American Politics
- PolS 483 Middle Eastern Politics
- PolS 484 Politics of India & Subcontinent
- PolS 485 African Politics

POLITICAL SCIENCE MINOR

Note: Approved political science seminars may be substituted in this minor.

PolS 101 Intro to Political Science & American Government 3
PolS 425 History of Political Philosophy I or 426 History of Political Philosophy II or 428 American Political Thought 3
Three courses in American government/policy (only one course may be numbered below 300) 9
Two courses in international relations/comparative government (only one course may be numbered below 300) 6

PUBLIC ADMINISTRATION MINOR

Note: Approved political science seminars may be substituted in this minor.

PolS 101 Intro to Political Science & American Government 3
PolS 275 American State & Local Government 3
PolS 451 Public Administration 3
Four courses from the following 12
- PolS 439 Public Policy
- PolS 452 Administrative Law & Regulation
- PolS 453 Public Management Techniques
- PolS 454 Public Organization Theory
- PolS 464 Politics of the Environment
- PolS 471 Intergovernmental Relations
- PolS 556 Governmental Policy & Program Analysis
- PolS 557 Governmental Budgeting

Department of Psychology

Sallie E. Gordon, Dept. Chair (106 Psych. Bldg. 83844-3043; phone 208/885-6324). Faculty: Curt C. Braun, David E. Christian, Brian P. Dyre, Sallie E. Gordon, Justin G. Hollands, Kenneth D. Locke, Steven E. Meier, Philip J. Mohan, Laurie J. Wilson, Mark F. Yama.

Psychology is the scientific study of thinking, emotion, and behavior. It is a diverse field, and can be applied to almost all aspects of everyday life: interpersonal relationships, school and lifelong learning, family, and the work environment. Psychology uses scientific research methods to develop and test theories, and to explain or predict behavior. Undergraduate study in psychology provides a broad coverage of the field; whereas graduate study focuses more narrowly on a particular discipline, preparing students for professional work as researchers and/or practitioners.

The Psychology Department offers a B.S. or B.A. in psychology. The degree requires students to take a wide variety of courses in areas such as developmental processes, social psychology, learning and memory, personality, clinical psychology, biological processes, and sensation/perception. Depending on their interests, students also select from more specialized subjects such as human factors, industrial/organizational psychology, aging, and the psychology of emotion.

In conjunction with the degree course work requirements, students in the undergraduate program are encouraged to select one of four tracks or emphases depending on their postgraduate goals. A Liberal Arts Track is available for students who wish to obtain a broad background in psychology without specializing in any particular

subdiscipline of psychology. Its diversity gives students a flexible background for postgraduate careers. This track is often combined with a major or minor in another academic discipline. The Job Skills Track is designed for students who wish to earn a B.S. or B.A. with more specific skills and knowledge relevant to a particular area of psychology, such as clinical/counseling, industrial/organizational psychology, or human factors. The Pre-graduate School Track is a package of recommended course work and other guidelines developed to enhance a student's preparation for graduate education in psychology. Finally, the Pre-professional Track is a set of guidelines designed for students who are interested in pursuing law, dental, or medical school. As part of all these tracks, students are encouraged to participate in research projects, internships, and teaching experiences to enhance their education.

Graduate training in the Psychology Department prepares students for careers in government and industry, teaching at the junior college level, or for continued study elsewhere at the doctoral level. The department offers an M.S. in psychology with an emphasis in either human factors psychology or industrial/organizational psychology. The intent of both emphases is to develop knowledge and skills germane to a professional position, but the emphases also provide appropriate preparation for further graduate study. Both human factors and industrial/organizational psychology emphases can be taken as thesis or nonthesis options.

An applicant to the graduate program must possess an undergraduate degree in psychology or a related field, such as engineering, computer science, or business. In addition, applicants are required to have completed a course in introductory statistics, a course in experimental psychology or research methods, and a course in computer programming. Students wishing to emphasize human factors are required to have taken upper-level courses in cognitive psychology and sensation/perception; students wishing to emphasize industrial/organizational psychology are required to have taken upper-level courses in social psychology, I/O psychology, and tests and measurement.

Courses

See part 6 for courses in Psychology (Psyc).

Curricular Requirements

PSYCHOLOGY (B.A. or B.S.)

Note: Psyc 101 and Psyc 218 must be completed with a grade of C or better and a minimum cumulative GPA of 2.50 must be attained for students seeking upper-division standing in the department. In order to graduate with a degree in psychology, a 2.50 GPA must be attained.

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and:

Psyc 101 Introduction to Psychology 3
Psyc 218 Introduction to Research in the Behavioral Sciences 4
Biol 100 Intro to Biology or Biol 201 Intro to the Life Sciences 4
CS 101 Intro to Computer Science or CS 112
Intro to Problem Solving & Programming 3
Stat 251 Principles of Statistics 3
A grade of C or above in at least three courses from each of the following two groups 18

Personal/Social Bases of Behavior
- Psyc 305 Developmental Psychology
- Psyc 310 Psychology of Personality
- Psyc 311 Abnormal Psychology
- Psyc 320 Introduction to Social Psychology

Biological/Experimental Bases of Behavior
- Psyc 325 Cognitive Psychology
- Psyc 372 Physiological Psychology
- Psyc 390 Psychology of Learning
- Psyc 444 Sensation & Perception

At least four additional upper-division psychology courses (not including Psyc 400, 403, or 499) with a grade of C or better, for a total of 12 credits. Note: A maximum of 3 credits of Psyc 497 or 498 may be used for the additional upper-division course requirements.

Academic Minor Requirements

PSYCHOLOGY MINOR

Note: Psyc 101 and Psyc 218 must be completed with a grade of C or better.

Psyc 101 Introduction to Psychology 3
Psyc 218 Introduction to Research in the Behavioral Sciences 4
A grade of C or above in at least two courses from each of the following groups 12

Personal/Social Bases of Behavior
- Psyc 305 Developmental Psychology
- Psyc 310 Psychology of Personality
- Psyc 311 Abnormal Psychology
- Psyc 320 Introduction to Social Psychology

Biological/Experimental Bases of Behavior
- Psyc 325 Cognitive Psychology
- Psyc 372 Physiological Psychology
- Psyc 390 Psychology of Learning
- Psyc 444 Sensation & Perception

And a grade of C or better in at least one additional upper-division psychology course (not including Psyc 400, 403, 497, or 499).

Department of Range Resources

Kendall L. Johnson, Dept. Head (205B FWR Bldg. 83844-1135; phone 208/885-6536). Faculty: Stephen C. Bunting, John H. Ehrenreich, Kendall L. Johnson, James L. Kingery, Karen L. Launchbaugh, L. Kirk Lohman, Ronald Robberecht, Kenneth D. Sanders.

The western half of the continent is dominated by vegetation that is predominantly grasses, grass-like plants, forbs, or shrubs, collectively known as rangeland. This kind of land can also be described in more specific terms, such as prairie, plains, grassland, shrubland, savanna, steppe, desert, semidesert, sward, tundra, and alpine. Such lands occupy about 47 percent of the global land area and roughly a third of the United States. Idaho's rangelands, however, comprise nearly 70 percent of the total land area of the state, thus emphasizing the geographic and economic importance of these lands to the citizens of Idaho.

Rangelands serve a variety of uses necessary to maintain and enhance the nation's productive capacity and quality of life. Among them are habitat for many species of plants and animals, many different minerals for industrial uses, forage for domestic livestock and wildlife species, water for domestic, agricultural, and industrial uses, a broad spectrum of outdoor recreational activities, open space, and natural beauty. Sound management of rangelands based on ecological principles is required if society is to gain the full measure of products, benefits, and values that these resources offer.

The Department of Range Resources in the College of Forestry, Wildlife and Range Sciences offers a program leading to the degree of Bachelor of Science in Range Resources. The range resources curriculum at UI prepares students for the scientific management of rangelands within a variety of career opportunities. In addition, the range program provides ample opportunity for students to broaden their knowledge and skills in other areas of natural resource management, such as fish and wildlife, forestry, watershed, recreation, soils, agricultural economics, and animal science. Field study and evaluation of plant and animal communities are integral parts of the curriculum in range resources. Internships with public land management agencies and private livestock enterprises add to the educational opportunities in the program. Modern library and computer facilities also enhance the teaching and learning processes available to students.

Graduate students may earn the degree of Master of Science in Range Resources in the department and the Doctor of Philosophy degree in the college with a major in forestry, wildlife, and range sciences. Graduate applicants should normally have completed an undergraduate major in range resources management with training in the biological, physical, and social sciences equivalent to that required for the B.S. degree at UI. Applicants lacking this preparation will be required to make up deficiencies as needed.

Prospective students in range resources are urged to contact the departmental office for further information (208/885-6536).

Courses

See part 6 for courses in Range Resources (Rnge).

Curricular Requirements

RANGE RESOURCES (B.S.Range Res.)

Required course work includes the university requirements (see regulation J-3) and:

First and Second Years

Rnge/WLF/For 221 Natural Resources Ecology 3
Rnge 251 Principles of Range Resources Management 2
ASM 240 Computer Applications in Biological Systems or CS 112 Intro to Problem Solving & Programming 3
AVS 205 Introduction to Animal Nutrition 3
Biol 201 Introduction to the Life Sciences 4
Biol 203 General Botany 4
Bot 241 Systematic Botany 3
Chem 101 Introduction to Chemistry I 4
Chem 275 Carbon Compounds 3
ComG 101 Fundamentals of Public Speaking 2
Econ 201, 202 Principles of Economics 6
For/RRT/Soc 235 Society & Natural Resources 3
For/Rnge/WLF/RRT/Fish/ForP 301 Wildland Field Ecology I 1
FWR 101 Forestry Orientation 1
Math 170 Analytic Geometry & Calculus I or 160 Survey of Calculus 4
Soil 205 General Soils 3
Stat 251 Principles of Statistics 3
Three of the following 6
- Fish 290 Principles of Fish Biology & Management
- For 270 Principles of Forest Ecosystem Management
- ForP 250 Principles of Forest Products
- RRT 287 Principles of Resource Recreation & Tourism Management
- WLF 290 Principles of Wildlife Biology

Summer Session

For/Rnge/WLF/RRT/Fish/ForP 302 Wildland Field Ecology II 2

Third and Fourth Years

Rnge 352 Natural History of Western Rangelands 3
Rnge 354 Rangeland Vegetation Management 3
Rnge 453 Rangeland Vegetation Inventory & Analysis 3
Rnge 456 Integrated Rangeland Resource Management & Planning 4
Rnge 457 Classification & Identification of Range Plants 3
Rnge 459 Rangeland Ecology 3
AVS 474 Beef Cattle Science or AVS 476 Sheep Science 3
Bot 311 Plant Physiology 4
Engl 317 Tech & Engr Report Writing or 313 Business Writing 3
For 383 Economics for Natural Resource Managers or AgEc 451 Land & Natural Resource Economics 3
For 462 Watershed Management 3
For/Rnge/WLF/Fish/RRT/ForP 470 Interdisciplinary Natural Resource Planning 3
Soil 454 Soil Development & Classification 3
One of the following 2-3
- Bot 441 Agrostology
- For 375 Aerial Photo Interpretation
- ForP 230, 231, 232 Forest Land Measurement & For 274 Forest Measurement Techniques

Approved electives from ecology or management areas 9
Electives to total 128 credits ..... —

Religious Studies

Nicholas F. Gier, Coordinator (405 Morrill Hall 83844-3016; phone 208/885-6284). Faculty: Janice Capel Anderson, Virginia M. Babcock, Nicholas F. Gier, W. Kent Hackmann, Walter A. Hesford, Ellen E. Kittell, Cecelia E. Luschnig, Kerry E. McKeever, Louis A. Perraud, Laura Putsche, John K. Yost. Affiliate Faculty: Kip W. Jenkins, Bruce G. Wollenberg.

The academic study of religion has deep roots in Western intellectual history. One cannot adequately grasp the full dynamics of world culture without attending to the role of religion. In the last hundred years scholars in the West have paid increasing attention to non-Western religions and to the category of "religion" itself as a dimension of human experience.

Religious studies courses do not encourage or discourage religious belief; rather, they engage in the academic study of religion as a crucial element of human culture. Religious studies employs a variety of methods including anthropological, sociological, historical, philosophical, phenomenological, literary, and linguistic approaches. The principal goal of religious studies is submitting sacred texts and traditions to descriptive, analytical, critical, and empathetic scrutiny.

In terms of employment potential, a religious studies minor primarily serves a student in the same way that history or philosophy might. It increases a student's understanding of persons and cultures. Key liberal arts skills in close reading, analysis, research, and oral and written communication are central to religious studies. Some students will use religious studies to enhance their chances of acceptance in graduate programs in areas such as anthropology, sociology, social work, international relations, history, or various area studies. Others may use the minor as a broadly based stepping stone for professional training in theological seminaries or rabbinical schools.

Courses

See part 6 for courses in Religious Studies (RelS).

Academic Minor Requirements

RELIGIOUS STUDIES MINOR

Courses in religious traditions chosen from the following (at least 3 cr in Asian and Pacific Religious Traditions and at least 3 cr in Western Religious Traditions) 9

Asian and Pacific Religious Traditions
- Hist 180 Introduction to East Asian History
- Hist 483 Traditional Chinese Civilization
- Phil 306 Hindu Thought
- Phil 307 Buddhism
- Phil 308 Confucianism & Taoism
- RelS 204/404 Special Topics related to this category

Western Religious Traditions
- Hist 442 The Medieval Church
- Hist 447 The Age of the Renaissance & Reformation
- Phil 302 Biblical Judaism: Texts & Thought
- Phil 303 Early Christianity: Texts & Thought
- RelS 201 Introduction to Islam
- RelS 204/404 Special Topics related to this category
- RelS 321 Twentieth Century Theology

Courses in approaches to religious studies and religion and culture chosen from the following (at least 3 cr in Approaches to Religious Studies and at least 3 cr in Religion and Culture) 9

Approaches to Religious Studies
- Anth 327 Belief Systems
- Engl 375 The Bible as Literature
- Phil 305 Philosophy of Religion
- RelS 101 Introduction to Religious Studies
- RelS 204/404 Special Topics related to this category
- Soc 414 Development of Social Theory

Religion and Culture
- Anth 329 North American Indians
- Anth 426 Anthropology of China
- FLEN 211 Classical Mythology (Gods)
- FLEN 212 Classical Mythology (Heroes)
- FLEN 441 Ancient Greek Civilization
- FLEN 442 Civilization of Ancient Rome
- Hist 101-102 History of Civilization
- Hist 457 History of the Middle East
- Phil 202 Belief & Reality
- Phil 300 Existentialism
- Phil 309 History of Ancient Philosophy
- Phil 310 History of Modern Philosophy
- RelS 133 Religion & Family
- RelS 204/404 Special Topics related to this category
- RelS 322 Religious Movements in America

Foreign languages appropriate to the minor are strongly recommended. For example, Japanese or Chinese is recommended for concentration in Asian and Pacific traditions, and Greek or Latin for those focusing on Western traditions.

Department of Resource Recreation and Tourism

John D. Hunt, Dept. Head (19 FWR Bldg. 83844-1139; phone 208/885-7911; e-mail rrt@uidaho.edu). Faculty: James R. Fazio, Sam H. Ham, Charles C. Harris, John C. Hendee, John D. Hunt, Edwin E. Krumpe, William J. McLaughlin, Nick Sanyal. Adjunct Faculty: Terry R. Armstrong, Gary E. Machlis, Michael R. Whiteman. Affiliate Faculty: Stewart Allen, James R. Barborak, David N. Cole, LuVerne D. Grussing, James C. Halfpenny, Bjorn P. Kaltenborn, Kenneth W. Kendall, Craig G. MacFarland, Mary McGown, Richard A. Meganck, Richard L. Shew, James Tangen-Foster, Thom A. Votaw, George N. Wallace.

Programs in the Department of Resource Recreation and Tourism involve the study of land and its natural resources, the people who use resources for recreational purposes, and the private and governmental institutions that determine how land will be managed. This discipline is an outgrowth of increasing public interest in outdoor recreation and nature tourism that ranges from wilderness

backpacking and river floating to hang-gliding, cruising, and enjoying the comforts of a resort. The ever-increasing variety of demands and conflicts, and the growing numbers of tourists in all age and cultural groups, has created unprecedented pressures on recreation resources. At the same time outstanding opportunities are being created for the tourism industry. Modern recreation and tourism management attempts to reconcile conflicts and ensure high-quality opportunities of all kinds while at the same time protecting natural, social, and cultural resources for the future.

The educational objective of this curriculum is to provide men and women with the knowledge, skills, and confidence needed to handle a wide array of professional opportunities now available in resource-based recreation and tourism. Students receive a solid educational foundation by studying natural resources and their management. This is coupled with courses in the human dimensions of resource use, including a strong emphasis in communication and business. In addition, experiencing outdoor recreation and tourism is emphasized, as well as learning firsthand about its management.

Graduates find employment in private businesses, in county, state, and national parks, in educational institutions, and in a variety of resource-management agencies such as the U.S. Forest Service, Bureau of Land Management, National Park Service, and others. Some students combine their education in resource recreation and tourism with a second degree in forest, wildlife, or range management to broaden their employability even further. Still others select a foreign language to prepare for work at the international level.

It is department philosophy that graduates should be prepared for the entire spectrum of resource recreation and tourism career opportunities. Careers, however, usually begin in one of five general areas: recreation resource management, natural resource communication, wilderness and nature conservation, tourism and leisure enterprises, or outdoor recreation leadership. Students must select one of the four departmental minors, any other university minor, or develop a block of 12 credits of approved electives to provide depth in an area related to resource recreation and tourism management.

Faculty members in the department have been chosen to ensure that students can receive instruction and counsel in the entire spectrum of resource recreation and tourism. Advisers are matched, accordingly, with students' career interests.

The B.S. in resource recreation and tourism prepares qualified students for advanced degrees in most recreation resource, park and recreation, or tourism graduate programs. The department offers the M.S. and Ph.D. degrees, with concentrations in the same areas as the undergraduate options, with the addition of international studies and other highly interdisciplinary areas of research and education related to resource recreation and tourism.

For additional information, consult the department head (telephone 208/885-7911).

Courses

See part 6 for courses in Resource Recreation and Tourism (RRT).

Curricular Requirements

RESOURCE RECREATION AND TOURISM (B.S.Res.Rc.)

A total of 128 credits is required for the degree. This includes the university requirements (see regulation J-3), and the course work listed below. Students must select any academic minor (including those in the Department of Resource Recreation and Tourism) or a list of at least 12 credits of electives approved in advance by the adviser to complete credit requirements. Students are also required to do an adviser-approved internship.

First and Second Years

RRT 287 Principles of Resource Recreation & Tourism Management 2
RRT 303, 304 Resource Recreation & Tourism Field Studies I, II 3
RRT 310, 311 Leisure Services Research & Evaluation & Lab 4
ASM 240 Computer Applications in Biol Systems or Bus 250 Introductory Systems Development or CS 101 Intro to Computer Science 3
Biol 201 Introduction to the Life Sciences 4
Biol 203 General Botany 4
Chem 101 Introduction to Chem I or Chem 111 Principles of Chem I 4
ComG 101 Fundamentals of Public Speaking 2
For/Rnge/WLF 221 Natural Resources Ecology 3
For/RRT/Soc 235 Society & Natural Resources 3
For/Rnge/WLF/RRT/Fish/ForP 301, 302 Wildland Field Ecology I, II 3
For 375 Aerial Photo Interpretation or LArc 385 GIS Primer or Geog 385 GIS Primer 3
Geol 101 Physical Geology 4
Math 130 or 143 or 160 or 170 3-4
PolS 101 Intro to Political Science & American Government 3
Psyc 101 Introduction to Psychology 3
Soc 101 Introduction to Sociology 3
Stat 251 Principles of Statistics or 301 Probability & Statistics 3
Three of the following 6
- Fish 290 Principles of Fish Biology & Management
- For 270 Principles of Forest Ecosystem Management
- ForP 250 Principles of Forest Products
- Rnge 251 Principles of Range Resources Management
- WLF 290 Principles of Wildlife Biology

Electives or courses in minor 6

Third and Fourth Years

RRT 385 Resource Recreation & Tourism Management 3
RRT 386 Resource Recreation & Tourism Planning 3
RRT 387 Environmental Interpretive Methods 3
RRT 398 Internship 1-3
RRT 484 Management of Recreation Sites & Leisure Settings 2
RRT 489 Personalities & Philosophies in Conservation 2
RRT 494 Resource-Based Public Relations & Marketing 3
Bot 241 Systematic Botany or For 320 Dendrology 3
Econ 201 or 202 Principles of Economics 3
Engl 313 Business Writing or Eng 317 Technical & Engr Report Writing 3
For/Rnge/WLF/Fish/RRT/ForP 470 Interdisciplinary Natural Resource Planning 3
Any course numbered 300 or above in sociology or psychology or one of the following 3
- Bus 311 Introduction to Management
- Bus 321 Marketing
- Bus 324 Consumer Behavior
- Bus 327 Services/Nonprofit Marketing
- FCS 436 Theories of Child & Family Development
- FCS 440 Contemporary Family Relationships
- FCS 445 Issues in Work & Family Life
- FCS 448 Consumer Education
- FCS 460 Family as an Ecosystem

Electives to total 128 cr for the degree ..... —

Academic Minor Requirements

NATURAL RESOURCE COMMUNICATION MINOR

Comm 121 Media Writing 3
RRT 387 Environmental Interpretive Methods 3
RRT 486 Public Involvement in Natural Resource Management 3
RRT 487 Field Environmental Education 3
RRT 488 Interpretive Methods Lab 3
An elective in public relations 3
At least one course from the following 3
- ComG 347 Persuasion
- Comm 265 Advertising & Society
- Comm 275 Introduction to Video Production
- Comm 281 Understanding Photography
- Comm 360 Broadcast Media Advertising
- Comm 362 Print Media Advertising
- Comm 425 Feature Article Writing

OUTDOOR RECREATION LEADERSHIP MINOR

RRT 287 Principles of Resource Recreation & Tourism Management or RRT 490 Wilderness Management 2-3
RRT 387 Environmental Interpretive Methods 3
RRT 403 Workshop: Wilderness Vision Questing or RRT 491 Use of Wilderness Environments for Personal Growth 2-3
RRT 487 Field Environmental Educ or Rec 420 Experiential Educ 2-3
Rec 125 Outdoor Leisure Pursuits 2
Rec 320 Outdoor Recreation Leadership 2
Rec 321 Wilderness Medicine & Evacuation or H&S 288 First Aid: Emergency Response or other approved medical emergency course 1-2
Courses selected from the following 7
- PE 106 Individual & Dual Sports: Fly Tying/Casting (1 cr)
- PE 108 Swimming: Scuba (1 cr)
- Rec 220 Rock Climbing
- Rec 221 Mountaineering
- Rec 222 Cross Country Skiing
- Rec 223 Winter Camping
- Rec 224 Whitewater Rafting
- Rec 225 Kayaking
- Rec 226 Whitewater Canoeing
- Rec 227 Mountain Biking
- Rec 255 Backpacking & Camping Skills
- Rec 270 Big Game Hunting Techniques & Safety
- RRT/Rec 204 Approved Special Topic course
- Technical competency (contact dept) (max 4 cr)

TOURISM AND LEISURE ENTERPRISES MINOR

Bus 321 Marketing 3
RRT/Rec 181 Introduction to Hospitality Services Industries 3
RRT 381/Rec 382 Hospitality Management & Organization 3
RRT 494 Resource-Based Public Relations & Marketing 3
Rec 340 Leisure & Tourism Enterprises 3
One course selected from the following 2-3
- RRT 386 Resource Recreation & Tourism Planning
- RRT 236/Rec 235 Principles of Tourism
- RRT 398 Internship
- Rec 204/Rec 280 Special Topics/Practicum
- Rec 486 Recreation Program Planning & Marketing I

WILDERNESS AND NATURE CONSERVATION MINOR

For 205, 206 Wildland Resource Conservation & Lab
or (for majors) 301, 302 Wildland Ecology I, II 3-4
RRT 489 Personalities & Philosophies in Conservation 2
RRT 490 Wilderness Management 3
RRT 492 International Land Preservation Systems 3
RRT 493 International Issues in Nature Conservation 3
RRT 496 Monitoring Human Impacts in Wilderness 3

Department of Sociology and Anthropology

Donald E. Tyler, Dept. Chair (101 Phinney Hall 83844-1110; phone 208/885-6751).

Anthropology Faculty: Laura Putsche, R. Lee Sappington, Roderick Sprague, Donald E. Tyler. Adjunct Faculty: Leo L. Flynn.

Crime and Justice Studies Faculty: Ronald S. Everett.

Sociology Faculty: Ginna M. Babcock, Eric L. Jensen, Robert G. Martin. Adjunct Faculty: John E. Carlson, Gary E. Machlis.

Sociology and anthropology are the two social sciences that seek to understand and explain the shared behavior of people in organized groups or societies. Sociology is largely concerned with the study of western civilization as a system, particularly as regards a description of American society and how it operates today. Anthropology is concerned with the study of humanity as a part of the natural world, and of culture that developed to cope with that world. Anthropologists have dealt largely with prehistoric and primitive or simple societies and cultures in an effort to arrive at an understanding of universal cultural laws. Increasingly, anthropologists are applying basic concepts to the study of modern, complex societies. Majors are encouraged to take courses in the other social sciences (economics, cultural geography, political science, and psychology) and in the humanities (history, philosophy, and the arts) as well.

The department offers a separate degree program for students interested in criminology and criminal justice. This major is designed as an interdisciplinary program of study incorporating courses in sociology, psychology, and political science. Courses are also offered through a cooperative arrangement with Washington State University. This program provides academic training in preparation for careers throughout the justice system, including justice and social policy research, as well as preparing students for graduate and professional schools. Field experience in the form of internships is available during the student's senior year.

The department offers the B.A. and B.S. degrees in anthropology, crime and justice studies, and sociology. Artifact collections, laboratories, and other facilities are conveniently available to anthropology majors. Graduates of the department can consider a wide range of employment possibilities, about which information can be obtained from the faculty.

While intending to embrace the fields in their entirety, the department has major strengths in particular areas. Students are encouraged to seek these out in consultation with the faculty. This is especially important for graduate students wishing to pursue the M.A. degree, about which more information will be found in the *Graduate Catalog*. Questions concerning courses and degree programs should be addressed to the chair, Department of Sociology/Anthropology, Moscow, ID 83844-1110 (208/885-6751).

Courses

See part 6 for courses in Anthropology (Anth), Crime and Justice Studies (CJ), and Sociology (Soc).

Curricular Requirements

ANTHROPOLOGY (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and:

Anth 100 Introduction to Anthropology 3
Anth 220 Peoples of the World 3
Anth 230 World Prehistory 3
Anth 231 Introduction to Archaeology 3
Anth 251 Introduction to Physical Anthropology 3
Anth 414 Development of Social Theory 3
Anth 420 Anthropological History & Theory 3
Anth 428 Social & Political Organization 3
Anth 441 Introduction to Study of Language 3
Soc 101 Introduction to Sociology 3
Soc 410 Methods of Social Research 3
Stat 251 Principles of Statistics 3
Anthropology electives (upper-division) 9
Related fields as approved by the department 15

CRIME AND JUSTICE STUDIES (B.A. or B.S.)

Note: Crime and justice studies majors must obtain a minimum GPA of 2.50 before they are allowed to take upper-division CJ courses.

A total of 60 credits, from the required and elective list, must be completed in order to satisfy the departmental requirements for the crime and justice major.

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. or B.S. degree, and:

CJ 101 Introduction to the Justice System 3
CJ 320* Police, Society, & Justice or 332* Corrections 3
CJ 325 Criminal Law 3
CJ 401 Justice Policy Issues 3
CJ 422* Race, Gender, & Class in the Justice System or
Soc 322* Racial & Ethnic Relations 3
Engl 209 Inquiry-Based Writing 3
Phil 103 Ethics 3
PolS 467* Constitutional Law or PolS 468* Civil Liberties or
469* The Judicial Process 3
Soc 101 Introduction to Sociology 3
Soc 330* Juvenile Delinquency or 331* Criminology 3
Soc 410 Methods of Social Research 3
Stat 251 Principles of Statistics or Stat 150 Intro to Statistics 3
Electives chosen from the following (including 15 upper-division credits excluding internship) (if the student takes CJ 498 for 6 cr, he or she needs 18 credits of electives) 24
- CJ 150 Organizational Environment of Criminal Justice
- CJ 330 Crime Control Policies
- CJ 365 Juvenile Justice & Corrections
- CJ 370 The Police & Society
- CJ 405 Comparative Criminal Justice Systems
- CJ 420 Law of Evidence & Criminal Procedure
- CJ 498 Internship
- Anth 451 Forensic Anthropology
- H&S 311 Acquaintance Rape
- Phil 410 Philosophy of Law
- PolS 101 Introduction to Political Science & American Government
- PolS 275 American State & Local Government
- PolS 451 Public Administration
- PolS 452 Administrative Law & Regulation
- PolS 454 Public Organization Theory
- PolS 460 Law & Society
- Psyc 311 Abnormal Psychology
- Psyc 320 Introduction to Social Psychology
- Soc 230 Social Problems
- Soc 313 Collective Behavior
- Soc 320 Sociology of Substance Abuse
- Soc 322 Racial & Ethnic Relations
- Soc 323 Social Stratification
- Soc 325 Sociology of the Family
- Soc 423 Sociology of Gender
- Soc 430 Deviance
- Soc 434 Family Violence
- Soc 453 Sociology of Mental Health

*May be used as an elective if not counted as required course.

SOCIOLOGY (B.A.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and the following courses (electives must be approved by the student's adviser):

Soc 101 Introduction to Sociology 3
Soc 230 Social Problems 3
Soc 410 Methods of Social Research 3

Soc 412 Society & Personality 3
Soc 414 Development of Social Theory 3
Anth 100 Introduction to Anthropology 3
Stat 251 Prin of Statistics or 150 Intro to Statistics 3
Sociology electives (upper-division, max 3 cr each for Soc 315 or 498) 21
Related fields (the more common areas incl anthro, econ, geog, hist, political sc, and psych) 18

Students who wish to emphasize human services add the following requirements:

Soc 240 Introduction to Human Services 3
Courses chosen from the following (upper-division courses will be applied to the sociology upper-division elective requirement listed above 12
- Soc 209 Alternatives to Violence (ATV) Training
- Soc 315 Community Service Learning
- Soc 320 Sociology of Substance Abuse
- Soc 322 Racial & Ethnic Relations
- Soc 325 Sociology of the Family
- Soc 330 Juvenile Delinquency
- Soc 431 Personal & Social Issues in Aging
- Soc 434 Family Violence
- Soc 443 Medical Sociology
- Soc 453 Sociology of Mental Health
- Soc 498 Internship

SOCIOLOGY (B.S.)

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.S. degree, and the following courses (electives must be approved by the student's adviser):

Soc 101 Introduction to Sociology 3
Soc 230 Social Problems 3
Soc 410 Methods of Social Research 3
Soc 412 Society & Personality 3
Soc 414 Development of Social Theory 3
Anth 100 Introduction to Anthropology 3
Stat 251 Prin of Statistics or 150 Intro to Statistics 3
Sociology electives (upper-division, max 3 cr each for Soc 315 or 498) 21
Related fields (the more common areas incl anthro, econ, geog, hist, political sc, and psych) 18
Math electives (excluding Math 235-236) 3-4
Two courses from the following 6
- Biol 100 Introduction to Biology
- Biol 201 Introduction to the Life Sciences
- Biol 351 General Genetics
- CS 112 Introduction to Problem Solving & Programming
- EnvS 101 Introduction to Environmental Science
- MMBB 154 Principles of Microbiology
- Phil 412 Philosophy of Science
- Stat 401 Statistical Analysis (or advanced statistics course)
- Zool 120 Human Anatomy

Students who wish to emphasize human services add the following requirements:

Soc 240 Introduction to Human Services 3
Courses chosen from the following (upper-division courses will be applied to the sociology upper-division elective requirement listed above) 12
- Soc 209 Alternatives to Violence (ATV) Training
- Soc 315 Community Service Learning
- Soc 320 Sociology of Substance Abuse
- Soc 322 Racial & Ethnic Relations
- Soc 325 Sociology of the Family
- Soc 330 Juvenile Delinquency
- Soc 431 Personal & Social Issues in Aging
- Soc 434 Family Violence
- Soc 443 Medical Sociology
- Soc 453 Sociology of Mental Health
- Soc 498 Internship

Academic Minor Requirements

ANTHROPOLOGY MINOR

Anth 100 Introduction to Anthropology 3
Two courses from the following 6
- Anth 220 Peoples of the World
- Anth 230 World Prehistory
- Anth 231 Introduction to Archaeology
- Anth 251 Introduction to Physical Anthropology

Three upper-division anthro courses, incl at least one 400-level course 9

CRIME AND JUSTICE STUDIES MINOR

CJ 101 Introduction to the Justice System 3
CJ 320 Police, Society & Justice or 332 Corrections 3
CJ 325 Criminal Law 3
Phil 103 Ethics 3
Soc 330 Juvenile Delinquency or 331 Criminology 3
Two or more of the following to total at least 21 cr for the minor:
- CJ 401 Justice Policy Issues
- CJ 422 Race, Gender, & Class in the Justice System
- PolS 467 Constitutional Law
- PolS 468 Civil Liberties
- PolS 469 Judicial Process
- Psyc 311 Abnormal Psychology
- Psyc 320 Introduction to Social Psychology
- Soc 235 Society & Natural Resources
- Soc 322 Racial & Ethnic Relations
- Soc 423 Sociology of Gender
- Soc 434 Family Violence

SOCIOLOGY MINOR

Soc 101 Introduction to Sociology 3
Soc 230 Social Problems or 220 Marriage & the Family 3
Soc 410 Methods of Social Research or research methods course acceptable to student's major field 3
Sociology electives (9 cr must be in upper-division courses) 12

Division of Statistics

C. Randall Byers, Interim Division Director (415 Carol Ryrie Brink Hall 83844-1104; phone 208/885-7341). Faculty: C. Randall Byers, Raymond Dacey, Brian C. Dennis, Judith Doerann, Edward O. Garton, Donald F. Haber, Joel R. Hamilton, Paul Joyce, John J. Lawrence, Stephen S. Lee, R. Ashley Lyman, William T. Mickelson, Kenneth B. Newman, Bahman Shafii, R. Kirk Steinhorst, Christopher J. Williams.

Statistics encompasses course work in designing and analyzing experiments, planning and interpreting surveys, and exploring relationships among variables observed on social, physical, and biological phenomena. The applied nature of the program allows the student to develop data analysis tools for such diverse areas as business and economics, crop and animal production, biological sciences, human behavior, education, engineering, and natural resource management. The statistics program thus supports major programs in other disciplines. Within the Department of Mathematics, a statistics option is available under applied mathematics leading to a baccalaureate degree. An M.S. degree in statistics is offered by the Division of Statistics at the graduate level.

Faculty members in the Division of Statistics will be happy to answer questions about specific programs and courses. Such questions can also be addressed to the division director (Brink 415; telephone 208/885-7341).

Courses

See part 6 for courses in Statistics (Stat).

Academic Minor Requirements

STATISTICS MINOR

Stat 251 Prin of Statistics or 301 Probability & Statistics 3
Stat 401 Statistical Analysis 3
Stat 422 Sampling Methods 2
Math 160 Survey of Calculus or 170 Analytic Geometry & Calculus 4
Math 330 Linear Algebra 3
Two of the following courses 5-6
- Stat 433 Econometrics
- Stat 437 Statistics for Business Decisions
- Stat 456 Quality Management
- Stat 457 Nonparametric Statistics or 514 Nonparametrics
- Math 451 Probability Theory & Math Statistics

Division of Teacher Education

Lowell D. Jackson, Div. Director (405C Educ. Bldg. 83844-3082; 208/885-5707). Faculty: George F. Canney, Jack L. Dawson, Judith Doerann, Sid Eder, John Fodor-Davis, Karen P. Guilfoyle, Lowell D. Jackson, Georgia Johnson, Gwendolyn N. Kelly, Joseph T. Kelly, Sally G. Machlis, Elinor L. Michel, Kris Michelson, Jack K. Nelson, Michael R. L. Odell, Melvin J. Pedras, Richard Pollard, Elizabeth Popiel, Wayne D. Schmidt, Florence A. White.

The Division of Teacher Education includes programs for elementary and secondary education and the Departments of Educational Administration and Special Education.

Effective schools require teachers at the elementary and secondary levels who are reflective practitioners who can adapt instruction to the educational and cultural background, motivation and individual capabilities and needs of students. The preparation of a teacher

involves substantial knowledge of instructional content and general instructional strategies, as well as special methods for teaching specific content or students with special needs.

The division provides the professional and foundational courses that meet the general requirements for initial certification in elementary and secondary teaching. Specialized course work and field experience leading to certification in elementary education and secondary education are also provided.

The undergraduate program in elementary education prepares teachers for elementary schools by providing theory and practice in instructional strategies and the acquisition of teaching competencies in reading and language arts, mathematics, science, social studies, art, and music. Professional preparation also emphasizes the study of the child and an understanding of historical, philosophical, and psychological foundations of teaching and learning. Specializations in early childhood education and special education are available within the B.S.Ed. degree program in elementary education.

The undergraduate program in secondary education prepares teachers for secondary schools by providing theory and practice in instructional strategies and the acquisition of teaching competencies in the following subjects as currently taught in secondary schools: English, social studies, sciences, mathematics, art, and foreign languages. Students also complete teaching majors or minors in the subject area(s) in which teaching certification is desired. A student in secondary education may earn either a B.S.Ed. degree through the College of Education or, alternatively, a B.A. or B.S. degree through the department and college administering the academic major.

Professional education course work is conducted in the Education Building and in the public schools. The Education Building houses preschool and kindergarten classrooms; specialized facilities for microteaching; laboratories for special methods courses in mathematics, art, social science, and natural sciences; and the Instructional Materials Center, which contains a comprehensive curriculum library as well as children's literature and special education materials.

The division provides advanced professional and foundational courses that support graduate programs in the College of Education. Advanced programs in the Division of Teacher Education are (a) the Advanced Certification (planned fifth year) programs; (b) master's degree programs (either Master of Education or Master of Science) in elementary education and secondary education, which result in an Advanced Elementary or Secondary Certificate; (c) specialist degree programs in education, with emphases in elementary education, secondary education, and supervision and instructional leadership; and (d) doctoral degree programs (either Doctor of Education or Doctor of Philosophy) with emphases in elementary education, secondary education, and supervision and instructional leadership.

Courses

See part 6 for courses in Library Science (LibS) and Teacher Education (EDTE).

Curricular Requirements

ELEMENTARY EDUCATION (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3), the general requirements for students preparing to teach at the elementary level (see College of Education section in part 4), and:

EDTE 326 Elementary School Mathematics Education 3
EDTE 336 Reading in the Elementary School 4
EDTE 338 Children's Literature 3
EDTE 375 Elementary School Art Methods 3
EDTE 420 Language, Learning, & Literacy Development 3
EDTE 421 Elementary School Social Studies Methods 2
EDTE 444 Elementary School Science Methods 2
MusT 381 (EDTE 381) Elementary School Music Methods I 3
PE 250 Elementary Physical & Health Education 3
One of the following 2-3
Dan 112 Recreational Dance Forms
Dan 220 Children's Dance
Dan 404 ST: Creative Movement in the Elementary Classroom
MusT 389 Orff & Kodaly
TheA 105 Basics of Performance

SECONDARY EDUCATION (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3), the general requirements for students preparing to teach at the secondary level (see College of Education section in part 4), one course in special methods applicable to secondary schools (EDTE 474, 475, 476, 477, 478, 479, H&S 323, or another approved special methods course), Literacy Methods for Content Learning (EDTE 463), and the satisfactory completion of one of the following options selected from the list headed "Teaching Majors and Minors" in the College of Education section, above:

A. Two 30-credit teaching majors.
B. One 40-credit teaching major and one 20-credit teaching minor.
C. One 30-credit teaching major and two 20-credit teaching minors.
D. One 60-credit teaching major.

Department of Educational Administration

Carolyn Keeler, Dept. Coord. (UI Boise Center, 83712-7742; phone 208/334-2999). Faculty: Gary C. Alexander, Jack L. Dawson, Gary Delka, Judith Doerann, Lowell D. Jackson, Carolyn Keeler, Roger Reynoldson, Michael E. Tomlin.

The Department of Educational Administration provides programs for the preparation of school administrators and for persons interested in teaching or administration in institutions of higher learning. Master's, specialist, and doctoral degrees may be earned in the department.

It is widely acknowledged that leadership is a key ingredient in effective schools. The development of leadership capabilities is enhanced by systematic study of factors that contribute to the human, conceptual, and technical skills required for effective leadership.

The department offers an array of courses that draw on significant research and practice in management and the supervision of instruction. The preparation for prospective school principals includes courses in personnel administration, the principalship, research interpretation and use, the organization and administration of schools in America, supervision, school law, curriculum design, and interpersonal relations. Certification as a school principal accompanies successful completion of master's degree requirements in school administration.

At the specialist degree level, the training emphasis is focused on superintendent certification for students who have master's degrees in administration. Students with master's degrees in related fields may achieve principal certification with a specialist degree.

The specialist degree further expands leadership training in school/community relations, school facilities planning, school finance, curriculum evaluation, and theory in administration. Persons seeking certification in these programs must also enroll as interns for two semesters. All certification and degree programs require comprehensive examinations.

At the doctoral level, the department offers individualized programs of study leading to Ed.D. or Ph.D. degrees. Programs may be directed to administration or teaching in higher education or toward significant leadership positions in public schools and other related agencies.

Persons interested in degree programs or administrative certification programs should contact the dean of the College of Education or members of the departmental faculty.

Courses

See part 6 for courses in Educational Administration (EdAd).

Department of Special Education

Jeanne Christiansen, Dept. Coord. (111 Education 83844-3081 ; phone 208/885-6159). Faculty: Diane M. J. Baumgart, Jeanne Christiansen, N. Dale Gentry, Jennifer J. Olson, A. Lee Parks. Adjunct Faculty: Mary T. Bostick, Julie Fodor-Davis, Robin Greenfield, Ron Seiler. Affiliate Faculty: Hazel E. Bauman, Joy Byram, James L. Christiansen, James Heidelberger, Thomas D. McFarland, Patrick P. Pickens, Linda K. Powers, Peggy Scuderi, Paul Swatsenberg, James E. Topp, Robert C. West, John Zimbelman.

The special education program offers professional preparation at the undergraduate and graduate levels. The undergraduate program prepares teachers to work with students who have intellectual,

emotional and/or behavioral, language, sensory and/or physical disabilities. Special education is characterized by the study of learning, motivation, and curriculum principles that, when applied systematically, result in enhanced academic, social, vocational, and leisure competence. The content focuses on the application of best practices in service delivery, the selection and arrangement of teaching environments for maximum learning, and systematic evaluation of student performance.

At the master's level, the program emphasizes preparation in general special education, low incidence (severe) disabilities, early childhood special education, program administration and consultation. The specialist degree is designed to prepare personnel in the consulting, supervisory, and administrative competencies needed for leadership roles in public school special education programs. The doctoral program prepares special educators for positions of leadership in schools, state agencies, colleges, and universities. Major emphasis is placed on research, university level teaching, and systems change.

Degrees available in special education include: B.S. in Education, Master of Science (M.S.), Master of Education (M.Ed.), Specialist in Special Education, Doctor of Philosophy (Ph.D.), and Doctor of Education (Ed.D.). The programs are certified by the National Council for the Accreditation of Teacher Education (NCATE) and National Association of State Directors of Teacher Education and Certification (NASDTEC). Teaching endorsements may be obtained in the areas of general special education, severe disabilities, early childhood special education, consulting teacher, and special education director.

Faculty members in the department are available to discuss programs in detail with interested persons. Requests for information or appointment can be made by letter or telephone call (208/885-6159) to the department.

Courses

See part 6 for courses in Special Education (EDSP).

Curricular Requirements

SPECIAL EDUCATION (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3), the general requirements for students preparing to teach at the elementary or secondary level, and the following courses (which will qualify the student for the Exceptional Child Certificate and Generalist K-12 endorsement):

EDSP 190, 290, 390 Special Education/Field Experience (1 cr each) 3
EDSP 275 Education of People with Disabilities 3
EDSP 280 Classroom Applications of Learning Theories 3
EDSP 377 Designing Instructional Programs 2
EDSP 378 Curriculum Development & Adaption 3
EDSP 421 Family & Community Involvement 3
EDSP 425 Evaluation of Children & Youth 2
EDSP 450 Students with Behavioral & Emotional Issues 3
EDSP 480 or EDSP 480 and ED 430 or EDSP 480 and ED 431 Practicum 14
EDSP 487 Language & Communication Development & Disorders 3

Students with a single major in special education also take:

EDTE 326 Elementary School Mathematics Education 3
EDTE 336 Reading in the Elementary School 4
EDTE 402 Practicum: Field Experience in Public School Settings 1
EDTE 420 Language, Learning, & Literacy Development 3

Department of Theatre Arts

Charles S. Ney, Dept. Chair (U-Hut 102 83844-3072; phone 208/885-6465). Faculty: Bruce C. Brockman, John David Lee-Painter, Charles S. Ney, Michelle S. Ney, Dean F. Panttaja, Forrest E. Sears.

The study of theatre encourages the development of the whole person. Through performance, students gain a deeper understanding of themselves and human behavior; through design, students learn how to manipulate space, lighting, color, and texture; through the study of drama as an educational tool, students learn how to use the elements of theatre as performance, as well as drama as process. Because theatre encompasses so many disciplines, it is an excellent way of enhancing a general education, encouraging artistic sensitivity, and teaching students to work in collaboration with fellow artists.

The theatre curriculum at UI leads to a B.A., B.S., or B.F.A. degree and provides a broad base from which students may pursue a number of different career options. All students are required to complete a core of courses ensuring general competency in all areas of theatre. Those wishing to specialize in a particular aspect of theatre are able to do so through the use of electives. The Bachelor of Fine Arts degree is offered to those students who wish to embark on professional careers in theatre. Requirements are stringent and include constant monitoring of the student's progress. The student is an integral part of the department production process, fostering a close relationship with the theatre faculty and enabling the student to experience the kind of growth that comes through working with professional artists.

In the Hartung Theatre, UI has one of the finest theatre facilities in the Northwest. The 419-seat, semithrust theatre is complemented by one of the best equipped shops, costume inventories, and lighting and sound systems in the region. Additionally, the Jean Collette Theatre, with 89 seats, is fully equipped and is a laboratory space in which student actors, directors, and technicians may experiment and develop their skills.

Graduate study at UI emphasizes acting, directing, design, and technical theatre. The department's size permits graduate students to take an active part in the process of theatre production. If qualified, students may be asked to assist the instructors in the teaching of basic skills to undergraduate students. The department emphasizes the creative thesis for the degree and graduate students have designed and directed major productions at the university.

Students interested in pursuing a degree in theatre and who have further questions about the program should feel free to consult the department (telephone 208/885-6465).

Courses

See part 6 for courses in Theatre Arts (TheA).

Curricular Requirements

THEATRE ARTS (B.A. or B.S.)

Students taking B.A./B.S. or B.F.A. options in theatre arts must achieve a minimum grade of C in each theatre course taken to fulfill a requirement in the major before the student will be eligible for graduation. Students must maintain a minimum 2.00 overall GPA to be eligible to participate in departmental productions.

Required course work includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and:

TheA 102 Theatrical Make-up 3
TheA 103, 104 Theatre Technology I, II 4
TheA 105-106 Basics of Performance 6
TheA 190 Theatre Practice I 2
TheA 201 Scene Design I 3
TheA 202 Costume Design I 3
TheA 205 Lighting Design I 3
TheA 305 Intermediate Acting 3
TheA 320 Theatre Management 2
TheA 371 Play Analysis 3
TheA 467-468 The Theatre 6
TheA 469 Modern Theatre 3
TheA 471 Directing 3
Electives in acting/directing (upper-division) 6
Electives in design/production 6
Courses in a related field approved by dept chair or established minor 20

THEATRE ARTS (B.F.A.)

The Bachelor of Fine Arts degree is an intense training program for students wishing to pursue a career in the professional theatre. It is divided into four specific areas of study within an area of concentration. Areas of concentration include but are not limited to: acting, technical production, and scenery, lighting, or costume design. Individual courses are chosen by the student and his or her adviser within those categories, allowing the degree to be tailored to the student's specific needs. Student progress is monitored each semester through performance juries and portfolio reviews. Students in the B.F.A. program are encouraged to take internships with professional theatre companies in the region as part of their program of study.

Students taking B.A./B.S. or B.F.A. options in theatre arts must achieve a minimum grade of C in each theatre course taken to fulfill a requirement in the major before the student will be eligible for graduation. Students must maintain a minimum 2.00 overall GPA to be eligible to participate in departmental productions.

Required course work includes the university requirements (see regulation J-3) and the departmental requirements for the B.S. or B.A., except that an approved related field or established minor is not required for the B.F.A. degree. Additional requirements include:

STUDIO AREA - 12-20 credits
A minimum of 12 credits is taken in course work directly related to the area of specialization. Students with a performance specialization are required to take an additional 8 credits.

RELATED STUDIO - 4-9 credits
A minimum of 4-9 credits is taken in a related studio area that generally pertains directly to the student's area of specialization.

CRAFT AREA - 11 credits
A minimum of 11 credits is taken in courses to develop specific craft skills associated with the studio area.

HISTORY/LITERATURE/CRITICISM - 3 credits
A minimum of 3 credits is taken in history of literature courses that relate directly to the studio area. Courses used to fulfill university and department core requirements may not be used to satisfy this requirement.

Academic Minor Requirements

TECHNICAL THEATRE MINOR

TheA 103, 104 Theatre Technology I, II 4
TheA 201 Scene Design I 3
TheA 202 Costume Design I 3
TheA 205 Lighting Design I 3
TheA 390 Theatre Practice II 2
TheA 464 Scenographic Techniques 3

THEATRE ARTS MINOR

TheA 102 Theatrical Make-up 3
TheA 103, 104 Theatre Technology I, II 4
TheA 201 Scene Design I 3
TheA 202 Costume Design I 3
TheA 305 Intermediate Acting 3
TheA 471 Directing 3

THEATRE ARTS PERFORMANCE MINOR

TheA 305-306 Intermediate Acting 6
Courses chosen from the following 12
- TheA 150 Performance Lab I
- TheA 372 Methods in Characterization
- TheA 373 Advanced Acting
- TheA 371 Play Analysis
- TheA 407 Acting Shakespeare
- TheA 408 Styles of Acting
- TheA 471 Directing

Program in Women's Studies

Joan M. West, Coordinator (308 Admin. Bldg. 83844-3174; phone 208/885-7866). Faculty: Katherine G. Aiken, Janice Capel Anderson, Ginna M. Babcock, Anna Banks, Lois Blackburn, Mary Clearman Blew, Laurel J. Branen, Mary H. DuPree, Martha J. Einerson, Janice W. Fletcher, Stephan P. Flores, Kathryn Paxton George, Nicholas F. Gier, Candida Gillis, H. Lynne Haagensen, Sandra Haarsager, Walter A. Hesford, Bonnie J. Hultstrand, Eric L. Jensen, Georgia Johnson, Virginia W. Junk, Ellen E. Kittell, Suzanne Loker, Cecelia E. Luschnig, Rebecca K. McCoy, Barbara R. Meldrum, Sheila O'Brien, Patricia Riley, Dene K. Thomas, Nancy J. Wanamaker, Joan M. West, Doris K. Williams, J. Gary Williams, Laurie J. Wilson.

Women's Studies connects different kinds of knowledge across many subjects. The minor offers an interdisciplinary program that uses gender to examine such cultural variables as class, ethnicity, nationality, sexual identity, and age. The courses encourage students to develop critical thinking skills that will empower them as active learners and that will lead them to a better understanding of differences in the society that surrounds them. Fields such as gerontology, mass communications, recreation, criminology, economics, health services, social work, law, psychology, and education are increasingly offering special career opportunities to students with a background in Women's Studies.

Courses

See part 6 for courses in Women's Studies (WmSt).

Academic Minor Requirements

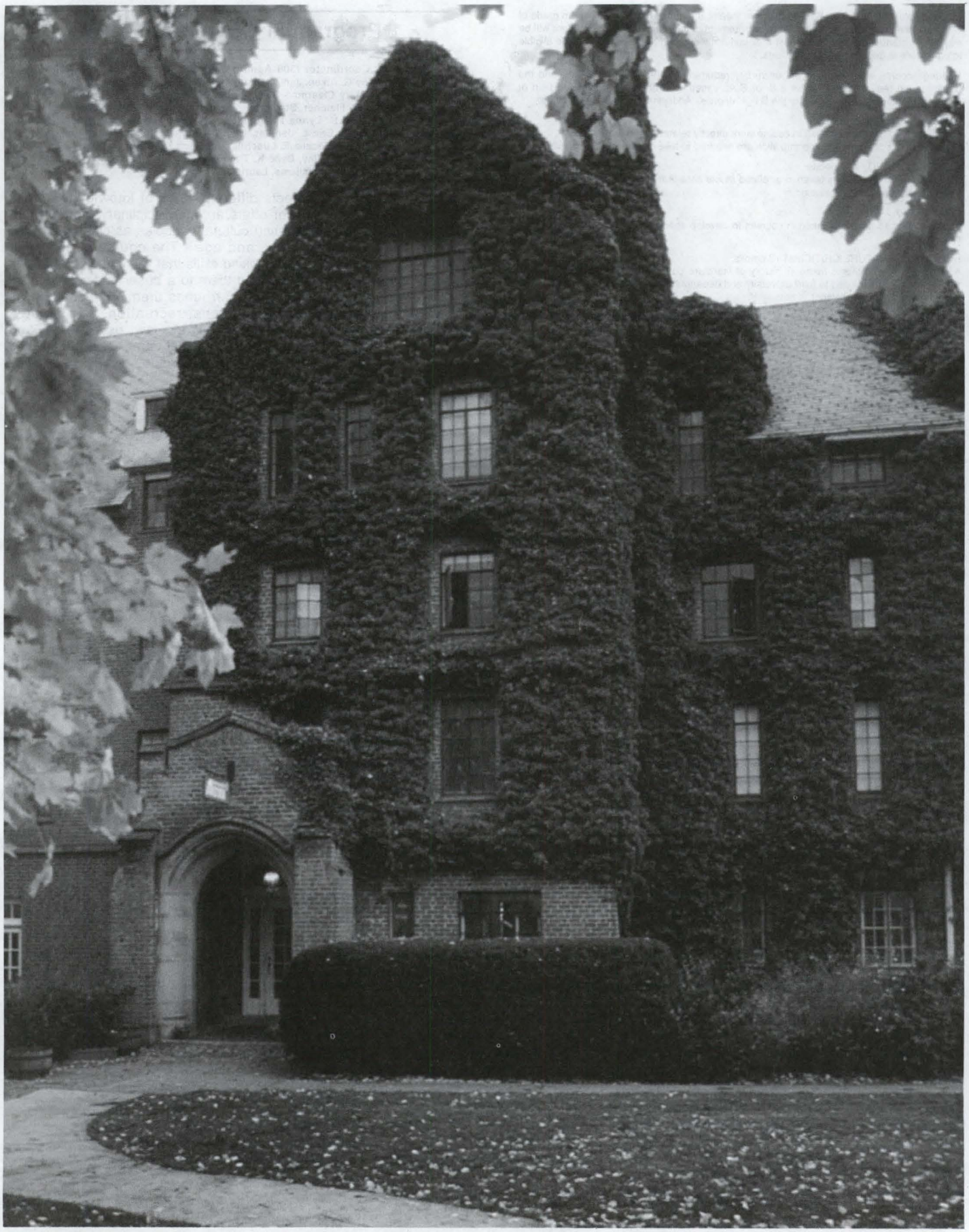
WOMEN'S STUDIES MINOR

WmSt 201 Women, Culture, & Society: Intro to Women's Studies 3
Courses chosen from the following 12
- Engl 481 Women's Literature (3 cr)
- FCS 445 Issues in Work & Family Life (3 cr)
- Hist 449 From Sappho to Margaret Cavendish: Women in Pre-industrial European History or Hist 420 History of Women in American Society (3 cr)
- Phil 405 Feminism & Philosophy (3 cr)
- Psyc 330 Human Sexuality (3 cr)
- Soc/Anth 322 Racial & Ethnic Relations or Soc 423 Soc of Gender (3 cr)

Courses in two different disciplines from the list above or the following 6
- FCS 240 Intimate Relationships (3 cr)
- FCS 346 Personal & Family Finance & Management (4 cr)
- FCS 405 Eating Disorders (2 cr)
- FCS 440 Contemporary Family Relationships (3 cr)
- H&S 311 Acquaintance Rape (3 cr)
- PE 404 Special Topics: Women in Sport (3 cr)
- Phil 207 Biomedical Ethics (3 cr)
- Psyc 320 Introduction to Social Psychology (3 cr)
- Soc 325 Sociology of the Family (3 cr)

WmSt 499 Directed Study (a synthetic paper) 1

With prior approval of the Women's Studies committee, a student may also include credit from survey courses, special topics courses, or seminars meeting the guidelines for inclusion of courses in a Women's Studies minor. No more than 3 credits may count toward both the student's major and minor.



Course Numbering System and Key to Abbreviations and Symbols

Numbering System

Courses numbered 010-099 are remedial-level courses carrying no credit; those numbered 100-299 are lower-division courses primarily for undergraduates; 300-499 are upper-division courses primarily for advanced undergraduates, fifth-year students, and graduates; courses numbered 500-600 are intended for and are restricted to students enrolled in the College of Graduate Studies (see regulation B-8 in part 3 for the exception to this rule); courses numbered 800-999 are intended for and are restricted to students enrolled in the College of Law.

Letter Designations with Numbers

Certain course numbers also include letters preceding the arabic number - R101, C100, etc.:

C; (C) - when included as part of the course number, offered by correspondence study only; when shown in parentheses following the number of credits, also offered by correspondence study.

H - offered only in University Honors Program.

ID - cooperative course with Washington State University offered at the University of Idaho and available to WSU students.

J - courses conducted jointly, e.g., MusA J365/J565 (Chamber Ensemble), in which students' assignments and expected levels of performance reflect the levels for which they are enrolled.

R - offered only at the UI/Idaho Falls Center for Higher Education.

WS - cooperative course with Washington State University offered at WSU and available to University of Idaho students. For complete description, consult the WSU catalog.

Subtitled Courses

An "s" in parentheses between the number and title of a course indicates that the course may be offered under the main title and/or with an appended subtitle, e.g., "Seminar" and/or "Seminar in the History of the Pacific Northwest." The specific area normally will be listed in the Time Schedule as a separate section of the main course.

Credit Designations

Immediately following each course title, the number of credits authorized is shown in parentheses. Typical designations are:

(3 cr) - three semester credits (for courses with more than one number, e.g., 101-102-103, the three credits apply to each number).

(1-3 cr) - one to three semester credits.

(3 cr; 2 cr) - three credits fall semester; two credits spring semester.

(1-3 cr, max 3) - one to three credits during any academic session and the course may be repeated until the maximum of three credits has been earned.

(3 cr, max 12) - three credits during any academic session and the course may be repeated until the maximum of twelve credits has been earned (for a course with more than one number, e.g., 301-302, the maximum is overall and applies to the combined numbers).

(cr arr) - credits to be arranged (may be repeated for credit without restriction as to maximum).

(1-3 cr, max arr) - one to three credits during any academic session, and the course may be repeated.

Parenthetical Course Numbers

Course numbers that appear in parentheses after the course credits are former numbers and appear for one edition only.

Other Abbreviations

alt/yrs - offered in alternate years
coreq - corequisite
cr - credit
dem - demonstration
dept - department
disc - discussion
div - division
exam - examination
GPA - grade-point average
grad - graduate
hr - hour
intro - introduction(-tory)
jr - junior
lab(s) - laboratory(-ies)
lec - lecture(-s)
perm - permission of instructor
perm of dept - permission of department or subject-field chair
P/F - (graded) on the basis of pass or fail
prereq - prerequisite
reqd - required
soph - sophomore
sr - senior
undergrad - undergraduate

Accounting

Marcia S. Niles, Associate Chair, Dept. of Accounting (209-G Admin. Bldg. 83844-3169; phone 208/885-6453).

Enrollment in 300- and 400-level accounting courses is restricted to students who have completed at least 58 credits. In addition, CBE students must have earned at least a 2.4 GPA in the CBE predictor courses.

No course (CBE or outside the college) that is required in a CBE student's curriculum may be taken by CBE undergraduates on a P/F basis, with the exception of courses that are taught only on a P/F basis. Only upper-division CBE courses used as free electives may be taken by CBE undergraduates on a P/F basis.

Students who have not completed the prerequisite to a course for which they are otherwise eligible may register for the course with the instructor's approval.

Acct **200** (s) **Seminar** (cr arr). Prereq: perm.

Acct **201** **Introduction to Financial Accounting** (3 cr) (C). Overview of the nature and purpose of general purpose financial statements provided to external decision makers; emphasis on use of financial statement information. May involve evening exams. May be taken before or after Acct 202.

Acct **202** **Introduction to Managerial Accounting** (3) (C). Intro to cost behavior and managerial use of accounting information for planning, control, and performance evaluation. May involve evening exams. May be taken before or after Acct 201.

Acct **203** (s) **Workshop** (cr arr). Prereq: perm.

Acct **204** (s) **Special Topics** (cr arr). Prereq: perm.

Acct **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Acct **299** (s) **Directed Study** (cr arr). Individual sections may be graded P/F. Prereq: perm.

Acct **300** **Accounting Concepts and Systems** (3 cr). Foundations of accounting concepts and theories with emphasis on the role of information in decision making within and about organizations; conceptual framework of accounting; intro to accounting systems; includes computer applications reinforced by practice cases; wordprocessing and spreadsheet proficiency reqd. May include evening exams. Prereq: Acct 201, 202; prereq or coreq: Bus 332.

Acct **301** **Corporate Accounting and Reporting** (3 cr). Preparation of general purpose financial statements for external users based on U.S. generally accepted accounting principles for assets, liabilities, stockholders' equity; emphasis on concepts behind current standards; discussion of alternate theories including international accounting standards. May include evening exams. Prereq: Acct 300; prereq or coreq: Acct 305.

Acct **305** **Accounting Information Systems** (3 cr). Role of accounting information systems in effective control of organizations; coverage of internal controls, flowcharting, systems analysis and design, implementation and evaluation as they relate to the major transaction cycles; revenue, purchases, production, payroll, cash receipts and disbursements. May include evening exams. Prereq: Acct 300; prereq or coreq: Acct 301.

Acct **381 Accounting for Managers and Investors** (3 cr). Not open for cr to accounting majors. Development of knowledge and skills relating to the use of accounting information to enhance decision making. May involve some evening exams. Prereq: Acct 201, 202.

Acct **385 Cost and Management Accounting** (3 cr). Design and use of cost management systems to support decision making and influence behavior; includes tracing costs to processes, activities, products, and customers; budgeting and responsibility accounting. May include evening exams. Prereq: Acct 300; prereq or coreq: Acct 301 and 305, and Bus 370 or 340-346.

Acct **395 Fundamentals of Accounting** (2-4 cr, max 4). Financial statements, limitation of data, partnership and corporate accounting, financial and cost analysis, and interpretation. May involve some evening exams. Prereq: perm.

Acct **400** (s) **Seminar** (cr arr). Prereq: perm.

Acct **403** (s) **Workshop** (cr arr). Prereq: perm.

Acct **404** (s) **Special Topics** (cr arr). Prereq: perm.

Acct **J405/J505** (s) **Professional Development** (cr arr). Credit earned in these courses will not be accepted toward graduate degree programs. Prereq: perm.

Acct **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Acct **J430/J530 Accounting for Public Sector Entities** (3 cr). Conceptual and procedural issues involving accounting, reporting, and auditing public sector organizations; topics include state and local governmental accounting principles, GASB/FASB jurisdiction over not-for-profit organizations, federal financial and performance auditing standards, and relevant current issues. Additional class meetings, projects, and/or assignments required for graduate credit. May include evening exams. Prereq: Acct 301.

Acct **483 Federal and State Taxes I** (3 cr). Income determination, deductions, accounting methods, sales of property, deferral of tax, taxation of the individual, tax research, with primary emphasis on tax planning; the case method is used. May include evening exams. Prereq: BLaw 265, Acct 301.

Acct **J484/J584 Federal and State Taxes II** (3 cr). Taxation of corporations and partnerships with emphasis on tax planning, tax research; the case method is used. Additional class meetings, projects, and/or assignments required for graduate credit. May include evening exams. Prereq: Acct 483.

Acct **J486/J586 Contemporary Management Accounting Issues** (3 cr). Synthesis of managerial accounting skills through case analysis, written and oral reports; topics include decision making, divisional performance evaluation, transfer pricing, activity based costing, theory of constraints, and total quality management. Additional class meetings, projects, and/or assignments required for graduate credit. May include evening exams. Prereq: Acct 385.

Acct **490 Advanced Corporate Accounting and Reporting** (3 cr). In-depth coverage of selected topics in financial accounting designed to provide students with research skills needed to successfully interpret and apply accounting standards as promulgated by official bodies; topics include complex areas in liability accounting such as leases and pensions, pooling and purchase methods of consolidations, and earnings per share. May include evening exams. Prereq: Acct 301.

Acct **492 Auditing and Controls** (3 cr). Value of the audit, concepts of attestation and relevant reporting, theories of evidence, development of risk analysis approach to auditing, with emphasis on internal and performance auditing; documentation and understanding of internal control structure, environment, system design, procedures and testing. May include evening exams. Prereq: Acct 301, 305, and 385.

Acct **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Acct **498 Accounting Internship Program** (1-3 cr, max 3). Formalized learning experience in an actual work setting. Students work within an accounting related field (accounting, auditing, and taxation) and commit to a minimum of 50 hours of direct supervised work for each semester credit. May include evening exams. This course does not count as an undergraduate accounting elective. Prereq: senior status.

Acct **499** (s) **Directed Study** (cr arr). Individual sections may be graded P/F. Prereq: perm.

Acct **500 Master's Research and Thesis** (1-6 cr, max 6). Prereq: perm.

Acct **501** (s) **Seminar** (cr arr). Prereq: perm.

Acct **502** (s) **Directed Study** (cr arr). Individual sections may be graded P/F. Prereq: perm.

Acct **504** (s) **Special Topics** (cr arr). Prereq: perm.

Acct **505** (s) **Professional Development** (cr arr). See Acct J405/J505.

Acct **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Acct **520 Accounting for Managers and Investors** (3 cr). Development of skills in use of accounting information to enhance management and/or investment decision-making, survey of fundamentals of financial and managerial accounting issues, procedures, and practices. Prereq: Acct 395 or equiv.

Acct **530 Accounting for Public Sector Entities** (3 cr). See Acct J430/J530.

Acct **560 Seminar in Accounting, Reporting, and Control** (3 cr). Accumulation and dissemination of accounting information to meet the needs of internal and external users; the role of accounting information in financial markets and the impact of those markets on accounting disclosures; examination of the interrelationship among management, investors, creditors, and other stakeholders in society. Prereq: Acct 385; prereq or coreq: Acct 490.

Acct **570 Advanced Accounting Systems Analysis and Controls** (3 cr). Emphasis on the role of computer and information technology in the development, analysis, and operation of accounting information systems; includes advanced coverage of accounting transaction cycles, accounting systems planning and analysis, accounting system design, accounting systems implementation and operation, and the accounting system internal control structure. May include evening exams. Prereq: Acct 305.

Acct **582 Cost Management Systems** (3 cr). Not for accounting majors. Carries no credit toward master's degree in accounting. Design and use of cost management systems to support decision making and influence behavior; includes the economics of costs to processes, products, and customers; activity-based cost management; cost estimation; performance measurement; capital budgeting; and project budget statements. May involve evening exams. Prereq: Acct 202 and CE 386 or Bus 301.

Acct **584 Federal and State Taxes II** (3 cr). See Acct J484 J584.

Acct **585 Federal Gift and Estate Taxation** (3 cr). Gift and estate tax consequences on property transfer during life and at death, tax research, and estate planning and personal financial planning. May include evening exams. Prereq: Acct 483 (Acct J484/J584 recommended).

Acct **586 Contemporary Management Accounting Issues** (3 cr). See Acct J486/J586.

Acct **590 Advanced Auditing Seminar** (3 cr). Independent auditor's role, legal responsibilities, and code of conduct; concepts, standards, and methods in audit judgment formulation; includes statistical and other sampling methods and EDP auditing techniques. Prereq: Acct 492, 560, 570.

Acct **591 Global Accounting Perspectives** (3 cr). Seminar on accounting theory, practice and the role of standard setting entities; international harmonization of accounting and auditing standards; impact of globalization of business operations, including effects of variations in tax laws, and fluctuations in currency exchange rates on internal and external users of financial information as well as public accounting firms. Prereq: Acct 560, 570.

Acct **598** (s) **Internship** (1-3 cr, max 3). Career relevant learning experience in actual work setting with professional-level responsibilities. Students work within an accounting related field (accounting, auditing, and taxation) and commit to a minimum of 50 hours of direct supervised work for each semester credit. A paper documenting relevance of work experience and a presentation to undergraduate accounting students may be required.

Acct **599** (s) **Research** (1-6 cr, max 6). May count only 3 cr toward degree. Student works with individual professor to design a research study, collect and analyze data, and prepare written report. Prereq: at least one course in research methodology and perm.

Adult Education

Jerry L. Tuchscherer, Director, Div. of Adult, Counselor, and Technology Education (210 Educ. Bldg. 83844-3083; phone 208/885-6556).

AdEd **J418/J518 Learning Styles** (3 cr). See VoEd J418/J518.

AdEd **J428/J528 Program Development in Adult Education** (3 cr) (AdEd 475). Planning, development, implementation, and evaluation of adult education and training programs in a variety of settings. Additional project reqd for grad cr.

AdEd **J473/J573 Foundations of Adult Education** (3 cr) (C). Philosophical, economic, sociological, and psychological bases of adult education; roles, limitations, and coordination of adult education, domestic and international programs—public and private sector. Additional projects/assignments reqd for grad cr.

AdEd **474 Psychology of Adult Learners** (3 cr) (C). Psychological, social, and physiological characteristics of adult learners; relationships to family, friends, and fellow citizens.

AdEd **J476/J576 Communication Skills for Teachers of Adults** (3 cr). Development of communication skills for use with culturally diverse adults; verbal and nonverbal techniques for improving communication skills. Additional projects/assignments reqd for grad cr.

AdEd **516 Life Span Development** (3 cr). Conceptual overview of stages of development from infancy through the aged and implications to the educational process.

AdEd **518 Learning Styles** (3 cr). See VoEd J418/J518.

AdEd **528 Program Development in Adult Education** (3 cr). See AdEd J428/J528.

AdEd **561 Helping Skills in Adult Education** (3 cr). Instruction in helping skills and problem management approaches for use in current professional and personal situations; skills for effective listening and to provide appropriate problem solving support.

AdEd **562 Conciliation Training** (3 cr). Training in mediation and conciliation skills that help people resolve common disputes, especially neighbor-to-neighbor disputes; based on recognized adult community conciliation training models.

AdEd **563 Mediation and Conflict Management** (3 cr). Designed for application in the classroom, at home, and in the community; skills include mediation strategies, negotiation skills, effective problem solving and conflict management techniques, and special issues such as confidentiality, ethics, handling impasse, power balancing, and handling violence.

AdEd **568 Writing for Publication** (3 cr). Development of knowledge, skills, and potential of researchers and other writers desiring to prepare and publish manuscripts in education or other professional and trade journals; technical and theoretical aspects of writing for publication and the process of manuscript preparation, submission, and editing.

AdEd **570 Principles and Concepts of Research** (3 cr). See VoEd 570.

AdEd **571** **Accessing, Organizing, and Synthesizing Data** (3 cr). See VoEd 571.

AdEd **573** **Foundations of Adult Education** (3 cr). See AdEd J473/J573.

AdEd **574** **Psychology of Adult Learners** (3 cr). Psychological, social, and physiological characteristics of adult learners; relationships to family, friends, and fellow citizens.

AdEd **575** **Strategies for Teaching Adults** (3 cr). Design and application of teaching strategies for learning domains and learning styles appropriate for adult learners.

AdEd **576** **Communication Skills for Teachers of Adults** (3 cr). See AdEd J476/J576.

AdEd **581** **Theory, Practices, and Challenges of Leadership** (3 cr). See VoEd 581.

AdEd **583** **Problems and Techniques of Group Leadership** (3 cr). Development of an understanding of groups, group behavior, development and socialization of groups, and nature of power, conflict, and leadership in groups; intended for adults who spend time with other adults in groups, committees, teams, or other relationship configurations; emphasis on leadership aspects of group behavior and participation.

AdEd **589** **Critical Thinking** (2 cr). See EdAd 589.

AdEd **597** (s) **Practicum** (cr arr). Application of theories and techniques; supervised field experiences in selected settings. Graded P/F. Prereq: perm.

AdEd **598** (s) **Internship** (cr arr). Supervised experience in teacher education, administration, supervision, or ancillary services in adult education. Graded P/F. Prereq: perm.

Aerospace Studies

Jack E. McPhie, Head (Student Union Annex 83844-4230; phone 208/885-6129).

Aero **101-102** **The Air Force Today** (2 cr). Survey course that focuses on organizational structure and missions of Air Force organizations; officership and professionalism; introduction to communicative skills; weekly lab consisting of Air Force customs and courtesies, health and physical fitness, and drill ceremonies is mandatory for cadets. One lec and 2 hrs of lab a wk.

Aero **201-202** **The Development of Air Power** (2 cr). Factors contributing to development of air power from its earliest beginnings through two world wars; evolution of air power concepts and doctrine; an assessment of communicative skills; weekly lab consisting of Air Force customs and courtesies, Air Force environment, and drill and ceremonies. One lec and 2 hrs of lab a wk.

Aero **291** **Four-Week Field Training Course** (2 cr). Intensive study of military education, experience in leadership, and management at an active Air Force installation. Prereq: Aero 101-102, 201-202, and perm of dept (by interview).

Aero **292** **Six-Week Field Training Course** (6 cr). Applicants must apply at least six months in advance. Intensive study of academic core course work and military education at an active Air Force installation. Prereq: junior standing and perm of dept (by interview).

Aero **299** (s) **Directed Study** (cr arr). Prereq: perm of dept.

Aero **311-312** **Air Force Leadership and Management** (4 cr). Leadership and quality management fundamentals, professional knowledge, leadership ethics, and communicative skills required of an Air Force officer; case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied; a weekly lab provides advanced leadership experience in officer-type activities, giving students the opportunity to apply leadership and management principles of this course (the lab is mandatory for cadets). Three lec and 2 hrs of lab a wk.

Aero **411-412** **National Security Forces in Contemporary American Society** (4 cr). Examination of the need for national security, analysis of evolution and formulation of American defense policy, strategy, and joint doctrine; investigation of methods for managing conflict; terrorism; special topics of interest to the military profession; emphasis on refinement of communicative skills; weekly lab consists primarily of advanced leadership experiences in officer-type activities (mandatory for cadets). Three lec and 2 hrs of lab a wk.

Aero **499** (s) **Directed Study** (cr arr). Prereq: perm of dept.

Agricultural Economics

James R. Nelson, Head, Dept. of Agricultural Economics and Rural Sociology (39A Iddings Wing, Ag. Sc. Bldg. 83844-2334; phone 208/885-6264; e-mail jnelson@uidaho.edu).

AgEc **101** **Agricultural Economics and Agribusiness** (3 cr) (C). Applications of economic and business principles to agriculture industry; factors affecting production and marketing of agricultural products.

AgEc **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgEc **278** **Principles of Farm and Ranch Management** (4 cr) (C). Decision making and profit maximization using economic principles, records, enterprise analysis, and comparison of alternative farming practices. Three lec and one 2-hr lab a wk. Prereq: Econ 202 or perm.

AgEc **289** **Agricultural Markets and Prices** (3 cr). Economics of agricultural markets and pricing institutions; analysis of supply, demand, elasticity, futures markets; institutional arrangements in food marketing. Prereq or coreq: Econ 202.

AgEc **332** **Economics of Agricultural Development** (3 cr). Problems associated with the economics of development of major agricultural areas of the world. Prereq: principles of economics or perm.

AgEc **356** **Agricultural Programs and Policies** (3 cr). Goals, methods, results of economic programs and policies in agriculture, including role of governmental and farm organizations. Prereq: Econ 201, 202.

AgEc **ID361** **Farm and Natural Resource Appraisal** (3 cr). Same as For 361. WSU Ag Ec 361. Methods; factors affecting the value of land and related resources; valuations for loans, sale, assessment, condemnation, and other purposes; procedures used by governmental and commercial agencies. One 1-day field trip. Prereq: AgEc 278 or Econ 202 or perm.

AgEc **383** **Economics for Natural Resource Managers** (3 cr). See For 383.

AgEc **391** **Agribusiness Management** (3 cr). Economic theory of business; applications of management to agricultural processing and service firms; accounting, statistics, and efficiency studies for problem-solving. Prereq: Econ 202 and 3 cr in accounting.

AgEc **394** **Analytical Techniques in Agribusiness and Economics** (3 cr). Linear equations, linear programming, marginal analysis, and statistical methods applied to problem solving in agribusiness and economics. Prereq: Econ 352 and Math 160 or equiv.

AgEc **398** (s) **Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

AgEc **404** (s) **Special Topics** (cr arr). Prereq: perm.

AgEc **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgEc **J409/J509** **Mathematical Economics** (3 cr). See Econ J409/J509.

AgEc **WS430** **Financing Agribusiness Firms** (3 cr). WSU Ag Ec 430.

AgEc **447** **Economics of Developing Countries** (3 cr). See Econ 447.

AgEc **451** **Land and Natural Resource Economics** (3 cr). Agricultural, forest, and mineral land use and classification; factors affecting land use; ownership, tenure, taxation, values, credit, and governmental policies. Prereq: Econ 352.

AgEc **453** **Agricultural Price Analysis** (3 cr). Analytical tools for explaining and predicting price behavior of agricultural products; application of economics and statistics to price analysis. Prereq: Econ 352 and Stat 251, or perm.

AgEc **467** **Economics of Rural Community Development** (3 cr). Economic theory, analytical methods, and literature relevant to study of development of rural areas. Prereq: Econ 201, 202.

AgEc **481** **Agricultural Market Analysis** (3 cr). Structure, competition, and economic performance of agricultural product and input markets. Prereq: Econ 352 or perm.

AgEc **493** **Agricultural Production Economics** (3 cr). Economic theory related to agricultural production at the enterprise, firm, and industry levels. Prereq: AgEc 278 and Econ 352.

AgEc **499** (s) **Directed Study** (cr arr). Prereq: perm.

AgEc **500** **Master's Research and Thesis** (cr arr).

AgEc **501** (s) **Seminar** (cr arr). Prereq: perm.

AgEc **502** (s) **Directed Study** (cr arr). Prereq: perm.

AgEc **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgEc **507** **Research Methodology** (3 cr). Same as Econ, FCS, and Soc 507. Theoretical background of the scientific method applied to social science research; organization, procedures, reporting, and evaluation of research. Prereq: grad standing and perm.

AgEc **509** **Mathematical Economics** (3 cr). See Econ J409/J509.

AgEc **510** **Advanced Microeconomics** (3 cr). See Econ 510.

AgEc **WS520** **Regional Economics** (3 cr). WSU Ag Ec 520. Construction of multisector economic models and their use in regional policy analysis.

AgEc **522** **Advanced Aggregate Economics** (3 cr). See Econ 522.

AgEc **524** **Agricultural Trade and Development** (3 cr). Economics of international trade and development, with emphasis on policy and research issues that arise from interaction of economic events in the world food economy. Prereq: Econ 446 or perm.

AgEc **525** **Econometrics** (3 cr). Same as Econ and Stat 525. Theory and practice of multiple regression methods; applications to the study of economic and other phenomena; use of computer regression programs. Prereq: 3 cr in statistics.

AgEc **528** **Advanced Production Economics** (3 cr). Theory and application of production economics; production functions, technological change, operations research, linear programming. Prereq: AgEc 493 or equivalent and Stat 401 or AgEc 525.

AgEc **551** **Natural Resource and Environmental Economics** (3 cr). Allocation of natural resources over time and among uses; environmental policy; welfare economics; project evaluation and benefit cost analysis; valuation of extramarket goods. Prereq: Econ 352 or perm.

AgEc **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Agricultural Education

Lou E. Riesenberg, Head, Dept. of Agricultural and Extension Education (Agricultural and Extension Education Bldg. 83844-2040; phone 208/885-6358; e-mail lriesenb@uidaho.edu).

AgEd **180 Introduction to Agricultural Education** (1 cr). Overview of purposes and career opportunities in agricultural education; role of secondary agriculture instructor in secondary school systems. Accelerated; first half of fall semester.

AgEd **181 Introduction to Extension Education** (1 cr). Overview of purpose and career opportunities available in extension education profession; role of cooperative extension faculty; basic principles and practices of Cooperative Extension System including related legislation. Accelerated; second half of fall semester.

AgEd **200** (s) **Seminar** (cr arr). Prereq: perm.

AgEd **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgEd **211 Agricultural Education Skills** (1 cr). Alt/yrs. Technical agriculture skills applicable to teaching agriculture.

AgEd **299** (s) **Directed Study** (cr arr). Prereq: perm.

AgEd **351 Principles and Philosophy of Vocational Education** (3 cr). Same as VoEd 351. Overview and interpretation of history, aims, and purposes of public education and vocational education; issues and programs comprising vocational education in Idaho and the U.S.

AgEd **358 Supervising FFA and SAE Programs** (2 cr). Role of secondary agriculture instructors in supervising FFA and Supervised Agricultural Experience programs.

AgEd **359 Developing 4-H Youth Programs** (1 cr). Planning, development, and leadership principles of 4-H/youth program; role of 4-H/youth agent and volunteer leader.

AgEd **400** (s) **Seminar** (cr arr). Prereq: perm.

AgEd **404** (s) **Special Topics** (cr arr). Prereq: perm.

AgEd **406** (s) **Study Abroad** (cr arr). Prereq: perm.

AgEd **J448/J548 Principles and Practices of Extension Education** (3 cr). Alt/yrs. Philosophy and principles, social and economic significance of extension education in agriculture, home economics, and 4-H youth development; examination of behavioral science concepts in organization, development, and management of extension programs. Cr earned in AgEd 548 by completion of in-depth paper on some aspect of extension education. Prereq for AgEd 548: perm.

AgEd **J450/J550 Developing Leaders** (2 cr). An action-oriented, participatory examination of aspects of "leadership." Accelerated 7-week session open only to seniors and graduate students. Students registered for AgEd 550 present one lecture and lead a small group section.

AgEd **452 Methods of Teaching Agriculture** (3 cr). Procedures of identifying and selecting instructional methods and materials, planning, and student evaluation criteria to effectively teach agriculture. Five lec and one 3-hr lab a wk for 8 wks.

AgEd **453 Program Planning in Secondary and Adult Agricultural Education** (1 or 3 cr). Planning, organizing, and implementing secondary and adult programs in agriculture. Includes only the adult section of the course when taken for 1 cr. Five lec a wk for 8 wks.

AgEd **454 Facilities Organization and Management** (2 cr). Applications of efficient planning, organizing, and teaching skills reqd in management of lab and shop facilities. Four lec and one 3-hr lab a wk for 8 wks.

AgEd **459 Cooperative Extension Practicum** (1-9 cr, max 9). Observation, participation, and supervised experiences in a selected extension office. Prereq: jr standing and perm.

AgEd **460 Practicum: Secondary School Teaching in Agriculture** (10 cr). Ten wks of practical experience student teaching in secondary agriculture program; in addition each student will be expected to complete one wk of early field-based experience at his or her student teaching center, to be completed the first wk of school after Jan. 1. Prereq: GPA of 2.50, admission to the Teacher Education Program, and perm of dept.

AgEd **461 Student Teaching Portfolio** (2 cr). Summary of the 10-week practicum experience; a notebook portfolio to include unit lesson plans, daily teaching plans, videotape example of teaching, report of early field experience, daily journal, summary of 10 positive and 10 challenging teaching experiences, supervisory assessments of teaching by cooperating instructor and university supervisor, and cooperating teacher's final evaluation.

AgEd **470 Proseminar in Agricultural Education** (1 cr, max 2). Professional issues in agricultural education. Fall semester includes additional 8-hour Saturday session for CPR and first aid training.

AgEd **499** (s) **Directed Study** (cr arr). Prereq: perm.

AgEd **500 Master's Research and Thesis** (cr arr).

AgEd **501** (s) **Seminar** (cr arr). Prereq: perm.

AgEd **502** (s) **Directed Study** (cr arr). Prereq: perm.

AgEd **503** (s) **Workshop** (cr arr). Prereq: perm.

AgEd **504** (s) **Special Topics** (cr arr). Prereq: perm.

AgEd **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgEd **509 Adult Education in Agriculture and Home Economics** (3 cr). Social and psychological factors affecting adult motivation and learning, development of leadership and group dynamics; nature, philosophy, and concepts of adult life-long learning related to agricultural, home economics, and extension education. Prereq: perm.

AgEd **548 Principles and Practices of Extension Education** (3 cr). See AgEd J448/J548.

AgEd **550 Developing Leaders** (2 cr). See AgEd J450/J550.

AgEd **557 Problems in Teaching Agriculture** (1-3 cr, max 9). Methods and new developments. Prereq: perm.

AgEd **560 Beginning Teacher Induction in Agricultural Education** (1 cr, max 2). On-site clinical supervision, technical assistance, and leadership to beginning teachers of secondary agricultural education programs.

AgEd **562 Instructional Methods in Agricultural Education** (3 cr). Innovations and advanced principles in teaching methods and materials.

AgEd **583 Program Evaluation and Planning in Agricultural and Extension Education** (3 cr). Criteria and procedures for evaluation of programs in agricultural and extension education; selection and construction of evaluation devices; use of results in program planning and implementation.

AgEd **598** (s) **Internship** (cr arr). Prereq: perm.

AgEd **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Agricultural Engineering

James A. DeShazer, Head, Dept. of Biological and Agricultural Engineering (421 Engineering/Physics Bldg. 83844-0904; phone 208/885-6182; fax 208/885-7908; e-mail bagengr@uidaho.edu).

NOTE: All 300-, 400-, and 500-level agricultural engineering courses require a working knowledge of computers including the use of mainframe and microcomputers, structured programming, electronic spreadsheets, and word processing.

AgE **142 Engineering for Living Systems** (2 cr). Same as BSyE 142. Introduction to engineering principles used to solve agricultural and biological systems problems, including use of computers. One lec and one 3-hr lab a wk; two half-day field trips.

AgE **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgE **242 Agricultural Engineering Analysis and Design** (2 cr). Methods of analyzing and solving engineering problems and intro to elements of design; use of computers in engineering problem solving. Prereq: CS 105 or 112; Math 175.

AgE **299** (s) **Directed Study** (cr arr). Prereq: perm.

AgE **ID351 Hydrology** (3 cr). Same as CE 321. WSU BSysE 351. Analysis of precipitation and runoff events; principles of climatology, evaporation, infiltration, and snowmelt. Prereq: one semester of calculus.

AgE **ID&WS352 Soil and Water Engineering** (3 cr). WSU BSysE 352. Plant-soil-water relationships, applied hydraulics, soil erosion principles and control, drainage, and legal aspects of water resources. Two lec and one 3-hr lab a wk. Prereq: CE 320 and AgE 351.

AgE **ID&WS372 Agricultural Power and Machines** (3 cr). WSU BSysE 362. Performance, operation, and testing of agricultural power units and machinery; functional requirements, force analysis, power transmission, safety, and economics. Two lec and three hrs of lab a wk; one 1-day field trip.

AgE **398** (s) **Engineering Cooperative Internship** (cr arr). Supervised internship in professional engineering settings, integrating academic study with work experience; details of the co-op to be arranged with supervising professor before the start of the co-op; requires written report. Graded P/F. Cannot be used for technical elective. Prereq: perm.

AgE **404** (s) **Special Topics** (cr arr). Prereq: perm.

AgE **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgE **ID&WS-J441/ID&WS-J541 Instrumentation and Measurements for Biological Systems** (3 cr). AgE 441 same as BSyE 441. WSU BSysE 541. Sensing elements, signal conditioning, data output and control. Additional projects/assignments reqd for grad cr. Two lec and one 3-hr lab a wk. Prereq: AgE 462 or BSyE 462, or perm.

AgE **449 Design of Agricultural Structures** (3 cr). Design of timber, steel, and reinforced concrete members and connections for agricultural structures. Two lec and one 3-hr lab a wk. Prereq: ME 340.

AgE **ID451 Engineering Hydrology** (3 cr). Same as CE 421. WSU BSysE 451. Hydrologic cycle as applied to engineering projects; hydrograph routing; design hydrographs; intro to hydrologic simulation. Prereq: AgE 351 and CE 320.

AgE **ID&WS-J456/ID&WS-J556 Irrigation System Design** (3 cr). WSU BSysE 453. Crop water requirements, irrigation scheduling and water management, selection and design of irrigation systems, pump selection. Additional projects/assignments reqd for grad cr. Two lec and one 3-hr lab a wk; one 1-day field trip. Prereq: AgE 352.

AgE **458 Open Channel Hydraulics** (3 cr). Same as CE 428. Hydraulics of uniform and varied flow in open channels with fixed and movable beds. Prereq: AgE 352 or CE 322.

AgE **ID&WS461 Agricultural Processing and Environment** (3 cr). WSU BSysE 385. Carries 2 credits after BSyE 361 or ME 345. Analysis and design of processing and environmental systems for the handling, processing, and storage of agricultural and biological materials. Two lec and one 3-hr lab a wk. Prereq: ChE 321 and CE 320.

AgE **ID&WS462 Electric Power and Controls for Biological Systems** (3 cr). WSU BSysE 380. Same as BSyE 462. Design, selection, and use of electrical equipment and electric power systems for application to biological systems; design and use of electrical, electronic, and other feedback control systems for use with biological systems. Two lec and one 3-hr lab a wk. Prereq: EE 207; coreq: Math 310.

AgE **ID-J474/ID-J574 Fluid Power and Control Systems** (3 cr). WSU BSysE 474/574. Circuit components; circuit design and testing; sequential and feedback control applications. Additional projects/assignments reqd for grad cr. Two lec and one 3-hr lab a wk. Prereq for AgE 574: perm.

AgE **478 Agricultural Engineering Design I** (1 cr). Intro to design process, CAD/CAM facility, product liability, and project scheduling; formulation of a design problem. Prereq: senior standing in AgE, or perm.

AgE **479 Agricultural Engineering Design II** (2 cr). Individual or team design of an agricultural related problem; incl synthesis, analysis, construction, and testing; final report reqd. Two 3-hr labs a wk. Prereq: AgE 478.

AgE **WS-J487/WS-J587 Food Process Engineering** (3 cr). WSU BSysE 482/582.

AgE **491 Seminar** (1 cr). Same as BSyE 491. Professional aspects of the field, employment opportunities and preparation of occupational inventories. Graded P/F. Prereq: sr standing.

AgE **WS-J496/WS-J596 Conservation Engineering** (3 cr). WSU BSysE 496/596.

AgE **499** (s) **Directed Study** (cr arr). Prereq: perm.

AgE **500 Master's Research and Thesis** (cr arr).

AgE **501** (s) **Seminar** (cr arr). Graded P/F. Prereq: perm.

AgE **502** (s) **Directed Study** (cr arr). Prereq: perm.

AgE **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AgE **ID&WS541 Instrumentation and Measurements for Biological Systems** (3 cr). See AgE J441/J541.

AgE **551 Advanced Hydrology** (3 cr). Principles of the hydrologic cycle in mountainous areas, including precipitation, snowmelt, and systems simulation.

AgE **WS552 Advanced Theory of Irrigation Water Requirements** (3 cr). WSU BSysE 590. Alt/yrs.

AgE **ID555 Natural Channel Flow** (3 cr). WSU C E 555. Same as CE 529. Hydraulics of nonuniform flow in irregular channels, unsteady flow, and flow routing.

AgE **556 Irrigation System Design** (3 cr). See AgE J456/J556.

AgE **ID558 Fluid Mechanics of Porous Materials** (3 cr). WSU BSysE 558. Statics and dynamics of multiflow systems in porous materials; properties of porous materials; steady and unsteady flow.

AgE **WS561 Advanced Agricultural Engineering Topics** (1-4 cr, max 6). WSU BSysE 551-552.

AgE **ID574 Fluid Power and Control Systems** (3 cr). See AgE J474/J574.

AgE **WS587 Food Process Engineering** (3 cr). See AgE J487/J587.

AgE **589 Water Resources Seminar** (1 cr). See Intr 589.

AgE **WS593 Drainage Engineering** (3 cr). WSU BSysE 593.

AgE **WS596 Conservation Engineering** (3 cr). See AgE J496/J596.

AgE **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

AgE **600 Doctoral Research and Dissertation** (cr arr).

Agricultural Systems Management

James A. DeShazer, Head, Dept. of Biological and Agricultural Engineering (421 Engineering/Physics Bldg. 83844-0904; phone 208/885-6182; fax 208/885-7908; e-mail bagengr@uidaho.edu).

ASM **ID107 Beginning Welding** (2 cr). WSU AgTM 107. Principles of operation, use, and care of arc and acetylene welding equipment. One lec, one 2-hr lab, and two hrs of individual practice a wk. Enrollment limited to 12 per section.

ASM **112 Introduction to Agricultural Systems Management** (3 cr). Application of basic engineering principles to solving problems dealing with farm machinery, buildings, processing, irrigation, and energy use. Prereq: high school algebra.

ASM **115 Graphical Representation** (2 cr). Drafting procedures, lettering, orthographic projection, pictorial drawings, etching, graphs, and computer drafting. One lec and one 2-hr lab a wk.

ASM **200** (s) **Seminar** (cr arr). Prereq: perm.

ASM **ID202 Agricultural Shop Practices** (2 cr). WSU AgTM 202. Primarily for agricultural mechanization and agricultural education students. Operation, use, and care of shop tools and equipment. One lec and one 3-hr lab a wk.

ASM **WS203 Agricultural Structures** (3 cr). WSU AgTM 203.

ASM **204** (s) **Special Topics** (cr arr). Prereq: perm.

ASM **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

ASM **ID210 Small Engines** (2 cr). WSU AgTM 210. Principles of engine operation, tune-up, and maintenance; repair and overhaul of small engines. One lec, one 2-hr lab, and two hrs of individual practice a wk. Enrollment limited to 12 per section.

ASM **240 Computer Applications in Biological Systems** (3 cr). Application of computers in production agriculture; microcomputer principles and operation, disk operating systems; word processing; spreadsheets, database management and other application programs; introduction to one program language. Two lec and one 2-hr lab a wk. Prereq: three credits of college math or perm.

ASM **299** (s) **Directed Study** (cr arr). Prereq: perm.

ASM **304 Agricultural Fluid Power Systems** (1 cr). Fundamentals of hydraulic power and control as applied to agricultural machines and processing equipment; component function and sizing; schematic diagrams. One 3-hr lab a wk. Prereq: Math 160, Phys 100 or perm.

ASM **ID&WS305 Agricultural Machinery Systems** (3 cr). WSU AgTM 305. Application, management, adjustment, and care of farm equipment; machinery fabrication, and power transmission. Two lec and one 3-hr lab a wk.

ASM **ID306 Agricultural Structures and Environmental Systems** (3 cr). WSU AgTM 306. Planning farm buildings, construction materials, beam and column design, insulation and ventilation for environmental control. Two lec and one 3-hr lab a wk.

ASM **WS312 Engines and Tractors** (3 cr). WSU AgTM 312.

ASM **ID&WS315 Irrigation Systems and Water Management** (3 cr). WSU AgTM 315. Irrigation methods, irrigation management, water rights, conveyance and measurement, pumps, soil-water-plant relationships, and drainage. Two lec and one 3-hr lab a wk. Prereq: Math 143, Soil 205.

ASM **ID&WS331 Electric Power Systems for Agriculture** (3 cr). WSU AgTM 331. Basic circuits; wiring and the code; motors and controls; heating, lighting, and power. Two lec and one 3-hr lab a wk.

ASM **398 Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

ASM **400** (s) **Seminar** (cr arr). Prereq: perm.

ASM **404** (s) **Special Topics** (cr arr). Prereq: perm.

ASM **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

ASM **ID409 Agricultural Tractors and Power Units** (4 cr). WSU AgTM 312. Selection, operation, adjustment, service, and testing; fuels and combustion; fuel, lubrication, cooling, and electrical systems; tractor power trains, hitching, traction, and safety. Three 1-hr lec and one 3-hr lab a wk.

ASM **WS413 Human and Machinery Risk Management** (3 cr). WSU AgTM 413.

ASM **414 Analysis of Agricultural Systems I** (2 cr). Analysis of agricultural systems and equipment associated problems in food and agricultural industries; linear programming, simulation, critical path methods, and other system analysis techniques considering physical, social, and economic constraints; provides students with the knowledge and computer skills to better manage resources for the evolving agricultural industries. One 1-day field trip. Prereq: ASM 240 or equiv, Math 160, and sr standing.

ASM **424 Analysis of Agricultural Systems II** (2 cr). Management of agricultural systems through team solution of management problems posed by agribusiness managers, farmers, extension specialists, and other industry consultants; application of management principles to give students experience in solving realistic problems faced by agribusiness managers; critical evaluation of results by students, staff, and consultants. One 1-day field trip. Prereq: ASM 414.

ASM **ID&WS433 Agricultural Processing Systems** (3 cr). WSU AgTM and FSHN 433. Same as FST 433. Grain cleaning, mixing, and drying; materials handling, heat transfer, pumps, fans, refrigeration, and instrumentation. Two lec and one 3-hr lab a wk; one 1-day field trip.

ASM **WS435 Instrumentation for Data Acquisition in Agriculture** (3 cr). WSU AgTM 435/535.

ASM **498** (s) **Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm.

ASM **499** (s) **Directed Study** (cr arr). Prereq: perm.

Agriculture (General)

Lou E. Riesenberg, Head, Dept. of Agricultural and Extension Education (Agricultural and Extension Education Bldg. 83844-2040; phone 208/885-6358; e-mail lriesenb@uidaho.edu).

PREREQUISITE: Enrollment in courses in this subject field requires permission of the department.

Ag **200** (s) **Seminar** (cr arr). Prereq: perm.

Ag **206** (s) **Study Abroad** (cr arr). Prereq: perm.

Ag **299** (s) **Directed Study** (cr arr). Prereq: perm.

Ag **398** (s) **Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm.

Ag **400** (s) **Seminar** (cr arr). Prereq: perm.

Ag **404** (s) **Special Topics** (cr arr). Prereq: perm.

Ag **406** (s) **Study Abroad** (cr arr). Prereq: perm.

Ag **499** (s) **Directed Study** (cr arr). Prereq: perm.

American Studies

Walter A. Hesford, Coordinator, American Studies Program (121 Carol Ryrie Brink Hall 83844-1102; phone 208/885-6941); Sheila O'Brien and Mary H. DuPree, Co-coordinators.

AmSt **301 Interpreting America** (3 cr). Satisfies core requirement J-3-d. Interdisciplinary approach to study of major aspects of American culture from its beginning to the present. Prereq: Engl 102; junior standing or perm.

AmSt **404** (s) **Special Topics** (cr arr). Prereq: perm.

AmSt **499** (s) **Directed Study** (cr arr). Prereq: perm.

Animal and Veterinary Science

Richard A. Battaglia, Head, Dept. of Animal and Veterinary Science (213 Ag. Sc. Bldg. 83844-2330; phone 208/885-6345; e-mail bhawk@uidaho.edu).

AVS **101 Animal and Veterinary Orientation** (2 cr). Career opportunities discussed to help students develop a strong sense of future direction.

AVS **ID&WS109 The Science of Animals that Serve Humanity** (3 cr). WSU A S 101. Role of animal agriculture in providing food, work, and pleasure for mankind; intro to animal genetics, physiology, endocrinology, nutrition, and other disciplines essential for an understanding of the contributions of animals in the expanding human population. Coreq for majors in the Animal/Vet Sc Dept: AVS 110.

AVS **110 Animal Science Laboratory** (1 cr). Lab exercises demonstrating the importance of domestic animals to human welfare. One 2-hr lab a wk. Coreq: AVS 109.

AVS **WS166 Horse Management Laboratory** (1 cr). WSU A S 166. Introductory laboratory designed to familiarize students with approved management practices for horse enterprises. Graded P/F.

AVS **ID172 Dairy Cattle Management Laboratory** (1 cr). WSU A S 172. Management practices associated with a dairy enterprise. Graded P/F.

AVS **ID&WS174 Beef Cow Calf Management Laboratory** (1 cr). WSU A S 174. Management practices associated with a beef cow calf enterprise for students without experience. Graded P/F.

AVS **ID176 Sheep Management Laboratory** (1 cr). WSU A S 176. Management practices associated with a farm flock sheep enterprise. Graded P/F.

AVS **WS178 Swine Management Laboratory** (1 cr). WSU A S 178. Management practices associated with a swine enterprise. Field trip and special clothing required. Graded P/F.

AVS **ID&WS203 Live Animal and Carcass Evaluation** (3 cr). WSU A S 260. Evaluation and selection of cattle, sheep, and swine for herd replacements; evaluation of market animals; carcass evaluation and grading, and factors that affect quality and quantity of meat; visual and objective appraisals. One lec and two 3-hr labs a wk; four 1-day and four 1/2-day field trips or equiv time.

AVS **ID&WS205 Introduction to Animal Nutrition** (3 cr). WSU A S 213. May not be used for major cr by majors in animal science or range-livestock management. Functions, metabolism, and requirements of nutrients with applications to the diets of animals and birds.

AVS **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AVS **ID&WS218 Artificial Insemination and Pregnancy Detection** (2 cr). WSU A S 454. Anatomy and physiology of pregnant and nonpregnant reproductive systems; artificial insemination; male reproduction; pregnancy detection in domestic livestock. Two 2-hr lec-labs a wk. Enrollment limited to 20 students. Preregistration required; consult dept administrator. Prereq: AVS 222 (may be concurrent) and perm.

AVS **222 Animal Reproduction and Breeding** (4 cr). May not be used for major cr by majors in animal science or range-livestock management. Application of principles of genetics and reproductive physiology in domestic animal improvement, fertility, systems of mating, and selection of techniques.

AVS **263 Introduction to Meat Science** (3 cr). Same as FST 263. Duplicate cr not allowed in AVS/FST 263 and 264. The meat industry, sanitation, slaughtering, processing, and factors that affect the quality and palatability of meat. Special clothing and equipment reqd. Two lec and one 3-hr lab a wk.

AVS **264 Consumer Meats** (3 cr). Same as FST 264. Duplicate cr not allowed in AVS/FST 263 and 264. Meat as a food; meat inspection, pricing, selection, processing, storage, and cookery. Special clothing and equipment reqd. Two lec and one 3-hr lab a wk.

AVS **265 Abattoir Skills** (1 cr). Practical experience in meat animal slaughter. Special clothing and equipment reqd. Prereq: AVS 263 or 264.

AVS **299** (s) **Directed Study** (1-6 cr). Graded P/F. Prereq: perm of dept.

AVS **304 Advanced Animal Evaluation** (3 cr). Emphasis on use of records in selection and use of carcass value in pricing live market animals; factors that affect the economic value of meat animals. Students participate in live animal-carcass evaluation contests. One lec and two 3-hr labs a wk; four 1-day and four 1/2-day field trips in addition to contests or equiv time. Prereq: AVS 203.

AVS **ID&WS305 Animal Nutrition** (3 cr). WSU A S 314. Proteins, carbohydrates, fats, minerals, and vitamins; physiology of digestion, absorption and metabolism of nutrients, and the relationship of enzymes and hormones in these phenomena. Prereq: MMBB 380.

AVS **ID&WS306 Feeds and Ration Formulation** (4 cr). WSU A S 313. Application of principles of nutrition to ration formulation for poultry and livestock; evaluating feedstuffs for use in ration formulation. Three lec and one 2-hr lab a wk. Prereq: AVS 205 or 305.

AVS **WS330 Genetics of Farm Animals** (3 cr). Same as Gene 320. WSU A S 330. Genetic principles applied to breeding of farm animals. Prereq: Gene 314, Stat 251, and AVS 222.

AVS **WS366 Horses and Horsemanship** (3 cr). WSU A S 366. Development, functional use, behavior, and management of the horse. Field trip reqd. Prereq: AVS 166 or perm.

AVS **371 Anatomy and Physiology** (4 cr). Structure and function of tissues and organ systems of domestic and wild animals. Three lec and one 2-hr lab a wk.

AVS **398** (s) **Internship** (cr arr). Cooperative programs with producers, allied industry and food processing industries within the state. Graded P/F. Prereq: perm.

AVS **403** (s) **Workshop** (cr arr). Normally offered in nutrition, breeding, products, and management. Graded P/F. Prereq: perm.

AVS **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AVS **J407/J507 Selected Topics in Dairy Cattle Nutrition** (3 cr). Current literature topics in dairy cattle nutrition. Prereq: AVS 306.

AVS **J411/J511 Microbiology and Physiology of Ruminant Nutrition** (3 cr). Alt/yrs. Physiology and microbiology aspects of ruminant digestion and their influence on the metabolism of extraruminal tissues; interpretation of nutritive requirements in terms of rumen microbiology activities; evaluation of research techniques. Additional projects/assignments reqd for grad cr. Prereq: perm.

AVS **ID&WS413 Physiology of Lactation** (3 cr). WSU A S 452. Alt/yrs. Anatomy, physiology, and endocrine control of mammary development and milk secretory process. Prereq: Biol 202 (AVS 371 recommended) or perm.

AVS **ID&WS-J415/ID&WS-J515 Lab Methodology** (2 cr). WSU A S 415. Research methodology used in experimental nutrition and physiology. Additional projects/assignments reqd for grad cr. One lec and two 2-hr labs a wk. Prereq for AVS 515: grad status and perm.

AVS **J430/J530 Advanced Topics in Embryo Physiology** (3 cr). Alt/yrs. Analysis of biochemical, endocrine, and anatomical events of embryonic development with emphasis on lab and domestic animals; critical analysis of current scientific literature; lab techniques in developmental biology. Outside reading, class presentation, and term paper reqd; additional projects/assignments reqd for grad cr. Two lec and one lab a wk.

AVS **450 Senior Seminar** (1 cr). Special topics in animal and veterinary science. Prereq: senior standing.

AVS **ID&WS-J451/ID&WS-J551 Endocrine Physiology** (3 cr). WSU A S 451/551. Same as Zool J417/J517. Structure and physiology of glands of internal secretion and their hormonal effects on processes of growth, development, metabolism, and production of vertebrates; minor emphasis on invertebrates. Cr earned in AVS 551 by completion of term paper. Prereq: Biol 202 and MMBB 380.

AVS **ID&WS452 Physiology of Reproduction** (4 cr). Physiology of reproduction; growth, structure, development, endocrinology, and control of reproductive function with emphasis on farm animals. Three lec and one 2-hr lab a wk. Prereq: Biol 202.

AVS **WS466 Horse Production** (3 cr). WSU A S 466. Principles of breeding, feeding, and management of horses. Field trip required. Enrollment limited to 10. Prereq: AVS 205, 222, and perm.

AVS **471 Animal Disease** (3 cr). Causes, transmission, susceptibility, symptoms, diagnosis, prevention, and control of major infectious diseases and parasites of domestic animals. Prereq: AVS 371, MMBB 250.

AVS **ID&WS472 Dairy Cattle Management** (3 cr). WSU A S 472. Establishing a dairy farm, housing and managing large dairy herds, selection of breeding cattle, and marketing quality milk. One 4-day field trip. Prereq: AVS 205 and 222 or equiv.

AVS **473 Herd Health Management** (3 cr). Impact of immunity, sanitation, housing, chemotherapy, quarantine, and stress on livestock disease prevention. Prereq: AVS 205 and/or 305 and jr standing.

AVS **ID&WS474 Beef Cattle Science** (3 cr). WSU A S 474. Breeding, feeding, and management; commercial and purebred enterprises; management of beef cattle on ranges, pasture, and in the feedlot. One 1-day field trip. Prereq: AVS 205 and 222 or equiv.

AVS **WS475 Advanced Dairy Cattle Management** (2 cr). WSU A S 473. Application of concepts of dairy cattle management to practical situations. One lec and 1-2 hrs of lab a wk. Prereq: AVS 472.

AVS **ID476 Sheep Science** (3 cr). WSU A S 476. Application of principles of genetics, reproduction, nutrition, health, and marketing to the management of commercial and purebred sheep; new developments related to sheep industry; production, evaluation, and use of wool. Two lec and one 2-hr lab a wk; one 1-day field trip or equiv time. Prereq: AVS 205 and 222 or equiv.

AVS **WS478 Swine Science** (3 cr). Principles of breeding, feeding, management, and marketing of swine. Two 2-hr lec-labs a wk; two 1-day field trips or equivalent time. Prereq: AVS 205 and 222 or equiv.

AVS **WS482 Principles of Animal Care** (2 cr). WSU A S 482. Use and care of animals in laboratory and production situations.

AVS **WS485 Animal Welfare** (3 cr). WSU A S 485. Ethical considerations and welfare of animals used as companions, for food, and in scientific research. Prereq: Biol 201.

AVS **WS488 Biotechnology** (3 cr). WSU A S 488. Theory and application of biotechnology in agriculture, industry, and medicine; methodological, environmental, social, and economic concerns.

AVS **499** (s) **Directed Study** (1-6 cr, max arr). Prereq: perm of dept.

AVS **500 Master's Research and Thesis** (cr arr). Graded P/F.

AVS **501** (s) **Seminar** (cr arr). Prereq: perm.

AVS **502** (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

AVS **503** (s) **Workshop** (cr arr). Prereq: perm.

AVS **504** (s) **Special Topics** (cr arr). Prereq: perm.

AVS **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

AVS **507 Selected Topics in Dairy Cattle Nutrition** (3 cr). See AVS J407/J507.

AVS **511 Microbiology and Physiology of Ruminant Nutrition** (3 cr). See AVS J411/J511.

AVS **WS512 Advanced Nutrient Metabolism** (5 cr). WSU A S 507. Alt/yrs.

AVS **513 Protein and Energy Nutrition** (3 cr). Current concepts in protein and energy metabolism and function relating to nutrients reqd for maintenance, growth, and development of animals. Prereq: AVS 305, MMBB 380 or equiv.

AVS **514 Physiology of Nonruminant Nutrition** (3 cr). Alt/yrs. Physiology of digestion, absorption, and metabolism of nutrients in monogastric animals and birds; biological evaluation of nutrients and nutritional interrelationships. Prereq: perm.

AVS **ID&WS515 Lab Methodology** (2 cr). See AVS J415/J515.

AVS **ID&WS520 Seminar in Animal Physiology** (1 cr, max arr). WSU A S 540. Current topics in animal physiology.

AVS **ID&WS526 Advanced Reproduction** (4 cr). WSU A S 550. Alt/yrs.

AVS **530 Advanced Topics in Embryo Physiology** (3 cr). See AVS J430/J530.

AVS **WS538 Neuroendocrinology** (3 cr). WSU V Ph 538.

AVS **ID&WS551 Endocrine Physiology** (3 cr). See AVS J451/J551.

AVS **552 Advanced Endocrine Physiology** (3 cr). Biochemical and physiological properties of hormones; lab techniques in experimental endocrinology. Two lec and one 2-hr lab a wk. Prereq: AVS J451/J551, Chem 542.

AVS **ID&WS560 Domestic Animal Growth and Development** (3 cr). WSU A S 560. Development, differentiation, growth, and endocrine regulation of major organ systems in domestic animals. Prereq: AVS 513, MMBB 380, and perm.

AVS **WS595 Cytokines and Their Role in Reproduction** (2 cr). WSU A S 598.

AVS **WS596 Advanced Topics in Animal Science** (1-2 cr, max arr). WSU A S 598.

AVS **597** (s) **Practicum** (cr arr). Prereq: perm.

AVS **598** (s) **Internship** (cr arr). Prereq: perm.

AVS **600 Doctoral Research and Dissertation** (cr arr). Graded P/F.

Anthropology

Donald E. Tyler, Chair, Dept. of Sociology and Anthropology (101 Phinney Hall 83844-1110; phone 208/885-6751).

PREREQUISITE: Ordinarily three credits in lower-division courses in anthropology are required for registration in upper-division courses in this field; other exceptions by permission.

Anth **100 Introduction to Anthropology** (3 cr). Satisfies core requirement J-3-d. Basic theories, methods, and findings of human paleontology, prehistory, and culture.

Anth **200** (s) **Seminar** (cr arr). Prereq: perm.

Anth **203** (s) **Workshop** (cr arr). Prereq: perm.

Anth **204** (s) **Special Topics** (cr arr). Prereq: perm.

Anth **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Anth **220 Peoples of the World** (3 cr) (C). Societies of Eurasia, Africa, Americas, Australia, and islands of the Pacific.

Anth **230 World Prehistory** (3 cr). Prehistoric cultures of Old and New Worlds; techniques of excavation; methods of archaeological analysis.

Anth **231 Introduction to Archaeology** (3 cr) (C). Archaeological techniques for interpreting past lifeways from material remains; includes both prehistoric and historical archaeology.

Anth **251 Introduction to Physical Anthropology** (3 cr). Evidence for primate and human evolution; processes of racial diversification; techniques of physical anthropology; human population biology.

Anth **261 Language and Culture** (3 cr). Language as an aspect of culture; the relation of habitual thought and behavior to language.

Anth **299** (s) **Directed Study** (cr arr). Prereq: perm.

Anth **322 Racial and Ethnic Relations** (3 cr). See Soc 322.

Anth **C323 Introduction to Museology** (3 cr). Theory and practice of science, history, and art museums. One 1-day and two 1/2-day field trips.

Anth **327 Belief Systems** (3 cr) (C). Same as RelS 327. Method and theory of comparative anthropological study of religion.

Anth **329 North American Indians** (3 cr) (C). Origins, physical types, languages, and cultures of North American Indians.

Anth **400** (s) **Seminar** (cr arr). Prereq: perm.

Anth **403** (s) **Workshop** (cr arr). Prereq: perm.

Anth **404** (s) **Special Topics** (cr arr). Prereq: perm.

Anth **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Anth **409 Anthropological Field Methods** (1-8 cr, max 8). Field training in archaeology and/or social anthropology.

Anth **J411/J511 Human Evolution** (3 cr). Human origins in light of the fossil record and evolutionary theory. Additional projects/assignments reqd for grad cr. Prereq: Anth 100 or perm.

Anth **J412/J512 Human Races** (3 cr). Human population biology, dynamics of evolution, human ecology, and their relationship to problem of human racial variation. Additional projects/assignments reqd for grad cr. Prereq: Anth 100 or perm.

Anth **J414/J514 Development of Social Theory** (3 cr). See Soc J414/J514.

Anth **C419 Museum Administration** (3 cr). Administration of the total museum program. Prereq: Anth C323.

Anth **J420/J520 Anthropological History and Theory** (3 cr, max 9). Historical development of anthropology along with theoretical debates as presented in the anthropological literature. Additional projects/assignments reqd for grad cr. Prereq: upper-division standing.

Anth **ID-J422/ID-J522 Northwest Ethnography** (3 cr). WSU Anth 428/528. Readings in standard ethnographic literature of native peoples of Pacific Northwest. Additional projects/assignments reqd for grad cr.

Anth **426 Anthropology of China** (3 cr). Overview of physical anthropology, archaeology, and linguistics of China with special emphasis on social anthropology of both pre- and post-liberation China.

Anth **J428/J528 Social and Political Organization** (3 cr). Bases of social and political organization; kin based units; non-kin units; political units through primitive states. Additional projects/assignments reqd for grad cr. Prereq: upper-div standing.

Anth **J430/J530 Introduction to Archaeological Method and Theory** (3 cr). Archaeological theory in anthropological perspective; current trends in method and theory of American archaeology. Additional projects/assignments reqd for grad cr. Prereq: Anth 231 or perm.

Anth **J431/ID-J531 Historical Archaeology** (3 cr). WSU Anth and Hist 545. Excavation and analysis of historic archaeological sites. Additional projects/assignments reqd for grad cr. Three 1-day field trips. Prereq: Anth 100.

Anth **WS435 Cultural Resource Management** (3 cr). WSU Anth 435.

Anth **J436/J536 North American Prehistory** (3 cr). Theories, methods, and findings of prehistoric North American archaeology. Additional projects/assignments reqd for grad cr. Prereq: Anth 231.

Anth **J437/J537 Archaeological Project Management** (3 cr). Principles and methods of research management, including surveys, excavation, and lab analysis; considerations in personnel, logistics, and fiscal management, coordination of project phases and multidisciplinary studies; professional ethics in grant and contract supported research. Additional projects/assignments reqd for grad cr. Prereq: Anth 231 and Stat 251.

Anth **J438/J538 Archaeological Conservation** (3 cr). Methods of material and data recovery from archaeological contexts; review of chemical and physical characteristics of archaeological materials; techniques appropriate for preservation of materials and information during field work and laboratory analysis. Additional projects/assignments reqd for grad cr. Prereq: Anth 231.

Anth **J439/J539 Spatial Analysis in Archaeology** (3 cr). Principles and technologies for intra and inter site analyses; use of cumulative regional databases; spatial autocorrellation; introduction to the use of remote sensing; geophysical sampling; geographical information systems, and photogrammetry in archaeology. Additional projects/assignments reqd for grad cr. Prereq: Anth 231 and Stat 251.

Anth **441 Introduction to the Study of Language** (3 cr). See Engl 441.

Anth **J443/J543 Plateau Prehistory** (3 cr). Prehistoric cultures, chronologies, and interrelationships within the interior Northwest. Additional projects/assignments reqd for grad cr. Prereq: Anth 231 or perm.

Anth **J449/J549 Lithic Technology** (3 cr). Manufacture and analysis of stone implements, theory of rock fracture, nonhuman productions of pseudo-artifacts. Additional projects/assignments reqd for grad cr. Prereq: Anth 231 or perm.

Anth **WS-J450/WS-J550 Descriptive Linguistics** (3 cr). WSU Anth 450/550.

Anth **J451/J551 Forensic Anthropology** (3 cr). Observations and measurements of the human skeleton; variations based on age, sex, and race, and pathologies; identification of human skeletal material and other mammals. Additional projects/assignments reqd for grad cr. Three lec/lab sessions a wk. Prereq: Anth 251.

Anth **J462/J562 Human Issues in International Development** (3 cr). Interdisciplinary analysis of complex interaction between tradition and modernity in Third World society, and its attendant human predicament. Additional projects/assignments reqd for grad cr.

Anth **496** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Anth **497** (s) **Practicum** (cr arr).

Anth **498** (s) **Internship** (cr arr). Prereq: perm.

Anth **499** (s) **Directed Study** (cr arr). Prereq: perm.

Anth **500 Master's Research and Thesis** (cr arr).

Anth **501** (s) **Seminar** (cr arr). Prereq: perm.

Anth **502** (s) **Directed Study** (cr arr). Prereq: perm.

Anth **503** (s) **Workshop** (cr arr). Prereq: perm.

Anth **504** (s) **Special Topics** (cr arr). Prereq: perm.

Anth **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Anth **509 Anthropological Field Methods** (1-8 cr, max 8). Individual field work in approved areas. Prereq: perm.

Anth **511 Human Evolution** (3 cr). See Anth J411/J511.

Anth **512 Human Races** (3 cr). See Anth J412/J512.

Anth **514 Development of Social Theory** (3 cr). See Soc J414/J514.

Anth **520 Anthropological History and Theory** (3 cr, max 9). See Anth J420/J520.

Anth **ID522 Northwest Ethnography** (3 cr). See Anth J422/J522.

Anth **528 Social and Political Organization** (3 cr). See Anth J428/J528.

Anth **WS529 Seminar in Public History** (3 cr). WSU Hist 528.

Anth **530 Introduction to Archaeological Method and Theory** (3 cr). See Anth J430/J530.

Anth **ID531 Historical Archaeology** (3 cr). See Anth J431/ID-J531.

Anth **536 North American Prehistory** (3 cr). See Anth J436/J536.

Anth **537 Archaeological Project Management** (3 cr). See Anth J437/J537.

Anth **538 Archaeological Conservation** (3 cr). See Anth J438/J538.

Anth **539 Spatial Analysis in Archaeology** (3 cr). See Anth J439/J539.

Anth **543 Plateau Prehistory** (3 cr). See Anth J443/J543.

Anth **549 Lithic Technology** (3 cr). See Anth J449/J549.

Anth **WS550 Descriptive Linguistics** (3 cr). See Anth WS-J450/WS-J550.

Anth **551 Forensic Anthropology** (3 cr). See Anth J451/J551.

Anth **562 Human Issues in International Development** (3 cr). See Anth J462/J562.

Anth **WS573 Identification of Faunal Remains** (4 cr). WSU Anth 573.

Anth **597** (s) **Practicum** (cr arr). Prereq: perm.

Anth **598** (s) **Internship** (cr arr). Prereq: perm.

Anth **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Architecture

Bruce T. Haglund, Chair, Dept. of Architecture (207 Art and Arch. South 83844-2451; phone 208/885-6781; e-mail arch@uidaho.edu).

Note: On registering for a studio course offered in this department, the student agrees that the department may retain work completed by the student. The department will make retained work available to the student for photographing.

Arch **155 Introduction to Architecture** (2 cr). Slide lec course introducing architecture and interior architecture; methods of critical analysis; history of modern movement to contemporary design.

Arch **156 Graphic Communication** (2 cr). Intro to the process of graphic communication; studio projects to explore graphics through projects, lec, and readings. Two 2-hr studios a wk and assigned work.

Arch **200** (s) **Seminar** (cr arr). Prereq: perm.

Arch **203** (s) **Workshop** (cr arr). Prereq: perm.

Arch **204** (s) **Special Topics** (cr arr). Prereq: perm.

Arch **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Arch **255 Advanced Architectural Graphics** (2 cr). Two- and three-dimensional drawing applying various delineation techniques; preliminary presentation techniques and use of color in graphics. Two 2-hr studios a wk and assigned work. Prereq: Arch 156 or perm.

Arch **256 Basic Architectural Design** (3 cr). Same as IA 256. Intro to design process, space and space relationships, character of design, and form; development of sketch presentation techniques. Two 3-hr studios a wk and assigned work.

Arch **266 Materials and Methods** (3 cr). Materials characteristics from manufacture to construction; production information and resource literature investigation.

Arch **299** (s) **Directed Study** (cr arr). Prereq: perm.

Arch **353-354 Architectural Design I** (5 cr). Expansion of student vocabulary of architectural forms and their means of generation; a broad scope and nonrestrictive (though directed) class covering aspects of form generation from human to climatic conservations, influences of history, research, and materials of construction related to architectural design; encouragement of student experimentation and creativity. Three 3-hr studios a wk and assigned work; field trips will be reqd at student expense; some class jury sessions will meet outside of scheduled hours. Prereq: Arch 256, 266.

Arch **365-366 Building Technology I** (3 cr). Arch 365: basic structural design including elementary statics and principles and technology of wood structural design. Arch 366: principles and technology of structural reinforced concrete building design problems by integrating solutions with Architectural Design studio. Prereq: Phys 111, Math 143, Arch 365 for 366, or perm.

Arch **374 Computer Applications in Architecture** (3 cr). Principles of current computer technologies in architecture and interior design; emphasis on development of tool using skills applied in preliminary design, design development, and presentation phases of design process.

Arch **383 Architectural Site Design** (3 cr). Fundamentals of site analysis, site design, and site planning for architects; principles and theories in technical, functional, social, legal, and perceptual issues related to the building site. Non-credit lab section for discussion and presentation of additional technical issues and site-related design projects; field trips and special sessions may be reqd.

Arch **384 Computer-Aided Design** (2 cr). Applications of computer-aided design concepts and methods in architecture and interior design; emphasis on development of tool using skills applied in design development and production phases of the design process. Prereq: Arch 374 or perm.

Arch **385 History of Architecture I: Pre-Modern** (3 cr). Development of western tradition in architecture and urbanism, beginning with first traces of prehistoric building and settlements in northern Europe and Near East and ending with culmination of Baroque development in late 17th century.

Arch **386 History of Architecture II: Modern** (3 cr). Modern movement in architecture and urbanism from late 18th century in France and Britain; cultural, technological, and territorial issues and conditions that led to development of modern architecture in the 20th century.

Arch **400** (s) **Seminar** (cr arr). Prereq: perm.

Arch **401 Senior Design Seminar** (2 cr). Specialized research and program writing in preparation for Arch 456.

Arch **403** (s) **Workshop** (cr arr). Prereq: perm.

Arch **404** (s) **Special Topics** (cr arr). Prereq: perm.

Arch **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Arch **412 Environment and Aging** (3 cr). Exploration of the relationship between the processes of aging and the physical environment within an environment and behavior perspective.

Arch **453-454 Architectural Design II** (5 cr). Study directed at specifics of building design synthesizing related course work into a comprehensive problem solution from multiple-building planning to working drawings on a single building. Three 3-hr studios a wk and assigned work; field trips will be reqd at student expense; some class jury sessions will meet outside of scheduled hours. Prereq: Arch 353-354.

Arch **455-456 Architectural Design III** (5 cr). Expansion to the urban scale of the student's design awareness and ability; to acquaint the student with the multiplicity of considerations involved as project scope increases beyond a single site; to encourage creative and broad-scope thought and action on the future configuration of our cities. In Arch 456, the student undertakes a self-directed arch design study with faculty consultation. Three 3-hr studios a wk and assigned work; field trips will be reqd at student expense; some class jury sessions will meet outside of scheduled hours. Prereq: Arch 453-454; prereq for Arch 456: Arch 401.

Arch **463-464 Environmental Control Systems** (4 cr). Principles and design of solar and mechanical heating and cooling systems, natural and artificial lighting, water and waste systems, and acoustics. Three 1-hr lec and one 2-hr lab a wk.

Arch **465-466 Building Technology II** (3 cr). Arch 465: structural design with steel in buildings; principles and technology of steel design applied to practical building problems by integrating solutions with Architectural Design studio. Arch 466: structural design of buildings with seismic analysis; principles and technology of masonry design. Prereq: ForP 365, Arch 366, or perm.

Arch **468 Technical Integration of Buildings** (2 cr). Integration of structural, environmental, and spatial systems in buildings through case study methodology. Prereq: Arch 463, 464, 465, and 466, or perm.

Arch **475-476 Professional Practice I-II** (3 cr). The architect's duties and responsibilities in practice (construction documents and contracts), project supervision, office administration, and comprehensive services; specification writing, unit costs, and building estimation.

Arch **482 Introduction to Historic Preservation: Theories and Issues** (2 cr). Same as IA 482. Cross-disciplinary examination of historic preservation issues, both past and present; case study exploration of design and planning strategies for preservation and adaptive use of historic buildings and community context. Field trips required.

Arch **483 Urban Theory and Issues** (3 cr). History and theory of city planning and problems associated with urban growth.

Arch **484 Architectural Theory** (2 cr). Seminar considering architectural theory and critical thought through history with emphasis on modern era; examines relation between architectural theory and architectural works. Prereq: Arch 385, 386, fourth year standing.

Arch **486 American Architecture** (2 cr). Selected areas of critical interest in development of American architecture; may include historical styles, key American architects, urban and public issues, and particular building types.

Arch **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Arch **499** (s) **Directed Study** (cr arr). Prereq: perm.

Arch **500 Master's Research and Thesis** (cr arr).

Arch **501** (s) **Seminar** (cr arr). Prereq: perm.

Arch **502** (s) **Directed Study** (cr arr). Prereq: perm.

Arch **503** (s) **Workshop** (cr arr). Prereq: perm.

Arch **504** (s) **Special Topics** (cr arr). Prereq: perm.

Arch **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Arch **597** (s) **Practicum** (cr arr). Prereq: perm.

Arch **598** (s) **Internship** (cr arr). Prereq: perm.

Arch **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Art

Jill Dacey, Chair, Dept. of Art (203 Art and Arch. South 83844-2471; phone 208/885-6851).

Note: On registering for a studio course offered in this department, the student agrees that the department may retain work completed by the student.

Art **100 Visual Art** (3 cr) (Art 101). Satisfies core requirement J-3-d. Introductory historical overview of important visual arts to promote an understanding and appreciation of artistic output with primary emphasis on painting, sculpture, and architecture. Two lec and one 1-1/2-hr quiz/recitation a wk.

Art **111-112 Drawing I-II** (3 cr). Freehand drawing; emphasis on expressive use of materials. One lec and 4 hrs of studio a wk. Prereq for Art 112: Art 111.

Art **121-122 Visual Communication and the Design Process** (3 cr). Intro to visual communication and design process; studio problems to familiarize students with basic design process, elements of design and individual design criteria as related to traditional and experimental concepts of visual communication; studio problems explore basic design through the two- and three-dimensional production, experiences, readings, and written analysis. One lec and two 2-hr studios a wk and assigned work; attendance at outside events (lecs, symposiums, Prichard and Univ Gallery openings).

Art **200** (s) **Seminar** (cr arr). Prereq: perm.

Art **H201 Art Studio** (3 cr). Emphasis on free hand drawing using a wide range of drawing and rendering tech; intro to artistic media and concepts; guest lec and slide presentations by members of art faculty and art grad program; in-class discussion of area gallery shows and college guest lec series. Two 2-hr studios a wk and assigned work. Prereq: perm of director of University Honors Program.

Art **203** (s) **Workshop** (cr arr). Prereq: perm.

Art **204** (s) **Special Topics** (cr arr). Prereq: perm.

Art **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Art **211-212 Drawing III-IV** (3 cr). Art 211: life drawing, work with various media to develop an understanding of the human figure. Art 212: figure drawing from the model, nature, and abstract form; emphasis on individual development. Two 2-hr studios a wk and assigned work. Prereq for Art 211: Art 111-112 or perm. Prereq for Art 212: Art 211 or perm.

Art **214-215 Textile Design I-II** (3 cr). Art 214: Intro to basic technical and aesthetic concepts in textile design, including dye and color theory, resist and direct application techniques; intro to design industry. Art 215: intro to basic technical and aesthetic concepts in woven design, including woven structures, color theory, and drafting.

Art **221-222 Graphic Design I-II** (3 cr). Art 221: Creative problem solving with emphasis on 2-D solutions to conceptual problems; translation of concept into form using word, image, and layout; intro to history of graphic design and typography. Art 222: Continuation of translation of concept into form with emphasis on typography, letterforms, and typographic syntax, type specification, and preparation of art for print media. Prereq for Art 221: Art 111-112, 121-122 or perm. Prereq for Art 222: Art 221 or perm.

Art **225 Communication Graphics** (2 cr). Intro to graphic communication using elementary techniques emphasizing typography and advertising layout. Two 2-hr studios a wk and assignments. Not for graphics majors. Class limited to 35.

Art **231 Painting I** (3 cr). Intro to basic fundamentals of painting; investigating color and techniques. Two 2-hr studios a wk and assigned work. Prereq: Art 111.

Art **241 Sculpture I** (3 cr). Introductory studio environment with emphasis on basic design principles and techniques, tool safety, material exploration, and the development of unique personal expressions in three dimensions. Two 2-hr studios a wk and assigned work. Prereq: Art 100, 111, 112, 121, 122 or perm.

Art **251 Printmaking I** (3 cr). Intro to basic printmaking techniques, relief, intaglio, and serigraphy; emphasis on sensitivity to materials and individual development.

Art **261 Ceramics I** (3 cr). Intro to clay-forming techniques, wheel-thrown and hand-built forming methods, ceramic design concepts, development and articulation of individual design criteria, glaze experimentation; fundamental types of ceramic ware; kiln and studio procedures. Two 2-hr studios a wk and assigned work.

Art **271-272 Interface Design I-II** (3 cr). Art 271: Intro to technical and aesthetic concepts of interface design, including interface design for the Web, preparation of basic assets (graphics, video, and sound) for Internet delivery. Art 272: Intro to basic interactive multi-media programs, intermediate asset preparation, and delivery systems (Internet, CD, kiosk, etc.). Four hrs of lab a wk. Prereq for Art 271: Art 121, 122, or perm. Prereq for Art 272: Art 271.

Art **281 Watercolor I** (3 cr). Intro to techniques of watercolor painting by individual instruction and group criticism. Two 2-hr studios a wk and assigned work. Prereq: Art 111.

Art **299** (s) **Directed Study** (cr arr). Prereq: perm.

Art **301 History of Art: 19th Century** (3 cr).

Art **302 History of Art: 20th Century** (3 cr).

Art **311-312 Drawing V-VI** (3 cr, max 12). Advanced drawing with emphasis placed on individual development and exploration of conceptual approaches to drawing. Two 2-hr studios a wk and assigned work. Prereq: art core or perm.

Art **314-315 Textile Design III-IV** (3 cr, max 12). Development of conceptual and technical abilities in the textile arts with emphasis on individual expression and designing for industry. Prereq: art core and Art 214 and 215 or perm.

Art **321-322 Graphic Design III-IV** (3 cr, max 12). Art 321: Advanced design problems with emphasis on individual development and exploration of contemporary design issues. Art 322: Graphic problem solving in the community environment; advanced production techniques for the graphic designer. Prereq for Art 321: art core, Art 221 and 251, or perm. Prereq for Art 322: Art 222 and 321, or perm.

Art **331-332 Painting II-III** (3 cr, max 12). Art 331: Intermediate painting in oil or acrylic; emphasis on color assignments and aesthetic problems. Art 332: Advanced painting emphasizing individual conceptual approaches. Two 2-hr studios a wk and assigned work. Prereq for 331: art core and Art 231 or perm. Prereq for Art 332: Art 331 or perm.

Art **341-342 Sculpture II-III** (3 cr, max 12). Art 341: Intermediate level studio environment with emphasis on promoting tool safety, material exploration, creative autonomy, portfolio development, and comprehension of historical and contemporary issues relevant to studio projects and sculpture discourse. Art 342: Self directed studio environment with emphasis on refining individual direction, advanced application of materials and techniques, portfolio presentation, and comprehension of practical and theoretical concerns for the professional sculptor. Two 2-hr studios a wk and assigned work. Prereq for 341: 100-level art core, Art 241 or perm. Prereq for 342: Art 341 or perm.

Art **351-352 Printmaking II-III** (3 cr, max 12). Advanced printmaking; further exploration of printmaking methods and materials; emphasis on individual development in conceptual and technical abilities. Prereq: art core and Art 251 or perm.

Art **361-362 Ceramics II-III** (3 cr, max 12). Development and articulation of individual design criteria in ceramics; development of personal conceptual and technical skills in ceramics. Two 2-hr studios a wk and assigned work. Prereq: art core, Art 261 or perm.

Art **371-372 Interface Design III-IV** (3 cr, max 12). Art 371: Intermediate multi-media and interface design for computer applications with emphasis on individual development and exploration of contemporary technical and aesthetic design issues. Art 372: Advanced multi-media and interface design for computer applications with emphasis on team design projects, Web site development and management, and development for stand alone delivery (i.e., CDs, kiosks, etc.). Four hrs of lab a wk. Prereq for Art 371: art core and Art 271-272 or perm. Prereq for Art 372: art core, Art 271-272, and 371 or perm.

Art **391 Collage** (3 cr, max 6). Understanding form in its context by assembling unrelated found objects; emphasis on pictorial integration strategies; tutorial-based studio, production outside of class. Outside lec and special events may be assigned. Prereq: art core and 9 cr of 200-level art studios or perm.

Art **392 Mixed Media** (3 cr, max 6). Understanding synthesis of different media in context to a work of art by using two or more techniques; tutorial-based studio, production to occur outside of class. Outside lec and special events may be assigned. Prereq: art core, 9 cr of 200-level art studios, and 6 cr of 300-level art studios or perm.

Art **400** (s) **Art Seminar** (1-3 cr, max 6). Prereq: perm.

Art **403** (s) **Workshop** (cr arr). Prereq: perm.

Art **404** (s) **Special Topics** (cr arr). Prereq: perm.

Art **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Art **408 Readings in Art** (1-3 cr, max 6). Directed readings in various areas of art including, but not limited to, art history, art theory, and art criticism. Prereq: Art 100, 301-302 or equiv, and perm of instructor before registration.

Art **410 Gallery** (2 cr, max 4). Descriptive analysis of gallery functions; hands-on student participation installing, packaging art works for shipping, lighting, promotions, advertising, and marketing; speakers series of professionals in the field and in allied areas, e.g., gallery directors, artists as presenters/installers, professional art movers. Prereq: adv standing or perm.

Art **488 Faculty Directed Internship** (1-3 cr, max 6). Open only to art majors. Art faculty directed work on a professional project. Prereq: successful completion of one 300-level studio sequence (6 cr), and adviser and directing faculty approval.

Art **490 Art Studio** (8 cr, max 16). Open only to BFA studio art majors. Intensive tutorial studio closely monitored by all the faculty, culminating in development of a portfolio and a professional exhibition. Outside lec and special events may be assigned. Two 2-hr studio critiques a wk. Prereq: senior standing and completion of 21 cr in 300-level art courses with a minimum grade of C and a minimum GPA of 2.5 in departmental courses.

Art **495 BFA Senior Thesis** (2 cr, max 4). Open only to art majors. BFA majors take 2 semesters; first semester is graded IP. Preparation of thesis, portfolio, and senior exhibition. Prereq: senior standing and completion of 21 cr in 300-level art courses with a minimum grade of C and a minimum GPA of 2.5 in departmental courses.

Art **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Art **498** (s) **Internship** (1-12 cr, max 12). Graded P/F. Open to art majors only; no more than 6 cr may be counted toward art degree requirements. Work with professional artists. Prereq: One 300-level studio sequence (6 cr) and perm of dept chair.

Art **499** (s) **Directed Study** (1-3 cr, max 9). Individual study areas selected by the student and approved by the faculty; it is the student's responsibility to select a study area and prepare a semester study program; the student contacts one of the art faculty who agrees to direct the study; it is the student's responsibility to initiate the study program and to maintain regular contact with the faculty member who has agreed to direct the study. Prereq: completion of one 300-level studio sequence (6 cr) and perm.

Art **500 Master's Research and Thesis** (cr arr).

Art **505** (s) **Special Topics** (cr arr). Prereq: perm.

Art **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Art **507** (s) **Art Seminar** (3 cr, max 6). Open only to art majors. Seminar in professional art concerns: guest artist programs, University Gallery activities, including field trips. One 2-hr seminar a wk and assigned work.

Art **508** (s) **Readings in Art** (3 cr, max 6). Open only to art majors. Readings in specific subject or topic areas: art theory, art history; art criticism, and other art subject areas. One hr a wk conference/discussion/seminar and assigned work.

Art **510 Gallery** (1-3 cr, max 6). Descriptive analysis of gallery functions; hands-on student participation installing, packaging art works for shipping, lighting, promotions, advertising and marketing; speakers series of professionals in the field or allied areas; e.g., gallery directors, artists as presenters/installers, professional art movers. Prereq: perm of UI Gallery director.

Art **520** (s) **Studio Workshops** (1-3 cr, max 6). Open only to art majors. Specialized studio experience; offered by art faculty members, faculty groups, and/or guest artists.

Art **521** (s) **MFA Individual Critique** (3 cr, max 6). Open only to MFA majors. Studio research taken from individual art faculty members; individual instruction and critiques. One hr a wk critique session and 8 hrs a wk of individual studio research.

Art **525** (s) **Art Faculty Studio** (3 cr, max 6). Open only to art majors. Studio research taken from the entire art faculty; students are required to arrange at least two studio critiques/faculty each semester.

Art **526** (s) **MFA Art Studio** (3 cr, max 6). Open only to MFA majors. Studio research taken from two or more art faculty members. Prereq: Art 525 (6 cr) and perm.

Art **590** (s) **MFA Thesis Exhibition** (3-6 cr, max 18). Open only to MFA majors. Studio research directly related to preparation of MFA "Exhibition and Statement." Prereq: Art 525 (6 cr).

Art **597** (s) **Practicum** (3 cr, max 6). Open only to art majors. Classroom assistance in teaching and preparation of course materials; conducted under faculty supervision. Normally requires 4-6 hrs a wk in class and assigned work. Prereq: perm of individual faculty and art grad coordinator.

Art **598** (s) **Internship** (1-6 cr, max 6). Open only to art majors. Work with professional artists. Prereq: perm of major professor and dept chair.

Biological Systems Engineering

James A. DeShazer, Head, Department of Biological and Agricultural Engineering (421 Engineering/Physics Bldg. 83844-0904; phone 208/885-6182; fax 208/885-7908; e-mail bagengr@uidaho.edu).

BSyE **142 Engineering for Living Systems** (2 cr). See AgE 142.

BSyE **242 Biological Systems Engineering Analysis and Design** (2 cr). Methods of analyzing and solving engineering problems and introduction to elements of design; use of computers in engineering problem solving. Prereq: CS 105 or 112; Math 175.

BSyE **ID&WS310 Biological Dynamics for System Design** (3 cr). WSU BSysE 310. Modeling and analysis of biological systems including microbial growth, population dynamics, enzyme kinetics, photosynthesis, respiration, and animal energetics and behavior for designing plant, animal, and microbial systems. Two lec and three hours of lab a wk. Prereq: BSyE 242, Biol 201, Math 310, and Soil 205, 206 or MMBB 250.

BSyE **361 Transport Processes in Biological Systems** (3 cr). Heat and mass transfer processes applied to analysis of biological systems and related equipment and processes. Prereq: ChE 321, Math 310.

BSyE **WS386 Engineering Properties of Biological Materials** (3 cr). WSU BSysE 386. Composition of biological materials, mechanical and thermal properties, chemical and biological changes. Two lec and one 3-hr lab a wk. Prereq: CE 320, ME 340.

BSyE **398 Engineering Cooperative Internship** (cr arr). Supervised internship in professional engineering settings, integrating academic study with work experience; details of the co-op to be arranged with supervising professor before the start of the co-op; requires written report. Graded P/F. Cannot be used for technical elective. Prereq: perm.

BSyE **404** (s) **Special Topics** (cr arr). Prereq: perm.

BSyE **ID432 Bioreactor Theory and Design for Waste Treatment** (3 cr). Theory of biological waste treatment as applied to wastewaters, including reaction kinetics, reactor theory and design, reaction stoichiometry, microbiology, gas transfer theory, suspended growth and attached growth process theory and design, and separation of biological solids. One field trip. Prereq: Chem 112, Math 310, and Biol 201 or MMBB 250.

BSyE **433 Bioremediation** (3 cr). Theory and practice of bioremediation as applied to toxic and hazardous wastes, including reaction kinetics, reaction stoichiometry, microbiology, and design of ex- and in-situ processes. One-two field trips. Prereq: Math 170; Biol 201 or perm.

BSyE **441 Instrumentation and Measurements for Biological Systems** (3 cr). See AgE 441.

BSyE **ID&WS452 Environmental Water Quality** (3 cr). WSU BSysE 452. Engineering design to monitor, evaluate, and minimize non-point pollution from agriculture, environmentally acceptable disposal of wastes, bioremediation. Two lec and one 3-hr lab a wk. Prereq: AgE 351 or CE 321, Soil 205 or MMBB 250, Chem 112.

BSyE **WS457 Design for Watershed Management** (3 cr). WSU BSysE 457.

BSyE **460 Engineering Plant and Animal Environments** (2 cr). In-depth analysis of biological interactions used for designing plant and animal facilities and systems; plant and animal welfare, air quality, space, production parameters, water usage, radiant energy, and thermal properties; analytical study of animal and plant energetic relations to the environment; design of greenhouse systems, animal housing systems, ventilation systems, and environmental control systems from basic physical and biological requirements to mathematical modeling of system responses. Prereq: Math 310, ChE 321, Biol 201.

BSyE **462 Electric Power and Controls for Biological Systems** (3 cr). See AgE 462.

BSyE **478 Biological Systems Engineering Design I** (1 cr). Introduction to design process, CAD/CAM facility, product liability, and project scheduling; formulation of a design problem. Prereq: senior standing in BSyE, or perm.

BSyE **479 Biological Systems Engineering Design II** (2 cr). Individual or team design of a biological systems related problem; including synthesis, analysis, construction, and testing; final report required. Two 3-hr labs a wk. Prereq: BSyE 478.

BSyE **WS483 Food Separation Process Design** (3 cr). WSU BSysE 483.

BSyE **WS486 Food Rheology** (3 cr). WSU BSysE 486.

BSyE **WS487 Food Plant Design** (3 cr). WSU BSysE 487.

BSyE **WS488 Food Powders** (3 cr). WSU BSysE 488.

BSyE **491 Seminar** (1 cr). See AgE 491.

BSyE **499** (s) **Directed Study** (cr arr). Prereq: perm.

BSyE **WS586 Food Rheology** (3 cr). WSU BSysE 586.

BSyE **WS588 Food Powders** (3 cr). WSU BSysE 588.

BSyE **WS589 Food Quality Instrumentation** (3 cr). WSU BSysE 589.

Biology

Arthur W. Rourke, Chair, Dept. of Biological Sciences (252 Life Sc. Bldg. 83844-3051; phone 208/885-6280).

Note: Enrollment in lab sections of departmental courses will be limited to the number of stations available in that section.

Biol **100 Introduction to Biology** (4 cr). Satisfies core requirement J-3-b. Not open to majors or for minor cr. Intro to basic principles of biological systems. Three lec and one 3-hr lab a wk.

Biol **101 Perspectives in Biology** (1 cr). Open only to majors. Intro to the disciplines in the fields of biology; current research topics. Graded P/F.

Biol **201 Introduction to the Life Sciences** (4 cr). Satisfies core requirement J-3-b. Biological principles important in understanding animals, plants, and microorganisms; cytology; ecology; evolution; genetics; growth; molecular biology; physiology. Three lec, one 3-hr lab, and one 1-hr recitation a wk. Prereq: one semester college chemistry recommended.

Biol **202 General Zoology** (4 cr). Same as Zool 202. Anatomy, embryology, histology, and physiology of vertebrate and invertebrate animals; the animal kingdom. Three lec and two 2-hr labs a wk. Prereq: Biol 201.

Biol **203 General Botany** (4 cr). Same as Bot 203. Growth, development, and ecology of angiosperms in relation to heredity and environment; comparisons of angiosperms with other plant-kingdom divisions. Three lec and two 2-hr labs a wk. Prereq: Biol 201.

Biol **211 General Entomology** (4 cr). See Ent 211.

Biol **331 General Ecology** (3 cr) (C). Basic ecological principles and processes affecting the nature and occurrence of populations, communities, and biomes. Three 1-day (Saturday) field trips. Prereq: Biol 201, Math 143, and Biol 202 or 203.

Biol **351 General Genetics** (3 cr) (C). Same as Gene 314. Genetic mechanisms in animals, plants, and microorganisms. Prereq: Biol 201.

Biol **352 Experimental Genetics** (2 cr). Same as Gene 315. Techniques for genetic analysis at the organismal and molecular levels. Two 3-hr labs a wk. Prereq: Biol 351 and junior standing (minimum 58 credits).

Biol **353 Introduction to Molecular Biology** (3 cr). Overview of modern molecular genetics in plants, animals, fungi, and microbes preparing undergraduates to understand molecular biology in advanced courses; the nature of the gene; genetics of building a cell; strategies and complexity of genetic regulation; transcription and RNA splicing; genes, development, immunity and cancer; the dynamic genome. Prereq: Biol 351.

Biol **398** (s) **Internship** (1-3 cr, max 3). Supervised internship in professional biological, non-university settings, integrating academic study with work experience; requires formal written plan of activities to be approved by academic adviser and department chair before engaging in the work; a final written report will be evaluated by on-campus faculty. Graded P/F. Prereq: perm.

Biol **405 Biological Lab Procedures** (1 or 2 cr). Organization, preparation, and assisting in lab experiments or demonstrations under faculty supervision. Graded P/F. Prereq: perm.

Biol **442 Biological Evolution** (3 cr). Genetic, ecological, and paleontological aspects of evolution, including that of man. Prereq: Biol 202 and 351, or perm.

Biol **499** (s) **Directed Study** (cr arr). Prereq: perm.

Biol **501** (s) **Seminar** (cr arr). Prereq: perm.

Biol **502** (s) **Directed Study** (cr arr). Prereq: perm.

Biol **503** (s) **Workshop** (cr arr). Prereq: perm.

Biol **504** (s) **Special Topics** (cr arr). Prereq: perm.

Biol **505 Colloquium** (1 cr). Oral presentation reqd for cr. Graded P/F. Prereq: perm.

Biol **R531 Environmental Science and Pollutants** (3 cr) (Biol R431). Structure and function of ecosystems, sources and characteristics of hazardous materials, mechanisms and pathways of pollutant transport and degradation, mechanisms of pollutant impact on ecosystems and human health. Prereq: Biol 100 or 201 and Chem 101 or 111.

Biol **WS556 Cell Biotechnology** (1-3 cr). WSU GenCB 556.

Botany

Arthur W. Rourke, Chair, Dept. of Biological Sciences (252 Life Sc. Bldg. 83844-3051; phone 208/885-6280).

Note: Enrollment in lab sections of departmental courses will be limited to the number of stations available in that section.

Bot **203 General Botany** (4 cr). See Biol 203.

Bot **241 Systematic Botany** (3 cr). Classification and identification of flowering plants; local flora. Two 1-hr lec and two 2-hr labs a wk; four 1-day field trips. Prereq: Biol 203 or perm.

Bot **311 Plant Physiology** (4 cr). Functions of plant growth and development. Three lec and one 3-hr lab a wk. Prereq: Biol 203 and organic chem.

Bot **364 Botany Microtechniques** (3 cr). Methods of treating plant tissues for microscopic exam or histochemical tests. Two 3-hr labs a wk. Prereq: Biol 203 or perm.

Bot **381 Mushroom Identification** (1 cr). Methods of mushroom study; emphasis on the natural history of higher basidiomycetes and ascomycetes of the Northwest. Two 2-hr lec-labs a wk for the first 8 wks; one 1-day field trip. Prereq: Biol 100 or 201 or 203.

Bot **382 Mold Identification** (1 cr). Methods and procedures for identifying filamentous fungi (phycomycetes, ascomycetes, fungi imperfecti) commonly found in soil, water, air, and decomposing organic matter. Two 2-hr lec-labs a wk for second 8 wks; two field trips. Prereq: course in biol.

Bot **398** (s) **Internship** (1-3 cr, max 3). Supervised internship in professional biological, non-university settings, integrating academic study with work experience; requires formal written plan of activities to be approved by academic adviser and department chair before engaging in the work; a final written report will be evaluated by on-campus faculty. Graded P/F. Prereq: perm.

Bot **J401/J510 Techniques of Plant Tissue Culture** (2 cr). Isolation and culture of higher plant cells, tissues, and organs. Two 3-hr labs a wk. Cr earned in Bot 510 by completion of special project and term paper. Prereq: perm.

Bot **WS-J406/WS-J506 Microtechnique** (4 cr). WSU Bot 406/506.

Bot **J413/J515 Mineral Nutrition** (3 cr). Alt/yrs. Uptake and metabolism of mineral elements in higher plants. Two lec and one 2-hr disc a wk. Cr earned in Bot 515 by completion of term paper on mineral metabolism in higher plants. Prereq: Bot 311 and organic chemistry.

Bot **WS-J417/WS-J517 Stress Physiology of Plants** (3 cr). WSU Bot 417/517.

Bot **J425/J525 Developmental Plant Anatomy** (3 cr). Origin and development of tissues and organs of vascular plants in relation to heredity, environment, and physiology. Cr earned in Bot 525 by completion of analytical term paper. Two lec and one 3-hr lab a wk. Prereq: Biol 203.

Bot **J432/J530 Plant Ecology** (3 cr). General ecologic concepts and theory applied to plant populations and communities; intro to methods in plant ecology. Cr earned in Bot 530 by preparation of critical review of specific ecologic problem. Two lec and one 3-hr lab a wk; three 1-day field trips. Prereq: Biol 203, 331; Bot 241 recommended.

Bot **WS-J435/WS-J545 Plant Environmental Biophysics** (2 cr). WSU Soils 414/515.

Bot **WS-J436/WS-J546 Plant Environmental Biophysics Lab** (1 cr). WSU Soils 415/515.

Bot **ID441 Agrostology** (3 cr). WSU Bot 441. Classification, distribution, and structures of grasses. One lec and two 3-hr labs a wk; field labs and two 1-day field trips. Prereq: Biol 203 and Bot 241.

Bot **WS450 Introduction to Cell Biology** (3 cr). WSU GenCB 450.

Bot **452 Principles of Plant Molecular Biology** (3 cr). Thorough intro to core topics of plant biotechnology and genetic engineering: methods for gene manipulation; organization, structure, and expression of genes in nucleus, chloroplasts and mitochondria of plants; methods and prospects for their engineering. Prereq: one semester of biochemistry and/or genetics.

Bot **499** (s) **Directed Study** (cr arr). Prereq: perm.

Bot **500 Master's Research and Thesis** (cr arr).

Bot **501** (s) **Seminar** (cr arr). Prereq: perm.

Bot **502** (s) **Directed Study** (cr arr). Prereq: perm.

Bot **503** (s) **Workshop** (cr arr). Prereq: perm.

Bot **504** (s) **Special Topics** (cr arr). Prereq: perm.

Bot **WS505 Experimental Methods in Plant Physiology** (3 cr). WSU Bot 504.

Bot **WS506 Microtechnique** (4 cr). See Bot J406/J506.

Bot **510 Techniques of Plant Tissue Culture** (2 cr). See Bot J401/J510.

Bot **WS511 Plant Cell Biology** (3 cr). WSU Bot 511.

Bot **512 Plant Growth Substances** (3 cr). Alt/yrs. Hormonal regulation of physiological processes. Two lec and one 2-hr disc a wk. Prereq: Bot 311 and organic chemistry.

Bot **WS513 Molecular Mechanisms of Plant Development** (3 cr). WSU Bot 512.

Bot **515 Mineral Nutrition** (3 cr). See Bot J413/J515.

Bot **WS517 Stress Physiology of Plants** (3 cr). See Bot J417/J517.

Bot **WS518 Photosynthesis, Photorespiration, and Plant Productivity** (3 cr). WSU Bot 518.

Bot **525 Developmental Plant Anatomy** (3 cr). See Bot J425/J525.

Bot **530 Plant Ecology** (3 cr). See Bot J432/J530.

Bot **535 Plant Geography** (3 cr). Alt/yrs. Spatial relations of plants and plant communities as determined by intrinsic factors such as genetics and evolution, and extrinsic factors such as physiography, geology, climate, and climatic change; mechanisms of distribution, discontinuity patterns. One 3-day field trip. Prereq: Bot J432/J530 or perm.

Bot **WS537 Field Ecology** (2 cr). WSU Bot 463.

Bot **539 Physiological Ecology** (3 cr). Physiological adaptations to various environmental and habitat conditions and their ecologic consequences. Two lec and one 3-hr lab a wk. Prereq: Bot J432/J530, 311 recommended.

Bot **WS545 Plant Environmental Biophysics** (2 cr). See Bot WS-J435/WS-J545.

Bot **WS546 Plant Environmental Biophysics Lab** (2 cr). See Bot WS-J436/WS-J546.

Bot **556 Advanced Plant Molecular Biology** (3 cr). Molecular biology of plant organelles: structure of chloroplast and mitochondrial genomes and their replication; transcription, translation, and regulation of organelle genes and their interaction with nuclear genomes; genetic engineering of plant organelles-herbicide resistance, cytoplasmic male sterility. Prereq: one semester of biochemistry and/or genetics.

Bot **WS575 Basidiomycetes** (3 cr). WSU PI P 522.

Bot **WS576 Ascomycetes and Fungi Imperfecti** (2 cr). WSU PI P 523.

Bot **WS577 Lower Fungi** (2 cr). WSU PI P 524.

Bot **600 Doctoral Research and Dissertation** (cr arr).

Business

C. Randall Byers, Head, Dept. of Business (338A Admin. Bldg. 83844-3178; phone 208/885-6295; e-mail rbyers@uidaho.edu).

Note: Enrollment in 300- and 400-level business courses is restricted to students who have completed at least 58 credits. In addition, CBE students must have earned at least a 2.4 GPA in the CBE predictor courses.

No course (CBE or outside the college) that is required in a CBE student's curriculum may be taken by CBE undergraduates on a P/F basis, with the exception of courses that are taught only on a P/F basis. Only upper-division CBE courses used as free electives may be taken by CBE undergraduates on a P/F basis.

Students who have not completed the prerequisites to a course for which they are otherwise eligible may register for the course with the instructor's approval.

Bus **101 Introduction to Business Enterprises** (3 cr). Open to freshmen and sophomores only (less than 58 credit hours). General overview of business enterprise, including key concepts and issues in production, human resources, management, marketing, information systems, finance, and accounting, as well as economic environment and ethical/social responsibilities. May involve evening exams.

Bus **200** (s) **Seminar** (cr arr).

Bus **204** (s) **Special Topics** (cr arr). Prereq: perm.

Bus **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Bus **250 Introductory Systems Development** (3 cr). Introduction to event-driven and object-oriented systems development in a graphical user interface environment; significant hands-on demonstrations and uses of a variety of integrated application development tools. Prereq: 30 cr.

Bus **261 Real Estate** (3 cr). Listing, selling, leasing, financing, and brokerage; fundamentals of valuation and listing property management. This course has been certified by the Idaho Real Estate Commission.

Bus **C262 Real Estate Finance** (3 cr). Analysis of sources and methods used in the financing of real estate property construction, development, and purchase. This course has been certified by the Idaho Real Estate Commission. Prereq: Bus 261 or a course in essentials of real estate.

Bus **C263 Real Estate Law** (3 cr). Study of Idaho real estate law. This course has been certified by the Idaho Real Estate Commission. Prereq: Bus 261 or a course in essentials of real estate; BLaw 265.

Bus **298** (s) **Internship** (1-3 cr, max 6). Open only to majors in the Dept of Business. Graded P/F. Prereq: perm.

Bus **299** (s) **Directed Study** (cr arr). Prereq: perm.

Bus **301 Financial Management** (3 cr). Policies and practices involved in acquisition, control, and allocation of financial resources in business organizations. May involve evening exams. Prereq: Acct 201, Acct 202, Stat 251 or 271, and Econ 202.

Bus **302 Intermediate Financial Management** (3 cr). Advanced course in managerial finance that addresses more complex issues such as risk in capital budgeting, working capital management, mergers, business failure and reorganization, and lease financing. May involve evening exams. Prereq: Bus 301 or 340-344; Acct 300.

Bus **311 Introduction to Management** (3 cr). Organization, planning, leadership, and control; evolution of philosophies of management, decision making, motivation, human relations, and communication; organizational behavior and theory; history and present management practices, showing interrelationships between the needs and expectations of the individual, the organization, and society. May involve evening exams.

Bus **314 World of Corporate Business** (3 cr). Current key issues affecting large corporations including personal and professional development, corporate governance and takeovers, the role of profits, corporate culture and politics, ethical issues, human resources, social responsibility, government relations, the role and functions of a chief executive officer, and doing business in the international arena; course features senior corporate executives as weekly presenters. Prereq: upper-division standing.

Bus **321 Marketing** (3 cr). Marketing institutions and relationships with economic, political, legal, and social environment; principles, functions, concepts, and issues of marketing within a firm and the relationship of marketing to other business disciplines. May involve evening exams.

Bus **324 Consumer Behavior** (3 cr). Behavioral science theories, concepts, and methods applied to the understanding and prediction of consumer behavior; emphasis on structuring marketing policy to fulfill consumer requirements. May involve evening exams. Prereq: Bus 321 or Bus 340-344.

Bus **325 Retail Distribution Management** (3 cr). Analysis of retail operations including location, market selection, capital and physical requirements, store layout, merchandise management, customer relations, channel structure, and channel member relations. May involve evening exams. Prereq: Bus 321 or Bus 340-344.

Bus **326 Marketing Channels Management** (3 cr). Analysis of planning, organization, and control issues related to distribution of goods and services; topics include retail and wholesale institutions, channel member behavior patterns, and vertical marketing systems. Prereq: Bus 321 or Bus 340-344.

Bus **327 Services/Nonprofit Marketing** (3 cr). Marketing principles applied to marketing of intangibles, societal issues, and to donor markets and publics for profit and nonprofit organizations; includes strategies for designing service layout and process, training of service providers, and other marketing mix elements to enhance customer satisfaction. Prereq: Bus 321 or 340-344.

Bus **332 Quantitative Methods in Business** (3 cr). Survey of management science techniques including constrained optimization and simulation; probability review, forecasting tech including time series analysis and decision theory. May involve evening exams. Prereq: Stat 251 or 271, Math 160 or 170.

Bus **340 Business Systems I** (3 cr). Introduction to business as a general system; consideration of external environmental issues using an economy-industry-company framework of analysis and its extension to global scanning; discussion of socio-political forces, domestic and foreign financial markets, and the role of technology in business organizations; a comprehensive integrative case is used to illustrate these ideas. May involve evening exams. Prereq: upper-division standing in CBE and BLaw 265.

Bus **341 Business Systems II** (3 cr). A continuation of the discussion of business systems with a primary focus on internal issues; discussion of valuation models and legal issues facing business organizations; examination of organizational subsystems including those responsible for generating revenues, producing the product or service, and providing support (marketing, operations, finance, human resources, information systems); a comprehensive integrative case is used to illustrate these ideas. May involve evening exams. Prereq or coreq: Bus 340.

Bus **342 Team Building** (1 cr). An introduction to effective team building; common problems in teams and strategies for improving team productivity; specific topics include clarifying team member roles and goals, managing team member relations, problem-solving, and identifying the role of leadership in teams. May involve evening exams. Prereq: upper-division standing in CBE; prereq or coreq: Bus 340.

Bus **343 Planning and Decision-Making in Organizations** (2 cr). An overview of the managerial planning process with a focus on business decision making through the collection and analysis of data; topics include strategic management, decision making models and approaches, sources of information, value of information, pro-forma financial analysis, and forecasting; a comprehensive integrative case is used to illustrate these ideas. May involve evening exams. Prereq: Stat 271; prereq or coreq: Bus 341.

Bus **344 Product/Service and Process Planning** (3 cr). An overview of the marketing, engineering, financial, and production decisions involved in developing new products and services, and determining the product mix; examination of the theory, tools, and approaches that can be used to assist managers in making effective new product/service and process decisions; specific topics include consumer behavior, marketing research, optimization techniques, capital budgeting, and product/service and process design using Total Quality Management (TQM); a comprehensive integrative case is used to illustrate these ideas. May involve evening exams. Prereq or coreq: Bus 341, 343.

Bus **345 Managing the Firm's Resources** (4 cr). An overview of the decisions necessary for the effective management of the firm's financial, human, and information resources; topics include: management of the firm's financial structure, dividend policy, and working capital; attracting, maintaining, and developing the work force; systems planning, requirements analysis, and data design; a comprehensive integrative case is used to illustrate these ideas. May involve evening exams. Prereq or coreq: Bus 344.

Bus **346 Business Operating Decisions** (4 cr). An overview of the business operating decisions associated with creating demand for the firm's products and services as well as producing the system outputs; a systems approach is used to illustrate how the various business functions and support staff interact in executing these decisions; examination of the use of information technology to facilitate integration; a comprehensive integrative case is used to illustrate these ideas. May involve evening exams. Prereq or coreq: Bus 345.

Bus **350 Management Information Systems** (3 cr). Data processing applications for business; intro to information systems; data base concepts; analysis, design, and implementation of computer-based information systems and consideration of associated problems. May involve evening exams. Prereq: Acct 202.

Bus **352 Modern Information Technology** (3 cr). Introduction to IT hardware and software including computers, storage devices, telecommunications equipment, and system software. May involve evening exams. Prereq: Bus 250.

Bus **355 Systems Analysis and Design** (3 cr). Introduction to analysis and design of modern information systems. May involve evening exams. Prereq: Bus 250; prereq or coreq: Bus 350 or 340-344.

Bus **362 Real Property Appraisal** (3 cr). Theories and principles in estimating value of natural resources and any attached improvements. This course has been certified by the Idaho Real Estate Commission. Prereq: Bus 261, Econ 202 or perm.

Bus **364 Insurance** (3 cr). Major branches of insurance; principles and practices.

Bus **370 Production/Operations Management** (3 cr). Intro to production/operations management, including product design, process design, facility layout, facility location, job design, work measurement, project management, quality control, inventory management, maintenance, and operations scheduling and control. May involve evening exams. Prereq: Math 160 or Math 170 and Stat 251 or 271 or 301.

Bus **378 Project Management** (3 cr). Planning, organizing, staffing, controlling, and directing an organization's resources for special projects; topics include matrix organizations, cross functional teamwork, budgeting, work breakdown structures, critical path method (CPM), program evaluation and review techniques (PERT), capacity planning, and project control. May involve evening exams.

Bus **380** **International Business** (3 cr). International trade and the nature of exchange among nations; socioeconomic environment of the multinational corporation. May involve evening exams. Prereq: Econ 202.

Bus **398** (s) **Internship** (1-3 cr, max 6). Open only to majors in the Dept of Business. Graded P/F. Prereq: perm.

Bus **400** (s) **Seminar** (cr arr). Prereq: perm.

Bus **401** **Investments** (3 cr). Functioning of financial markets; types of securities and their suitability to various investment goals. Prereq: Bus 301 or 340-346.

Bus **404** (s) **Special Topics** (cr arr). Prereq: perm.

Bus **405** **Portfolio Management** (3 cr). Application of security selection, portfolio theory and construction; financial futures; risk and return in investments; may involve management of actual portfolios. Prereq: Bus 401.

Bus **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Bus **407** **Financial Institutions** (3 cr). Management and regulation of commercial and nonmonetary financial institutions including savings and loan institutions. Prereq: Bus 301 or 340-346; Econ 343.

Bus **408** **Security Analysis** (3 cr). Emphasis on theory and practice of security analysis and other techniques of financial analyses; may involve management of actual portfolios. Prereq: Bus 302, Acct 301.

Bus **409** **Problems in Financial Management** (3 cr). Analysis of selected topics in financial management; asset allocation; capital budgeting and valuation; synthesis of financial management skills through case analysis; written and oral reports and computer simulations. May involve evening exams. Prereq: Bus 302.

Bus **412** **Human Resource Management** (3 cr). Human resource/personnel management functions including recruitment, training, compensation, performance appraisal, health and safety, labor relations, and legal issues. Prereq: BLaw 265; Bus 311 or 340-346.

Bus **413** **Organizational Behavior** (3 cr). Micro oriented treatment of areas including communication, motivation, group process, conflict, leadership style. Prereq: Bus 311 or Bus 340-346 or AgEc 391.

Bus **414** **Entrepreneurship** (3 cr) (C). Process of providing solutions to identified consumer needs; characteristics of individuals who succeed; sources of venture ideas; evaluating and developing ideas; business plans; franchising.

Bus **415** **Small Business Management** (3 cr). Study of problems encountered by small business organizations through case analysis of actual small business operations; topics include location, staffing, financing, marketing, and growth. May involve field trips. Prereq: Bus 301 and 311 and 321 or 340-346 or perm.

Bus **416** **Staffing and Compensation** (3 cr). Specialized human resource management topics including selection, placement, and career development of employees; development and administration of monetary-nonmonetary reward programs, job evaluation systems, and wage incentive plans. Prereq: Bus 412.

Bus **418** **Organization Theory** (3 cr). Macro organization behavior; study of organization structure and processes; how environment, technology, and size impact structure and processes. Prereq: Bus 311 or 340-346.

Bus **420** **Promotional Strategy** (3 cr) (C). Marketing management point of view; objectives, methods, strategies, budgets, and measures of effectiveness; campaign management including advertising, public relations, sales promotion, reseller support, personal selling. May involve evening exams. Prereq: Bus 321 or 340-346; prereq or coreq: Bus 324.

Bus **421** **Marketing Research and Analysis** (3 cr). Applied research focusing on marketing information needs for managerial decision making; includes research design, data collection methods, statistical analysis, and use of marketing information systems to forecast market and sales potential, measure effectiveness of promotions, and analyze new products and distribution of goods and services. May involve evening exams. Prereq: Bus 321 and 332, or Bus 340-346.

Bus **422** **Sales Force Management** (3 cr). Selecting, training, compensating, stimulating, supervising, and directing the selling efforts of an outside sales force; organization and method. May involve evening exams. Prereq: Bus 311 and 321, or Bus 340-344.

Bus **428** **Product Management** (3 cr). Analysis of the product management process including the product life cycle, new product development, product assortment decisions, product elimination, forecasting market potential and sales, and the development of the marketing plan. May include evening exams. Prereq: Bus 324, 420, 421, Acct 381.

Bus **437** **Statistics for Business Decisions** (3 cr). Same as Stat 437. Decision making under risk; the economic theory of information; behavioral issues in decision theory. Prereq: Stat 251 or 271 or 301.

Bus **439** **Systems and Simulation** (3 cr). Distribution theory, random numbers, modeling concepts and simulation of queuing and inventory systems. Prereq: Bus 332 or 340-346.

Bus **441** **Labor Relations** (3 cr). Evolution, structure, and procedures of contemporary labor-management relations; unionization, other concerted activity and employment at will. Prereq: Bus 311 or 340-346.

Bus **452** **Business Telecommunications Management** (3 cr). Survey of telecommunications management issues in a business environment; topics include local and wide area networks, telephony, public networks, and application of telecommunications technology in strategic business management. Prereq: Bus 350 or 340-344; prereq or coreq: Bus 352.

Bus **453** **Database Design** (3 cr). Introduction to modern database management systems and their use in solving business problems. May involve evening exams. Prereq: Bus 355.

Bus **454** (s) **Current Issues in Information Systems** (3 cr, max arr). Discussion of major topics of current importance in information systems. Prereq: Bus 350 or 340-346 and perm.

Bus **455** **IS Project** (3 cr). Development of information systems and management of IS projects. May involve evening exams. Prereq: Bus 352, 355, and 453.

Bus **456** **Quality Management** (3 cr). Same as Stat 456. Principles of total quality management, with emphasis on problem solving techniques to continually improve processes; customer-driven quality, management and employee participation, statistical process control, product/process design, and process capability. May include evening exams. May involve field trips. Prereq: Stat 251 or 271 or 301.

Bus **470** **Purchasing and Materials Management** (3 cr). Overview of materials management function in organizations; includes consideration of purchasing, logistics, and inventory management. Prereq: Bus 370 or 340-346.

Bus **472** **Operations Planning and Scheduling** (3 cr). In-depth study of planning and scheduling techniques with emphasis on material requirements planning. May involve field trips. Prereq: Bus 370 or 340-346.

Bus **478** **Seminar in Operations Management** (3 cr). Readings on current issues in operations management and case studies for analyzing situations faced by operations managers. May involve field trips and/or special projects. Prereq: Bus 370, 456, 472; prereq or coreq: Bus 470.

Bus **481** **International Finance** (3 cr). Study of financial problems facing business engaged in international activities; foreign exchange risk management, international diversification, multinational capital budgeting, country risk analysis, financing foreign investments, international financial markets. Prereq: Bus 301 and Bus 380 or Econ 446; or Bus 340-346.

Bus **482** **International Marketing** (3 cr). Foreign market operations; economic, cultural, and political aspects of international markets and how they interact with the marketing mix. Prereq: Bus 321 and Bus 380 or Econ 446; or Bus 340-346.

Bus **485** **Advanced International Business** (3 cr). Integrated study of economic and political aspects of environment that influence business strategy; study of major international agreements (European Community, NAFTA, etc.). Prereq: Bus 380 or Econ 446 or Bus 340-346.

Bus **490** **Strategic Management** (3 cr). Capstone, integrative course; formulation and implementation of competitive strategies; both written and oral reports and case analysis. May involve evening exams. Prereq: Engl 207 or 208 or 209 or 313 or 317; Bus 301, 311, 321, or Bus 340-346; sr standing.

Bus **499** (s) **Directed Study** (cr arr). Prereq: perm.

Bus **501** (s) **Seminar** (cr arr). Prereq: perm.

Bus **502** (s) **Directed Study** (cr arr). Prereq: perm.

Bus **504** (s) **Special Topics** (cr arr). Prereq: perm.

Bus **505** (s) **Workshop** (cr arr). Prereq: perm.

Bus **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Bus **530** **Managing Technical Teams** (3 cr). The human side of managing teams of technical people; topics include organizational design, group process, team building, motivation, conflict management, leadership, empowerment, and performance appraisal. May involve evening exams.

Bus **531** **Managing the Design Process** (3 cr). Principles of management as they relate to the design and development of new products and the improvement of existing products; focus on interrelationships between marketing, engineering, and manufacturing functions; topics include strategic implications of design, marketing strategy as it relates to product design, product life cycles, understanding customer needs, translating customer information into product specifications, use of quality management principles in design, time-to-market compression in product development, concurrent engineering, design for manufacturing, and implications of ISO 9000 on design. May involve evening exams and/or field trips. Prereq: undergraduate degree in engineering or perm.

Bus **533** **Strategies for Managing Complex Systems** (3 cr). Introduction and application of general systems theory as a framework for understanding system life cycles, system management, and decision making in complex environments; topics include systems approach to problem solving, cost-benefit analysis, risk analysis, uncertainty due to conflict modeled using game theory, simulation, and linear programming. May involve evening exams. Prereq: Stat 251 or 271 or 301, Math 160 or 170.

Bus **534** **Management of Technology and Technological Change** (3 cr). Introduction to advanced engineering, information, and manufacturing technologies; exploration of opportunities and challenges these technologies present the organization; topics include technology life cycles, the use of technology for competitive advantage, information systems, human-technology interactions, and managing changes; technologies considered include computer aided design/computer aided manufacturing, computer integrated manufacturing, group technology, flexible manufacturing systems, group decision support systems, and expert systems. May involve evening exams and/or field trips.

Bus **WS582** **International Business** (3 cr). WSU I Bus 582. Open only to participants in College of Business and Economics International Exchange Programs.

Bus **597** (s) **Practicum** (cr arr). Prereq: perm.

Bus **598** (s) **Internship** (cr arr). Prereq: perm.

Bus **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Business Education

Jerry L. Tuchscherer, Director, Div. of Adult, Counselor, and Technology Education (210 Educ. Bldg. 83844-3083; phone 208/885-6556).

BuEd **101-102 Typewriting I-II** (2 cr). BuEd 101: development of skill sufficient for personal use. BuEd 102: speed and control to occupational competence levels.

BuEd **104 Keyboarding** (1 cr). Microcomputer keyboarding skills development. Accelerated 9-wk course. Two lec and 2 hrs of lab a wk.

BuEd **111 Computer Skills** (3 cr) (BuEd 110). Same as ITED 111. Fundamentals of computing; modules on telecommunications, hardware and software components, basic computing applications, and current computing trends. One lec and 3 hrs of lab a wk.

BuEd **185 Machine Calculation** (2 cr). Operation of commonly used office adding-calculation machines for the solution of business mathematics problems.

BuEd **200** (s) **Seminar** (cr arr). Prereq: perm.

BuEd **203** (s) **Workshop** (cr arr). Prereq: perm.

BuEd **204** (s) **Special Topics** (cr arr). Prereq: perm.

BuEd **J210/J410 Alphabetic Shorthand I** (1 or 2 cr). Alphabetic shorthand theory, practice, dictation, and transcription (1 cr, 1/2 sem); comparative analysis of alphabetic shorthand systems and methods of teaching alpha shorthand (1 cr, 1/2 sem). Additional projects/assignments reqd for upper-div cr. Two lec and 2 hrs of lab a wk.

BuEd **298** (s) **Internship** (cr arr). Prereq: perm.

BuEd **299** (s) **Directed Study** (cr arr). Prereq: perm.

BuEd **311 Alphabetic Shorthand II** (2 cr). Speed and transcription skill development including machine transcription and methods of teaching alphabetic shorthand for vocational preparation and note taking.

BuEd **C312 Local Government Records Management** (2 cr) (C). Primarily for city clerks and other city officials. Records management, microfilming, filing, and filing equipment useful in city government record-keeping functions; legal requirements of destruction and disposal of city records in Idaho; practice of a number of city officials in Idaho in indexing city council meetings and maintaining city council files.

BuEd **328 Computer Operating Systems for Technology** (3 cr). See ITED 328.

BuEd **395 Administrative Office Procedures** (3 cr). Administrative office procedures, components, and responsibilities.

BuEd **398** (s) **Internship** (cr arr). Prereq: perm.

BuEd **400** (s) **Seminar** (cr arr). Prereq: perm.

BuEd **403** (s) **Workshop** (cr arr). Prereq: perm.

BuEd **404** (s) **Special Topics** (cr arr). Prereq: perm.

BuEd **410 Alphabetic Shorthand** (1 or 2 cr). See BuEd J210/J410.

BuEd **413 Administrative Office Management** (3 cr). Prepares students to assume management role in supervision of people, procedures, and equipment.

BuEd **J415/J515 Microcomputer Applications** (3 cr) (415, C). Same as ITED J415/J515. Advanced computer applications course designed primarily for office administration and business teacher education students; includes extensive hands-on experience using word processing, spreadsheet, and database programs used in both industry and business education programs; addresses methodology, curriculum development, and classroom management techniques; involves sizable curriculum development project. Graduate students do an advanced project. Three lec and 2 hrs of lab a wk. Prereq: BuEd 111 and/or perm.

BuEd **418 Teaching Consumer Economics** (2 cr). Methods and materials for teaching consumer economics. Prereq: Econ 201 or 100 or equiv.

BuEd **J419/J519 Information Processing Management** (3 cr). Same as ITED J419/J519. Teaching and training strategies for information retrieval, processing, storage, and distribution utilizing state-of-the-art hardware, software, technology and database management principles. Advanced project reqd for grad cr. One lec and 2 hrs of lab a wk. Prereq: BuEd 111 or perm.

BuEd **430 Supervising Business Professionals of America** (2 cr). Planning, implementation, and supervision of the Business Professionals of America vocational student organization; includes attendance at competitive events. Two lec and 2 hrs of lab a wk; attendance at regional and state leadership conference.

BuEd **457 Transitioning to Work** (2-3 cr). See VoEd 457.

BuEd **460 Desktop Publishing** (3 cr). Same as ITED 460. Advanced desktop publication techniques, concepts, and applications through use of computer technology; planning, layout, and design of publications are highlighted. Prereq: BuEd 110/ITED 111 and BuEd/ITED 415 or perm.

BuEd **490 Records Management** (3 cr). ARMA filing rules, organization and maintenance of paper files, using database management software.

BuEd **491-492 Teaching Business Education I-II** (2-3 cr). Methods and materials. BuEd 491: basic business subjects. BuEd 492: office occupations. Prereq: perm.

BuEd **493 Teaching Marketing Education** (3 cr). Same as VoEd 493. Selection, organization, and presentation of subject matter pertaining to preparatory marketing education programs at the secondary-school level; emphasis on teaching methods and techniques.

BuEd **494 Marketing Education Materials** (2 cr). Same as VoEd 494. Examination, development, and application of instructional materials in marketing education.

BuEd **495 Supervising DECA Programs** (2 cr). Same as VoEd 495. Role of DECA in marketing education; organization and implementation of youth activities.

BuEd **496 Directed Work Experience** (1-3 cr, max 9). Same as VoEd 496. Job analysis and descriptions; weekly work-experience reports and analysis coordinated with problems related to the student's employment in an approved work station. Prereq: perm.

BuEd **497** (s) **Practicum** (cr arr). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

BuEd **498** (s) **Internship** (cr arr). Prereq: perm.

BuEd **499** (s) **Directed Study** (cr arr). Prereq: perm.

BuEd **500 Master's Research and Thesis** (cr arr).

BuEd **501** (s) **Seminar** (cr arr). Prereq: perm.

BuEd **502** (s) **Directed Study** (cr arr). Prereq: perm.

BuEd **503** (s) **Workshop** (cr arr). Prereq: perm.

BuEd **504** (s) **Special Topics** (cr arr). Prereq: perm.

BuEd **515 Microcomputer Applications** (3 cr). See BuEd J415/J515.

BuEd **519 Word Processing** (3 cr). See BuEd J419/J519.

BuEd **520 Office Occupations Subjects** (3 cr). Methods and materials; achievement standards; review of literature and research. Prereq: perm.

BuEd **521 Basic Business Subjects** (3 cr). Methods and materials; achievement standards; review of literature and research. Prereq: perm.

BuEd **522 Issues in Business Education** (3 cr). Philosophies, objectives, trends, and organization patterns of business education in secondary schools. Prereq: perm.

BuEd **524 Issues in Marketing Education** (3 cr). Same as VoEd 524. Philosophies, objectives, trends, and organization patterns of marketing education in secondary schools. Prereq: perm.

BuEd **597** (s) **Practicum** (cr arr). Prereq: perm.

BuEd **598** (s) **Internship** (cr arr). Prereq: perm.

BuEd **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Business Law

Marcia S. Niles, Associate Chair, Dept. of Accounting (209-G Admin. Bldg. 83844-3169; phone 208/885-6453).

BLaw **265 Legal Environment of Business** (3 cr) (C). Law and its relationship to society; legal framework of business enterprises; court organization and operation; private property and contracts as basic concepts in a free enterprise system. May involve evening exams.

BLaw **420 Commercial Law** (3 cr) (C). Uniform commercial code and law of agency, partnerships, and corporations. May include evening exams. Prereq: BLaw 265.

Chemical Engineering

Roger A. Korus, Chair, Dept. of Chemical Engineering (312 Buchanan Engr. Lab. 83844-1021; phone 208/885-6793).

ChE **123 Computations in Chemical Engineering** (2 cr). Methods of analyzing and solving problems in chemical engineering using personal computers; spreadsheet applications, data handling, data fitting, and equation solving.

ChE **204** (s) **Special Topics** (cr arr). Prereq: perm.

ChE **223 Material and Energy Balances** (3 cr). Conservation of mass and energy calculations in chemical process systems. Prereq: Chem 112, Math 175.

ChE **299** (s) **Directed Study** (cr arr). Prereq: perm.

ChE **ID&WS321 Engineering Thermodynamics and Heat Transfer** (3 cr). WSU M E 301. First and second laws of thermodynamics; thermodynamic processes; thermodynamic properties; flow processes; conversion of heat into work; conduction, convection, radiation, and heat exchangers. Prereq: CE 210; coreq: Math 310.

ChE **330 Stagewise Operations** (3 cr). Stagewise operations, including distillation, extraction, ion exchange, absorption. Prereq: ChE 223, 321; coreq: Chem 305.

ChE **393 Chemical Engineering Projects** (1-3 cr, max 9). Problems of a research or exploratory nature. Prereq: perm of dept.

ChE **398** (s) **Engineering Cooperative Internship** (3 cr). Supervised internship in professional engineering settings, integrating academic study with work experience; requires written report; positions are assigned according to student's ability and interest. Graded P/F. Prereq: perm.

ChE **404** (s) **Special Topics** (cr arr). Prereq: perm.

ChE **410 Fundamentals of Polymer Science and Processing** (3 cr). Structure and formation of polymers, polymerization and fabrication process and properties. Prereq: perm.

ChE **415 Integrated Circuit Fabrication** (3 cr). Growth of semiconductor crystals, microlithography, and processing methods for integrated circuit fabrication. Prereq: ChE 223.

ChE **423 Reactor Kinetics and Design** (3 cr). Chemical reaction equilibria, rates, and kinetics; design of chemical and catalytic reactors. Prereq: ChE 223, Math 310, Chem 305.

ChE **430-431-432 Transport and Rate Processes I-II-III** (3 cr; 2 cr; 3 cr). Transport phenomena involving momentum, energy, and mass with applications to process equipment design. Coordinated lec-lab periods. ChE 430-431-432 are to be taken in sequence. Prereq for 430: ChE 223 and 321, CE 320, Math 310.

ChE **433 Chemical Engineering Lab I** (1 cr). Lab experiments in chemical engineering. Prereq: ChE 423; coreq: ChE 330 and 431.

ChE **434 Chemical Engineering Lab II** (1 cr). Lab experiments in chemical engineering.

ChE **444 Process Analysis and Control** (3 cr). Process modeling, dynamics, and analysis. Prereq: ChE 223, Math 310.

ChE **445 Digital Process Control** (3 cr). Same as EE 477. Dynamic simulation of industrial processes and design of digital control systems. Two lec and one 3-hr lab a wk. Prereq: ChE 444 (prereq for EE majors: EE 350).

ChE **453-454 Chemical Process Analysis and Design** (3 cr). Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. ChE 453 and 454 are to be taken in sequence. Prereq for ChE 453: ChE 330, 430; coreq for 453: ChE 431. Prereq for ChE 454: ChE 453; coreq for 454: ChE 423, 432.

ChE **460 Biochemical Engineering** (3 cr). Application of chemical engineering to biological systems including fermentation processes, biochemical reactor design, and biological separation processes.

ChE **ID&WS-J470/J570 Hazardous Waste Management** (3 cr). WSU Ch E 470. Credit not granted for both ChE J470/J570 and EnvS R470. Principles and practices of management of hazardous and solid wastes with emphasis on CERCLA (Superfund) process for cleanup of uncontrolled hazardous waste sites and RCRA process as it applies to industrial waste treatment, storage, and disposal (TSD) facilities. Additional projects/assignments reqd for grad cr. Prereq: Stat 301, sr or grad standing in science or engineering, and perm.

ChE **ID&WS-J475/ID&WS-J575 Air Pollution Control** (2-3 cr). WSU C E 471/508. Analysis and design of physical and chemical methods of air pollution control; particulate and gas emission control methods, standards for sources. Additional projects/assignments reqd for grad cr. Prereq: CE 320 or perm.

ChE **J480/J580 Engineering Risk Assessment for Hazardous Waste Evaluations** (3 cr). Quantitative and qualitative approaches to assessing risks to public health and environment from chemical contaminants; toxicology, exposure assessment, risk characterization, and environmental modeling; critical reviews of specific toxins and actual waste site studies. Additional projects/assignments reqd for grad cr. Prereq: senior or grad standing in science or engineering; Biol 201 or 100 and Stat 301 or perm; ChE J470/J570 recommended.

ChE **491 Seminar** (1 cr). Recent developments and topics. Graded P/F. Prereq: sr standing.

ChE **499** (s) **Directed Study** (cr arr). Prereq: perm.

ChE **500 Master's Research and Thesis** (cr arr).

ChE **501** (s) **Seminar** (cr arr). Prereq: perm.

ChE **502** (s) **Directed Study** (cr arr). Prereq: perm.

ChE **504** (s) **Special Topics** (cr arr). Prereq: perm.

ChE **ID&WS515 Transport Phenomena** (3 cr). Same as ME 515. WSU Ch E 510. Advanced treatment of momentum, energy, and mass transport processes; solution techniques. Prereq: perm.

ChE **WS524 Polymer Reactor Engineering** (3 cr). WSU Ch E 525.

ChE **525 Advanced Heat Transfer** (3 cr). Same as ME R525. Application of fundamentals of heat conduction, radiation, and convection; relationships to fluid dynamics and mass transfer; economics and design application. Prereq: perm.

ChE **ID&WS527 Thermodynamics** (3 cr). WSU ChE 527. Thermodynamic laws for design and optimization of thermodynamic systems, equations of state, properties of ideal and real fluids and fluid mixtures, stability, phase equilibrium, chemical equilibrium, applications of thermodynamic principles. Prereq: ChE 321 or perm.

ChE **ID&WS529 Chemical Engineering Kinetics** (3 cr). WSU Ch E 529. Interpretation of kinetic data and design of reactors for heterogeneous chemical reaction systems; heterogeneous catalysis, gas-solid reactions, gas-liquid reactions; packed bed reactors, fluidized bed reactors. Prereq: perm.

ChE **537 Advanced Fluid Mechanics** (2-3 cr). Same as ME 537. Fluid systems used in industry; non-Newtonian behavior of particle and plastic systems; two-phase situations, including fluidization and film flow. Prereq: perm.

ChE **541 Chemical Engineering Analysis I** (3 cr). Mathematical analysis of chemical engineering operations and processes; mathematical modeling and computer applications. Prereq: perm.

ChE **ID&WS542 Chemical Engineering Analysis II** (3 cr). WSU Ch E 542. Numerical and analytical methods in the solution of chemical engineering problems; partial differential equations, application of approximate variational methods and integral transforms. Prereq: perm.

ChE **ID&WS545-ID&WS546 Mass Transfer Operations I-II** (3 cr). WSU Ch E 546. Diffusional and equilibrium operations. Prereq: perm.

ChE **ID&WS560 Biochemical Engineering** (3 cr). WSU Ch E 560. Application of chemical engineering to biological systems including fermentation processes and biochemical reactor design, transport phenomena in biological systems and biochemical technology.

ChE **570 Hazardous Waste Management** (3 cr). See ChE J470/J570.

ChE **ID571 Advanced Plant Design** (3 cr). WSU Ch E 571. Design of process plants for optimum costs and economic return; scale-up of pilot plants. Prereq: perm.

ChE **ID&WS575 Air Pollution Control** (2-3 cr). See ChE J475/J575.

ChE **578 Treatment of Hazardous Chemical Waste** (3 cr). Design of alternative processes and operations for treatment of hazardous chemicals. Prereq: Math 310 and ChE 432 or CE 331.

ChE **579 Hazardous Waste Site Remediation Design** (3 cr). Same as Hydr 579. Characterization of hazardous waste sites, identification of physical, chemical, and biological corrective action programs and site restoration; includes design problems and case studies to illustrate corrective action and site restoration in compliance with regulations. Prereq: Geol 409.

ChE **580 Engineering Risk Assessment for Hazardous Waste Evaluations** (3 cr). See ChE J480/J580.

ChE **581 Hazardous Waste Management Seminar** (1 cr). Environmental engineering and science topics related to hazardous waste characterization, cleanup, and regulations; includes case histories, paper, and oral presentation. Prereq: perm.

ChE **600 Doctoral Research and Dissertation** (cr arr).

Chemistry

Peter R. Griffiths, Chair, Dept. of Chemistry (116 Malcolm M. Renfrew Hall 83844-2343; phone 208/885-6552; e-mail chemoff@uidaho.edu).

RELATED FIELD: See microbiology, molecular biology and biochemistry.

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: 111-113-253, 111-112; 101-275.

Chem **050 Chemistry Fundamentals** (0 cr). Chemical problem solving, SI unit conversion, mole concept, chemical stoichiometry, solution concentration problems, periodic table, chemical formulas and nomenclature, and equation balancing. Graded P/N/F. A special fee is charged for this course.

Chem **100 Chemistry and the Citizen** (4 cr) (Chem 101). Satisfies core requirement J-3-b. Not acceptable as a substitute where Chem 101, 111, or equiv is specified. Cr may be earned in only one of the following: Chem 100, 101, 111. Nonmathematical descriptive treatment relating key developments of chemistry to modern living. Three lec, dem, and one 2-hr lab a wk.

Chem **101 Introduction to Chemistry I** (4 cr) (Chem 103). Satisfies core requirement J-3-b. Cr may be earned in only one of the following: Chem 100, 101, 111. General treatment of the fundamentals of chemistry. Three lec, one recitation, and one 3-hr lab a wk. Does not satisfy the prereq for Chem 112 or 113. No prerequisite.

Chem **111 Principles of Chemistry I** (4 cr). Satisfies core requirement J-3-b. Cr may be earned in only one of the following: Chem 100, 101, 111. Intensive treatment of principles and applications of chemistry. Three lec, one recitation, and one 3-hr lab a wk. Prereq: Chem 050 or adequate score on the chemistry fundamentals exam or satisfy departmental requirement.

Chem **112 Principles of Chemistry II** (4 cr) (Chem 114). Satisfies core requirement J-3-b. Continuation of Chem 111 for students who do not plan to take further professional chemistry courses. Some work in inorganic, organic, and biochemistry, electrochemistry, nuclear chemistry, and in qualitative inorganic analysis. Max six cr in Chem 112 and 113 combined. Three lec, one recitation, and one 3-hr lab a wk. Prereq: Chem 111 or perm.

Chem **113 Inorganic Chemistry and Qualitative Analysis** (5 cr) (Chem 112). Satisfies core requirement J-3-b. Elem theoretical chemistry and applications to analytical practice; lab work in the qualitative separation of cations and anions by semimicro methods. Max six cr in Chem 112 and 113 combined. Three lec and two 3-hr labs a wk. Prereq: Chem 111 or perm.

Chem **121 Glassblowing** (1 cr). Techniques used in constructing scientific apparatus from glass. Graded P/F. One 3-hr lab a wk. Prereq: perm of dept.

Chem **200** (s) **Seminar** (cr arr). Prereq: perm.

Chem **204** (s) **Special Topics** (cr arr). Prereq: perm.

Chem **253 Quantitative Analysis** (5 cr). Fundamental principles and techniques of chemical analysis; intro to sampling, standardization, data evaluation, gravimetric/volumetric methods, and instrumental techniques. Three lec and two 3-hr labs a wk. Prereq: Chem 112 or 113.

Chem **275 Carbon Compounds** (3 cr). Aspects of organic chemistry important to students in the life sciences. Duplicate cr will not be allowed in first-year courses in organic chemistry. Prereq: Chem 101, 111 or perm.

Chem **276 Carbon Compounds Lab** (1 cr). Lab to accompany Chem 275; for students who need only 1 cr of lab. One 3-hr lab a wk. Prereq or coreq: Chem 275 or 277.

Chem **277 Organic Chemistry I** (3 cr). Principles and theories of organic chemistry; properties, preparation, and reactions of organic compounds. Duplicate cr will not be allowed in first-year courses in organic chemistry. Prereq: Chem 112 or 113.

Chem **278 Organic Chemistry I: Lab** (1 cr). One 3-hr lab a wk. Prereq or coreq: Chem 277.

Chem **299** (s) **Directed Study** (cr arr). Prereq: perm.

Chem **302 Principles of Physical Chemistry** (3 cr). Emphasis on topics important to biological and agricultural science. Prereq: Chem 112 or 113, Math 170 and Phys 111, or perm.

Chem **303 Principles of Physical Chemistry Lab** (1 cr). Lab to accompany Chem 302. One 3-hr lab a wk. Prereq or coreq: Chem 302.

Chem **305-306 Physical Chemistry** (3 cr). Kinetic theory, thermodynamics, quantum mechanics, and spectroscopy. Prereq: Chem 112 or 113, Math 275; prereq or coreq: Phys 212 or 213.

Chem **307-308 Physical Chemistry Lab** (1 cr). Lab to accompany Chem 305-306. One 3-hr lab a wk. Prereq or coreq: Chem 305-306.

Chem **J318/J418 Environmental Chemistry** (3 cr). Chemistry of atmosphere, soil, and water; pollution monitoring and remediation; treatment of waste in the environment. Registration for Chem 418 requires additional project. Prereq: Chem 253, and Chem 275 or 277, or perm.

Chem **372 Organic Chemistry II** (3 cr). Continuation of Chem 277. Prereq: Chem 277.

Chem **374 Organic Chemistry Lab for Engineers** (1 cr). For students in engineering. Lab to accompany Chem 372; includes synthesis, structure determination, and mechanisms. One 3-hr lab a wk. Prereq: Chem 278; prereq or coreq: Chem 372.

Chem **376 Organic Chemistry II: Lab** (2 cr). Lab to accompany Chem 372, includes qualitative analysis and modern instrumental techniques. Two 3-hr labs a wk. Prereq: Chem 278; prereq or coreq: Chem 372.

Chem **400** (s) **Seminar** (cr arr). Prereq: perm.

Chem **404** (s) **Special Topics** (cr arr). Prereq: perm.

Chem **409 Proseminar** (1 cr). Current publications in chemistry and chemical engineering with reports on typical scientific papers. Prereq: Chem 372 and sr standing.

Chem **418 Environmental Chemistry** (3 cr). See Chem J318/J418.

Chem **J435/J535 Principles of Chemical Instrumentation** (4 cr). Practical theory and application of modern analog/digital electronics and small computers to chemical measurement and control systems. Registration for Chem 535 requires completion of an additional term paper or other assignment. One hr of lec and one 3-hr lab a wk. Prereq: Chem 253 or 454, Phys 212, or perm.

Chem **441 Chemical Literature** (1 cr). Survey of important chemistry reference works and periodicals; use of these sources. Prereq: perm.

Chem **454 Instrumental Analysis** (4 cr). For students in chemistry and allied fields. Techniques in operating new and specialized instruments for qualitative and quantitative analysis and analytical methods of an advanced nature. Three lec and one 4-hr lab a wk. Prereq: Chem 253, 305; prereq or coreq: Chem 306.

Chem **455 Survey of Analytical Chemistry** (3 cr). Fundamentals of modern analytical chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both Chem 454 and 455. Prereq: Chem 306 and perm.

Chem **J456/J556 Molecular Spectroscopy** (3 cr). Interpretation of IR, UV, NMR, and mass spectra. Registration for Chem 556 requires completion of additional assignments. Prereq: Chem 306 or perm.

Chem **463-J464/ID-J564 Inorganic Chemistry** (3 cr). WSU Chem 507. Principles, complex ions and coordination compounds, theory of acids and bases, bonding theory, non-aqueous solvents, familiar elements and their relationship to the periodic table. Additional projects/assignments reqd for grad cr. Prereq for 463: Chem 305 or perm; prereq or coreq for Chem J464/J564: Chem 463, or 466, or perm.

Chem **465 Inorganic Chemistry Laboratory** (1 cr). Lab to accompany Chem 464. One 3-hr lab a wk. Coreq: Chem 464.

Chem **466 Survey of Inorganic Chemistry** (3 cr). Fundamentals of modern inorganic chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both Chem 463 and 466. Prereq: Chem 306 and perm.

Chem **J467/J567 Inorganic Spectroscopy** (3 cr). Applications of spectroscopic methods to investigation of inorganic and organometallic compounds; topics include multinuclear and multidimensional NMR, IR and Raman, EPR, mass spectroscopy, Mossbauer spectroscopy, and x-ray crystallography. Additional projects/assignments reqd for grad cr. Prereq: Chem 306, 454.

Chem **J468/J568 Organometallic Chemistry** (3 cr). Structure, bonding, and reaction chemistry of organotransition metal compounds; applications to homogeneous catalysis. Additional projects/assignments reqd for grad cr. Prereq: Chem 305-306; prereq or coreq: Chem 463 or 466 or perm.

Chem **J472/J572 Rational Design of Pharmaceuticals** (3 cr). Synthetic chemistry necessary for design and preparation of medicinal agents, and mechanistic chemistry germane to action of pharmaceuticals. Graduate students are required to write an original research proposal on a topic related to drug discovery. Prereq or coreq: Chem 473, 476 or perm.

Chem **473 Intermediate Organic Chemistry** (3 cr). Theories and mechanisms of organic chemistry. Prereq: Chem 372; prereq or coreq: Chem 306.

Chem **476 Survey of Organic Chemistry** (3 cr). Fundamentals of modern organic chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both Chem 473 and 476. Prereq: Chem 306 and perm.

Chem **484 Biochemistry Laboratory** (2 cr). See MMBB 484.

Chem **486 Plant Biochemistry** (3 cr). See MMBB 486.

Chem **491** (s) **Research** (1-6 cr, max 6). Submission of a report of the research done for placement in the permanent dept files is required. Prereq: perm of dept.

Chem **495 Thermodynamics and Kinetics** (3 cr). Prereq: Chem 306 or equiv.

Chem **496 Survey of Physical Chemistry** (3 cr). Fundamentals of modern physical chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both Chem 495 and 496. Prereq: Chem 306 and perm.

Chem **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Chem **498** (s) **Internship** (cr arr). Prereq: perm.

Chem **499** (s) **Directed Study** (cr arr). Prereq: perm.

Chem **500 Master's Research and Thesis** (cr arr).

Chem **501** (s) **Seminar** (cr arr). Prereq: perm.

Chem **502** (s) **Directed Study** (cr arr). Prereq: perm.

Chem **504** (s) **Workshop** (cr arr). Prereq: perm.

Chem **506 Introduction to Teaching and Research Skills** (2 cr). Skills required of teaching assistants in laboratory, recitations, office hours, help sessions; skills required for research; use of library; introduction to faculty research. Graded P/F. Prereq: perm.

Chem **507** (s) **Topics in Physical Chemistry** (1-9 cr, max 9). Selected topics in modern physical chemistry such as computational quantum mechanics, statistical mechanics, nonequilibrium thermodynamics, group theory, molecular dynamics, theory of condensed phases, or other topics not covered in regularly scheduled courses. Prereq: Chem 495, 496, or perm.

Chem **509-510 Advanced Physical Chemistry** (3 cr). Application of quantum theory to chemical bonding, molecular spectroscopy, and molecular structure. Prereq: Chem 306, 495, 496, or perm.

Chem **513 Nuclear Chemistry** (3 cr). Intro to artificial and natural radioactivity, tracer methods, and atomic energy. Prereq: Chem 306 or Phys 315 or perm.

Chem **R516 Methods in Radiochemistry** (3 cr). Radiochemistry techniques and application of tracers to chemistry; fundamentals of radioactive decay; statistical relationships; interaction of radiation with matter; production of radioactive samples; chemistry of radioactive elements. Prereq: Chem 454, 455, or perm.

Chem **WS525 Selected Topics in Analytical Chemistry** (1-3 cr, max arr). WSU Chem 529. Prereq: perm.

Chem **535 Principles of Chemical Instrumentation** (4 cr). See Chem J435/J535.

Chem **WS537 Advanced Topics in Physical Chemistry** (1-3 cr, max arr). WSU Chem 537. Prereq: perm.

Chem **541-542 Biochemistry** (3 cr). See MMBB 541-542.

Chem **551 Electronic Spectrometry** (3 cr). A brief review of fundamental concepts, including electronic transitions, optical properties of materials, and laws of radiation absorption; detailed coverage of instrumentation used for ultraviolet and visible absorption spectroscopy, with regard to optical components, overall design strategy, and signal processing; analytical performance related to these aspects and presented from both theoretical and practical standpoints; in-depth coverage of luminescence spectroscopy, including phosphorimetry and fluorimetry; atomic spectroscopy (both flame and plasma-based versions), including principles of operation, instrumental requirements, and analytical application; survey of x-ray absorption and fluorescence spectroscopy. Prereq: Chem 454, 455 or perm.

Chem **552 Analytical Vibrational Spectrometry** (3 cr). Introduction to vibrational transitions, optical properties of materials, and laws of radiation absorption and emission (including why they are not always obeyed in practice); detailed discussion of instrumentation used for mid-infrared, near infrared, and Raman spectrometry; illustration of transmission spectrometry with examples including microscopy and spectral imaging, open-path monitoring, and spectroscopy of aqueous solutions and hyphenated techniques; introduction of time- and phase-resolved measurements; detailed coverage of specular reflection, reflection-absorption of thin films, diffuse reflection, attenuated total reflection spectrometry, and remote measurements through optical fibers; discussion of application of near infrared spectroscopy to agricultural commodity analysis and process monitoring. Prereq: Chem 454, 455 or perm.

Chem **553 Separation Theory and Gas Chromatography** (3 cr). Separation theory; modern gas chromatography, identification and quantification; analytical mass spectrometry. Prereq: Chem 306, 454, 455, or perm.

Chem **554 Liquid Chromatography** (3 cr). Modern liquid chromatography; ion chromatography; supercritical-fluid chromatography. Prereq: Chem 553 or perm.

Chem **555 Advanced Analytical Chemistry** (3 cr). Fundamental principles of analysis; sampling; measurement validation; statistical evaluation; optimization techniques; pattern recognition; information theory. Prereq: Chem 306, 454, 455, or perm.

Chem **556 Molecular Spectroscopy** (3 cr). See Chem J456/J556.

Chem **557** (s) **Topics in Analytical Chemistry** (1-9 cr, max 9). Atomic and molecular analytical spectroscopy; modern electrochemical methods; surface analysis techniques. Prereq: Chem 454, 455, or perm.

Chem **561 Advanced Inorganic Chemistry** (3 cr). Theoretical approach to the underlying principles of inorganic chemistry; integration of theory and descriptive chemistry. Prereq: Chem 306, 463, 466, or perm.

Chem **564 Inorganic Chemistry** (3 cr). See Chem 463-J464/J564.

Chem **ID565** (s) **Topics in Inorganic Chemistry** (1-9 cr, max 9). WSU Chem 508. Coordination compounds; halogens; less familiar elements; clathrate, interstitial, nonstoichiometric compounds; chemical bonding; inorganic reaction mechanisms. Prereq: Chem 463, 466, or perm.

Chem **567 Inorganic Spectroscopy** (3 cr). See Chem J467/J567.

Chem **568 Organometallic Chemistry** (3 cr). See Chem J468/J568.

Chem **569 Fluorine Chemistry** (3 cr). Brief history of fluorine beginning with its isolation in 1886 through current areas of interest in fluorochemicals; in-depth study of modern synthetic methods of fluorinated compounds and their potential applications today and in the future. Prereq: Chem 463, 466, or perm.

Chem **571** (s) **Topics in Organic Chemistry** (1-9 cr, max 9). Selected topics from the current literature. Prereq: Chem 473, 476, or perm.

Chem **572 Rational Design of Pharmaceuticals** (3 cr). See Chem J472/J572.

Chem **573 Synthetic Organic Chemistry** (3 cr). Use of organic reactions in synthesis. Prereq: Chem 473, 476, or perm.

Chem **575 Mechanisms of Organic Reactions** (3 cr). Nucleophilic substitution; reactions of carboxylic acids and esters; carbanions; electrophilic and nucleophilic aromatic substitutions; elimination and addition reactors. Prereq: Chem 473, 476, or perm.

Chem **581 Carbohydrates** (3 cr). Alt/yrs. Structure, function, and metabolism of carbohydrates. Prereq: perm.

Chem **582 Proteins and Enzymes** (3 cr). See MMBB 582.

Chem **583 Lipids and Membranes** (3 cr). See MMBB 583.

Chem **584 Nucleic Acids** (3 cr). Alt/yrs. Structure, function, and metabolism of nucleic acids. Prereq: perm.

Chem **589 Advanced Topics in Molecular Biology, Microbiology and Biochemistry** (1-9 cr, max 9). See MMBB 589.

Chem **590 Doctoral Research Proposal** (1 cr). Taken no later than one semester after completion of cumulative exams; required for advancement to Ph.D. candidacy. Includes review of relevant literature and original research proposal describing the student's intended research project.

Chem **600 Doctoral Research and Dissertation** (cr arr).

Civil Engineering

Howard S. Peavy, Chair, Dept. of Civil Engineering (104 Buchanan Engr. Lab. 83844-1022; phone 208/885-6782).

CE **115 Introduction to Civil Engineering** (2 cr). Graded P/F. Introduction to engineering design process and analysis techniques including problem solving skills, development of software use skills, graphical analysis, data analysis, economic decision making, documentation skills, and use of structured programming concepts in designing personal applications. Prereq: major in civil engineering.

CE **200** (s) **Seminar** (cr arr). Prereq: perm.

CE **203** (s) **Workshop** (cr arr). Prereq: perm.

CE **204** (s) **Special Topics** (cr arr). Prereq: perm.

CE **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

CE **ID&WS210 Engineering Statics** (3 cr). WSU C E 211. Principles of statics with engineering applications; addition and resolution of forces, vector algebra, moments and couples, resultants and static equilibrium, equivalent force systems, centroids, center of gravity, free body method of analysis, two and three dimensional equilibrium, trusses, frames, and friction. Prereq: Math 170.

CE **211 Engineering Measurements** (3-4 cr). For engineering and cartography students. Theory and practice; types and distribution of errors; manipulation of instruments; route and land surveying; construction survey; intro to photogrammetry. Two lec and one 3-hr lab a wk; additional 1-hr recitation a wk for 4 cr reqd unless waived by exam. Prereq: Math 143 and ME 101 or equiv.

CE **215 Civil Engineering Analysis and Design** (2 cr). Graded P/F. Application of modern basic science, mathematics, and fundamental engineering principles to solution of civil engineering design problems by analytic and numeric methods; use of structured programming concepts in designing applications Prereq: CE 115, Phys 211, ME 101, Math 170.

CE **218 Elementary Surveying** (2 cr). Primarily for nonengineering students. Theory of measurements and manipulation of surveying instruments; application of surveying methods to construction; topographic and land surveys. One lec and one 3-hr lab a wk. Prereq: Math 143.

CE **299** (s) **Directed Study** (cr arr). Prereq: perm.

CE **316 Advanced and Route Surveys** (3 cr). Alt/yrs. Advanced survey methods including state plan coordinate systems, practical astronomy, and route surveys; field layout to include meridian determination, circular curves, spirals, setting slope and grade stakes, bridge and culvert surveys. Two lec and one 3-hr lab a wk. Prereq: CE 211.

CE **317 Land Surveying** (2 cr). Alt/yrs. History and development; related laws; preparation and filing of property descriptions and plats; subdivision planning; methods for property surveys. Prereq: CE 211.

CE **319 Photogrammetry and Photo-Interpretation** (3 cr). Geometry of single and stereoscopic pairs of aerial photographs; stereo-plotters; photo-interpretation applied to problems of engineering importance. Two lec and one 3-hr lab a wk. Prereq: CE 211.

CE **ID&WS320 Engineering Fluid Mechanics** (3 cr) (C). WSU M E 303. Physical properties of fluids; fluid statics; continuity, energy, momentum relationships; laminar and turbulent flow; boundary layer effects; flow in pipes, open channels, and around objects. Prereq: CE 210, Math 275.

CE **321 Hydrology** (3 cr). See AgE 351.

CE **322 Hydraulics** (3 cr). Applied principles of fluid mechanics; closed conduit flow, hydraulic machinery, open channel flow; design of hydraulic systems. Prereq: CE 320.

CE **323 Hydraulics Laboratory** (1 cr). Laboratory exercises on closed conduit flow, hydraulic machinery, open channel flow and mixing process. Ten 1-hr lec, 7 unsupervised lab sessions with hours varying from 2 to 4 hrs each. Prereq or coreq: CE 322.

CE **331 Sanitary Engineering** (4 cr). Application of basic engineering science to treatment of domestic and industrial water supplies; treatment and disposal of domestic sewage and industrial wastes. Three lec and one 3-hr lab a wk. Prereq: CE 320 and 322 or perm.

CE **342 Theory of Structures** (3 cr). Stresses and strains in statically determinate and indeterminate beam, truss, and rigid frame structures; effects of moving loads; matrix displacement method. Two lec and one 3-hr lab a wk. Prereq: ME 340.

CE **357 Mechanical Properties of Construction Materials** (3 cr). Analysis of concrete mixtures; characteristics and measurements of stress-strain stiffness and strength properties of construction materials for improvement, selection, and design. Two lec, two hrs of lab, and 1 hr of recitation a wk. Prereq: Stat 301 and ME 340; coreq: Engl 317.

CE **360 Engineering Properties of Soils** (3 cr). Soil composition, descriptions, and classification systems; permeability and seepage; capilarity and suction; total, effective, and neutral stresses, compression and volume changes; shear strength; compaction. Two lec, 2 hrs of lab, and 1 hr of recitation a wk. Prereq: CE 320 and ME 340.

CE **372 Fundamentals of Transportation Engineering** (4 cr). Intro to planning, design, and operation of highway and traffic, public transportation, and airport systems. Three lec and one 3-hr lab a wk. Prereq: Stat 301; coreq: Engl 317.

CE **ID&WS386 Engineering Economy** (3 cr). WSU C E 463. Economic analysis and comparison of engineering alternatives. Prereq: jr standing.

CE **400** (s) **Seminar** (cr arr). Prereq: perm.

CE **402 Applied Numerical Methods for Engineers** (3 cr). Approximate and numerical methods for solution of systems of linear and nonlinear equations, initial value, boundary value, and partial differential equations with practical applications, analysis of error, improvement of accuracy, and numerical and matrix techniques for computation by digital computer. Prereq: Math 310, a high level programming language.

CE **403** (s) **Workshop** (cr arr). Prereq: perm.

CE **404** (s) **Special Topics** (cr arr). Prereq: perm.

CE **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

CE **407 Professional Management for Engineers** (3 cr). Consideration of analytical, quantitative, and human functions in management science; emphasis on socioeconomic synthesis.

CE **411 Engineering Fundamentals** (0 cr). Review of basic engineering and science material covered in Fundamentals of Engineering exam. Graded P/F. Prereq: sr standing or perm.

CE **J420/J520 Fluid Dynamics** (3 cr). See ME J420/J520.

CE **421 Engineering Hydrology** (3 cr). See AgE 451.

CE **ID&WS-J422/ID-J522 Hydraulic Design** (3 cr). WSU C E 450. Hydraulic design of open channel and closed conduit conveyance structures, control structures, protective structures and systems; project oriented problems. Extra design projects or different design projects for grad cr. One field trip. Prereq: CE 322 or equiv, CE 386, or perm.

CE **428 Open Channel Hydraulics** (3 cr). See AgE 458.

CE **J432/J533 Water Quality Management** (3 cr). Physical, chemical, and biological techniques for analysis of water quality management problems; development of design criteria for corrective systems. Additional projects/assignments reqd for grad cr. Two lec and one 3-hr lab a wk. Prereq: perm.

CE **WS435 Hazardous Waste Engineering** (3 cr). WSU C E 446.

CE **ID&WS-J436/ID&WS-J536 Wastewater Treatment System Design** (3 cr). WSU C E 544. Application of unit operations and processes to design of integrated wastewater treatment systems; critical analysis of existing designs. Additional projects/assignments reqd for grad cr. Prereq: perm.

CE **441 Reinforced Concrete Design** (3 cr). Strength design method in accordance with latest ACI code. Two lec and one 2-hr lab a wk. Prereq: CE 342.

CE **WS442 Prestressed Concrete Design** (3 cr). WSU C E 434/534.

CE **WS443 Design of Timber Structures** (3 cr). WSU C E 436.

CE **444 Steel Design** (3 cr). Structural steel design using latest AISC specifications. Two lec and one 2-hr lab a wk. Prereq: CE 342.

CE **ID&WS-J445/ID&WS-J545 Matrix Structural Analysis** (3 cr). WSU C E 531. Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, modification procedures. Special project demonstrating mature understanding of materials reqd for grad cr. Prereq: CE 342 or perm.

CE **460 Geotechnical Engineering Design** (3 cr). Applications of soil mechanics in design of earth retaining structures, shallow and deep foundations, embankments, slopes, and excavations. Prereq: CE 360.

CE **WS461 Foundations** (3 cr). WSU C E 435.

CE **473 Highway Design** (3 cr). Planning, geometrics, location, and design of urban and rural highway systems. Two lec and one 3-hr lab a wk. Prereq: CE 372, CE 360 or perm.

CE **ID474 Traffic Systems Design** (3 cr). WSU C E 474. Analysis and design of network traffic systems; system evaluation using computer optimization and simulation; development and testing of alternative system design. Two lec and one 3-hr lab a wk. Prereq: CE 372 or perm.

CE **ID&WS-J475/ID&WS-J575 Pavement Design and Evaluation** (3 cr). WSU C E 473. Pavement design processes; materials selection and characterization methods; design of flexible pavements; design of rigid concrete pavements; AASHTO design guide; performance evaluation of existing pavements; condition survey and ratings; distress evaluation; introduction to maintenance and rehabilitation techniques; computer applications. Additional 1-hr meeting and additional projects/assignments reqd for grad cr. Prereq: CE 357; Engl 317 or equiv or perm.

CE **482 Project Engineering** (3 cr). Modern project engineering techniques for planning, scheduling, and controlling typical engineering and construction projects; linear programming and other optimization techniques as applied to resource allocation; microcomputer applications are emphasized and appropriate software used throughout the course. Prereq: Stat 251 or 301 or equiv and senior standing or perm.

CE **ID484 Engineering Law and Contracts** (2 cr). WSU C E 462. Development of law, courts, and ethics; laws of contracts, agency, sales, property, and patents; specifications, preparation of contract documents. Prereq: sr standing.

CE **491 Civil Engineering Professional Seminar** (1 cr). Employment and technical topics; preparation and presentation of professional paper. Course to be taken in last semester before graduation. Graded P/F.

CE **499** (s) **Directed Study** (cr arr). Prereq: perm.

CE **500 Master's Research and Thesis** (cr arr).

CE **501** (s) **Seminar** (cr arr). Conferences and reports on current developments.

CE **502** (s) **Directed Study** (cr arr). Prereq: perm.

CE **503** (s) **Workshop** (cr arr). Prereq: perm.

CE **504** (s) **Special Topics** (cr arr). Prereq: perm.

CE **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

CE **ID&WS510 Advanced Mechanics of Materials** (3 cr). See ME 539.

CE **519 Fluid Transients** (3 cr). Same as ME 519. Alt/yrs. Development of concepts and modeling techniques for unsteady flow of liquid and gas in piping systems; extensive computer programming used to develop tools for analysis, design, and control of transients. Prereq: Math 310, CE 320.

CE **520 Fluid Dynamics** (3 cr). See ME J420/J520.

CE **521 Sedimentation Engineering** (3 cr). Intro to river morphology and channel responses; fluvial processes of erosion, entrainment, transportation, and deposition of sediment. Prereq: CE 428 or perm.

CE **ID522 Hydraulic Design** (3 cr). See CE J422/J522.

CE **ID523 Water Resources Systems** (3 cr). WSU C E 561. Concepts in water development; coordination of development of other natural resources; systems approach and optimization techniques. Prereq: perm.

CE **ID524 Water Resources Planning** (3 cr). WSU C E 562. Use of water resources; provision for domestic water supply, power, flood control, navigation, irrigation, and recreation; design and feasibility problems; guest lecturers. Prereq: perm.

CE **528 Stochastic Hydrology** (3 cr). Analyses and evaluation of hydrologic data and time series; application of stochastic models to data generation and record extension (daily and storm precipitation, monthly and annual streamflows); regression and autoregression analyses; extensive computer applications for data analysis and synthesis. Prereq: CE 321, introductory statistics course.

CE **529 Natural Channel Flow** (3 cr). See AgE 555.

CE **ID&WS531 Environmental Engineering Unit Operations** (3 cr). WSU C E 541. Analysis and design of physical and chemical operations of water and waste treatment; flow models, sedimentation, flocculation, filtration, and water conditioning. Prereq: perm.

CE **ID&WS532 Environmental Engineering Unit Processes** (3 cr). WSU C E 542. Analysis and design of chemical and biological processes of water and waste treatment, stream pollution analysis, gas transfer, biological oxidations, aerobic and anaerobic processes, and combustion processes. Prereq: perm.

CE **533 Water Quality Management Techniques** (3 cr). See CE J432/J533.

CE **ID&WS536 Wastewater Treatment System Design** (3 cr). See CE J436/J536.

CE **WS537 Aquatic Systems Restoration** (2-3 cr). WSU C E 585.

CE **540 Continuum Mechanics** (3 cr). See ME 540.

CE **ID&WS541 Reliability of Civil Engineering Systems** (3 cr). WSU C E 531. Fundamentals of reliability theory, treatment of uncertainty in loads and materials, system reliability formulations, and applications to structural and geotechnical engineering including current design codes. Prereq: perm.

CE **ID542 Advanced Design of Structures** (3 cr). WSU C E 537. Composite action, hybrid sections, plate girders, curved girders, fatigue design, splices and connections, loads, load combinations, load distribution, computer modeling and analysis. One 1-day field trip. Prereq: CE 444 or perm.

CE **ID&WS543 Dynamics of Structures** (3 cr). WSU C E 512. Alt/yrs. Behavior of structures under impact, impulse, and seismic loads. Prereq: CE 441, 444, Math 310.

CE **ID&WS545 Matrix Structural Analysis** (3 cr). See CE J445/J545.

CE **ID&WS546 Finite Element Analysis** (3 cr). Same as ME 549. WSU C E 532. Formulation of theory from basic consideration of mechanics; applications to structural engineering, solid mechanics, soil and rock mechanics; fluid flow. Prereq: ME 341 or CE 342.

CE **WS547 Advanced Reinforced Concrete Design** (3 cr). WSU C E 533.

CE **548 Elasticity** (3 cr). See ME 548.

CE **WS51** (a) **Industrial Waste Problems** (3 cr) (CE WS539A). WSU C E 545.

CE **WS52 Air Pollution Abatement and Administration** (2 cr) (CE WS539F). WSU C E 573.

CE **WS553 Engineering Aspects of Environmental Chemistry** (2-4 cr) (CE WS539G). WSU C E 583.

CE **556 Properties of Pavement Materials** (3 cr). Design of asphalt and portland cement concrete mixes; physical and mechanical properties; characterization methods; effects of aggregate and binder constituents; modification and upgrading techniques; laboratory and in-situ evaluation methods; applications of highway and airport materials. Three 1-hr lec a wk and variable number of lab hrs for demonstration. Prereq: CE 357 or equiv or perm.

CE **557 Mechanical Properties of Elastic and Nonelastic Materials** (3 cr). Procedures for determining stress, strain, and modulus of materials used in construction, and for evaluating their performance with changes of time and frequency, temperature, and moisture under various modes of loading.

CE **ID561 Advanced Soil Mechanics** (3 cr). WSU C E 527. Effective and total strength and deformation parameters for soils, lab and field methods of determination, applications in stability analysis and deformation predictions for rigid and flexible walls, anchors, buried structures, excavations, and slopes. Prereq: CE 360 or perm.

CE **ID562 Advanced Foundation Engineering** (3 cr). WSU C E 528. Consolidation theories, stress and strain distribution, bearing capacity and settlements of shallow and deep foundations, pile group behavior, theory of subgrade reaction, mat foundations, laterally loaded piles. Prereq: CE 360 or perm.

CE **563 Seepage and Earth Dams** (3 cr). See GeoE 535.

CE **ID565 Soil Dynamics** (3 cr). WSU C E 529. Theory of foundation response to dynamic loads, design and analysis of machine foundations, foundation isolation, behavior of soils subjected to dynamic loads, field and laboratory methods for evaluation of dynamic properties, liquefaction, wave equation, analysis of piles.

CE **566 Earthquake Engineering** (3 cr). Review of geological and seismological factors that influence design; seismic wave propagation; earthquake parameters; probabilistic hazard assessment; dynamic soil properties; response spectra; computer applications; earthquake resistant designs. Prereq: CE 360 or equiv, or perm.

CE **WS567 Soil and Site Improvement** (3 cr). WSU C E 425/525.

CE **ID&WS569 Advanced Topics in Geotechnical Engineering** (2-4 cr). WSU C E 511.

CE **ID&WS571 Traffic Flow Theory** (3 cr). WSU C E 501. Alt/yrs. Introduction to elements of traffic flow theory including principles of traffic stream characteristics, capacity, queueing theory, and shock waves; application of traffic flow theory to freeway and arterial traffic flow problems. Prereq: perm.

CE **ID&WS572 Applied Traffic Operations** (3 cr). WSU C E 501. Alt/yrs. Application of traffic simulation models to the design and operations of traffic facilities, including intersection, arterials, and freeways; assessment of traffic signal timing strategies and freeway management and control strategies. Prereq: perm.

CE **ID&WS573 Transportation Planning** (3 cr). WSU C E 501. Alt/yrs. Concepts and methods of transportation planning, including network modeling, travel demand forecasting, and systems evaluation of multi-modal transportation systems. Prereq: perm.

CE **ID&WS574 Public Transportation** (3 cr). WSU C E 501. Alt/yrs. Concepts and principles of planning and operations of public transportation systems, including bus transit, rail transit, and paratransit modes. Prereq: perm.

CE **ID&WS575 Pavement Design and Evaluation** (3 cr). See CE J475/J575.

CE **577 Pavement Management and Rehabilitation** (3 cr). Overview of Pavement Management Systems; PMS project and network levels; serviceability concepts and performance models; PMS data needs; rehabilitation and maintenance strategies; life cycle cost analysis; implementation of PMS in design, construction, maintenance, and research; examples of working PMS; maintenance and rehabilitation of asphalt and concrete pavements. Prereq: CE J475/J575 or equiv or perm.

CE **589 Water Resources Seminar** (1 cr). See Intr 589.

CE **597** (s) **Practicum** (cr arr). Prereq: perm.

CE **598** (s) **Internship** (cr arr). Prereq: perm.

CE **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

CE **600 Doctoral Research and Dissertation** (cr arr).

Communication

Roy Alden Atwood, Director, School of Communication (Communication Bldg. 83844-1072; phone 208/885-6458).

GENERAL COMMUNICATION

Note: See School of Communication requirements in part 5 for eligibility requirements for registration in upper-division courses.

ComG **101 Fundamentals of Public Speaking** (2 cr) (ComG 131). Satisfies core requirement J-3-a. Skills and techniques of effective speaking.

ComG **111 Introduction to Communication Studies** (4 cr) (ComG 101). Introduction to historical and intellectual development of the primary subfields within communication; perspectives on interrelationships among the subfields of interpersonal, small group, visual, organizational, and mass communication; exploration of institutional character and cultural implications of each subfield; build competence as critical consumers of communication content.

ComG **132 Oral Interpretation** (2 cr). Use of voice and body to communicate the intellectual and emotional meaning of literature.

ComG **134 Nonverbal Communication** (2 cr). Study of body language; proxemics, kinesics, and other nonverbal codes.

ComG **200** (s) **Seminar** (cr arr). Prereq: perm.

ComG **203** (s) **Workshop** (cr arr). Prereq: perm.

ComG **204** (s) **Special Topics** (cr arr). Prereq: perm.

ComG **233 Interpersonal Communication** (3 cr). Communication concepts and skills applied to relationship management; communication process, listening, self-disclosure, perception, conflict.

ComG **235 Organizational Communication** (3 cr). Philosophy, methods, and designs for studying communication system of a complex organization.

ComG **284 Experiences in Visual Thinking** (3 cr). Expansion and strengthening of creative potential through right brain thinking experiences: seeing, drawing, and imagining; solution of creative problems by applying learned principles and visual thinking strategies.

ComG **288 Introduction to Film Art** (3 cr). Intro to aesthetics of film; considers film as a cultural artifact by surveying fundamental aspects of film form, systems, style, and analysis; no previous knowledge of film or photography reqd. Two lec, one discussion period, and one film showing period a wk.

ComG **331 Conflict Management** (3 cr). Principles of effective conflict management in various settings; emphasis on styles of conflict, power, goals, strategies, and intervention techniques.

ComG **332 Communication and the Small Group** (3 cr). Problem-solving methods; performing as a group leader or as a group member; small group behavior.

ComG **333 Interviewing** (3 cr). Prin of information gathering and problem solving in interviews.

ComG **347 Persuasion** (3 cr). Theory and practice of effective persuasive techniques. Prereq: ComG 101.

ComG **382 History of Photography** (3 cr). History and development of photography in its various forms; photography as a creative art form and a reflection of society; selected slide lecs. Prereq: Comm 281 or perm.

ComG **384 History of American Film** (3 cr). History and development of U.S. film industry; film as an art form; film as a reflection of society; selected genres and directors. Three lec and 3 hrs of lab a wk. Prereq: ComG 288, or Intr 126, or perm.

ComG **386 American Documentary Film/Television** (3 cr). Open to all students. Development of nonfiction film, TV, photography; documentary style and form; documentary's power to communicate; noted practitioners; issues raised by documentary. Three lec and one lab a wk.

ComG **400** (s) **Seminar** (cr arr). Prereq: perm.

ComG **403** (s) **Workshop** (cr arr). Prereq: perm.

ComG **404** (s) **Special Topics** (cr arr). Prereq: perm.

ComG **430 Perspectives in Film** (3 cr). See Engl 430.

ComG **432 Gender and Communication** (3 cr). Alt/yrs. The nature of interpersonal communication and gender; identification, interpretation, and analyses of theories that offer explanations of gender and culture in interpersonal interactions. Prereq: ComG 233 or perm.

ComG **433 Organizational Communication Theory and Research** (3 cr). Overview of current theory and research in organizational communication; interpretive and critical perspectives on organizational culture, organizational change, organization and environment relationships, management systems, and power relationships.

ComG **435 Strategies of Organizational Communication** (3 cr). Theory and methods of improving communication in organizations, consulting, training, organizational change. Prereq: ComG 235.

ComG **ID440 Media and the Canadian Experience** (3 cr). WSU Com 403. History, structure, and function of Canada's mass media and cultural industries; comparison of Canadian and American media policies and practices. Two lec and one lab a wk; some films, videos, and slides in evening.

ComG **499** (s) **Directed Study** (cr arr). Prereq: perm.

COMMUNICATION

Note: See School of Communication requirements in part 5 for eligibility requirements for registration in upper-division courses.

Comm **121 Media Writing** (3 cr). Basic principles of writing news. Two 2-hr lec-labs a wk. Prereq: Engl 102 and ability to type.

Comm **200** (s) **Seminar** (cr arr). Prereq: perm.

Comm **203** (s) **Workshop** (cr arr). May be graded P/F. Prereq: perm.

Comm **204** (s) **Special Topics** (cr arr). Prereq: perm.

Comm **222 Reporting** (3 cr). Types and sources of news; gathering and writing news. Two lec and one lab a wk. Prereq: Comm 121.

Comm **252 Principles of Public Relations** (3 cr). Understanding public relations programs, functions and techniques; projects related to student's interest. Prereq: Comm 121.

Comm **265 Advertising and Society** (3 cr). Survey of role of advertising in American society including effects on consumers; regulation, media, and advertising as a creative process.

Comm **270 Broadcast Commercial Writing/Production** (3 cr). Basic principles of writing and production of commercials in broadcast, with emphasis on radio production/announcing and writing techniques for all electronic media. Prereq: Comm 121.

Comm **275 Introduction to Video Production** (3 cr). Introduction to art and craft of video production; emphasis on aesthetics of visual image and process of video production; work with 1/2" video equipment for field assignments; learn how TV programs are produced in the studio by working at the KUID-TV studio during labs. Two lec and 3 hrs of lab a wk.

Comm **276 Intermediate Video Production** (3 cr). Continuation of Comm 275; involves students in more professional-level work with more emphasis on details of writing, lighting, computerized editing, and packaging the video product; work with 3/4" SP field packages; producing news packages, magazine features, and music videos. Two lec and 3 hrs of lab a wk; field trips. Prereq: Comm 275.

Comm **281 Understanding Photography** (3 cr). Basic skills of camera operation; emphasis on image design and creative techniques; lec topics include exposure, lenses, composition, filters, and films. 35mm adjustable camera required, plus additional costs for photographic materials. Two lec and one 3-hr recitation a wk.

Comm **299** (s) **Directed Study** (cr arr). Prereq: perm.

Comm **323 Public Affairs Reporting** (3 cr). Problems and practice in reporting the courts, government, politics, other public issues. Prereq: Comm 121, 222, or perm.

Comm **354 Publications Editing** (3 cr). Design and production of magazines, periodicals, brochures.

Comm **360 Broadcast Media Advertising** (3 cr). Advertising creative process in radio and television, including copywriting, and production processes and techniques. Prereq: Comm 265.

Comm **362 Print Media Advertising** (3 cr). Advertising creative process in print media (newspapers, magazines, direct mail, outdoor, etc.), including copywriting, typesetting, layout, design, and production processes and techniques. Prereq: Comm 265.

Comm **364 Advertising Media Planning** (3 cr) (C). Advertising media planning for all media, both broadcast and print; includes interpretation of ratings and market data, media strategies and concepts, and specific buying process in each advertising medium. Prereq: Comm 265.

Comm **374 Broadcast Newswriting and Reporting** (3 cr). Techniques of gathering, writing, and producing news for radio and television. One lec and one lab a wk.

Comm **375 Video Program Production** (2 cr, max 4). Development, planning, budgeting, and execution of television productions; development of professional techniques. Field trips. Prereq: Comm 374.

Comm **381 Photographic Materials and Techniques** (3 cr). Basic to intermediate level black and white lab course; film developing, printing; exploration of various films, developers, toners, and photo techniques; group critiques. Two lec and two 3-hr labs a wk. Prereq: Comm 281 or perm.

Comm **385 Color Photography** (3 cr). Entry-level color lab course; discussion and practice in color theory; exploration of all conventional color processes, slides, negatives, and prints. Two lec and two 3-hr labs a wk. Prereq: Comm 281 or perm.

Comm **387 Digital Imaging** (3 cr). Computer imaging with emphasis on visual problem solving and design; development of professional techniques with industry standard software. Four hrs of lec/lab and discussion a wk.

Comm **400** (s) **Seminar** (cr arr). Prereq: perm.

Comm **401** (s) **Practicum in Communication** (1 cr, max 2). Graded P/F. Prereq: perm.

Comm **403** (s) **Workshop** (cr arr). May be graded P/F. Prereq: perm.

Comm **404** (s) **Special Topics** (cr arr). Prereq: perm.

Comm **422 Science Communication** (3 cr). Alt/yrs. Methods of reporting on science and technology; the rhetoric of communication about science in the mass media. Prereq: Comm 222 and 7 credits in lab science, or perm.

Comm **424 News Editing** (3 cr). News selection, evaluation, editing, and display. Two lec and one lab a wk. Prereq: Comm 121, 222, or perm.

Comm **425 Feature Article Writing** (3 cr). Writing human interest stories, editorials, reviews, and columns. Prereq: Comm 121 or perm.

Comm **431 Professional Presentation Techniques** (3 cr). Multimedia presentation of proposals, management plans, feasibility reports, instructions, and scientific papers; designed to assist students in professional fields in making presentations to professional and lay audiences.

Comm **441 Ethics in Mass Communication** (3 cr). Examination of ethical responsibilities and obligations of people working in the mass media.

Comm **443 Media Management** (3 cr). Management principles as they apply to electronic and print media; emphasis on personnel management, budgeting, programming, sales, marketing and promotion, legal constraints, new technologies, and strategic planning.

Comm **444 Communication and Public Opinion** (3 cr). Role of communication in the formation of public opinion with special emphasis on mass media.

Comm **445 History of Mass Communication** (3 cr). Growth and development of mass media in the U.S.

Comm **448 Law of Mass Communication** (3 cr). Freedom of the press, libel, right to know, privacy, contempt in print and broadcast media.

Comm **449 Theory in Communication** (3 cr). Interdisciplinary approach to understanding the process of communication.

Comm **450 Quantitative Research Methods** (3 cr). Design of experiments and field studies and planning of polls relevant to communication, with special attention to causality, reliability, and validity, and emphasis on interpretation of results.

Comm **451 Qualitative Research Methods** (3 cr). Aims and methods of qualitative research; emphasis on philosophical assumptions, research design, data collection, reliability/validity issues, and data analysis within the context of interpretive, critical and naturalistic approaches to communication research and practice.

Comm **452 Public Relations Management** (3 cr). Management case studies of public relations and advertising programs; practice in developing and executing campaigns with emphasis on presentation skills and equipment. Prereq: Comm 252.

Comm **458 Public Relations Case Studies and Issues Management** (3 cr). Examination of actual and created public relations case studies; reasons for their success or failure examined and evaluated. Prereq: Comm 452.

Comm **466 Advertising Campaign Strategy** (3 cr). Advanced advertising strategies in creative approaches and media usage; current ad campaigns and development of a complete advertising campaign for a client. Prereq: Comm 360, 362, 364, 431, and Art 121 or 225.

Comm **468 The Advertising Agency** (3 cr). Functioning of an advertising agency, including management, accounting, creative and media buying systems, government regulation, account management, and creative strategies in the marketplace. Field trips. Prereq: Comm 466 or perm.

Comm **475 Advanced Video Production** (3 cr). Basic production theory, lighting, composition, sound; producing and directing; practice in a variety of television production forms. Field trips. Prereq: Comm 275.

Comm **476 Advanced Broadcast News Writing/Production** (3 cr). Advanced techniques in writing and production of news for radio and television. One lec and one lab a wk. Prereq: Comm 374.

Comm **481 Advanced Photography** (3 cr). Advanced-level lab course; covers basic lighting, portraits, studio, journalism; group critiques. Two lec and two 3-hr labs a wk. Prereq: Comm 381 and 385.

Comm **489 Critical Issues in Visual Communication** (3 cr). Examination of major theoretical approaches to visual media (photography, film, and television); impact of visual images on society; communicative and aesthetic functions of visual images; ethical concerns and visual media.

Comm **490 International Communication** (3 cr). Analysis of channels and media for international communication; interpersonal interaction and cross-cultural mass media.

Comm **498** (s) **Internship** (0-3 cr, max 3). Supervised experience in professional communication. Graded P/F. Prereq: perm of director, School of Communication.

Comm **499** (s) **Directed Study** (cr arr). Prereq: perm.

Computer Engineering

John W. Dickinson, Program Director (B40 Janssen Engr. Bldg. 83844-1010; phone 208/885-6589).

CoE **241 Computer Organization** (3 cr). See CS 241.

CoE **243 Digital Logic** (3 cr) (CoE 340). See EE 340.

CoE **244 Logic Circuit Lab** (1 cr) (CoE 344). See EE 344.

CoE **341 Digital Systems Engineering** (3 cr) (CoE 440). See EE 440.

CoE **351 Computer Architecture** (3 cr). See CS 351.

CoE **361 Microcontrollers** (4 cr). See EE 443.

CoE **J413/513 Concurrent Systems** (3 cr). See CS J413/J513.

CoE **J420/J520 Data Communication Systems** (3 cr). See CS J420/J520.

CoE **421 Data Communication Lab** (1 cr). See CS 421.

CoE **445 Introduction to VLSI Design** (3 cr). See EE 445.

CoE **480-481 Computer Systems Design Projects** (3 cr). Application of formal software and hardware design techniques, hardware/software interface considerations, project management, economics, reliability, and patents; projects require a combination of hardware and software system design, working model, and oral and written report. Two lec a wk; significant lab work reqd. Prereq for CoE 480: EE 316, 317; CoE 243, 244; CS 213, 241, 310; or perm. Prereq for CoE 481: EE 350, 441, CoE 480, and CS 341, or perm.

CoE **500 Master's Research and Thesis** (cr arr). Prereq: perm.

CoE **513 Concurrent Systems** (3 cr). See CS J413/J513.

CoE **520 Data Communication Systems** (3 cr). See CS J420/J520.

CoE **548 Supercomputing** (3 cr). See EE 548.

Computer Science

John W. Dickinson, Chair, Dept. of Computer Science (B40 Janssen Engr. Bldg. 83844-1010; phone 208/885-6589).

CS **101 Introduction to Computer Science** (3 cr). Satisfies core requirement J-3-c. Survey of computer science and topics of importance to computer scientists; includes topics such as the nature of problems, unsolvability, hardware, human factors, security, social, ethical, and legal issues; exposure to practical aspects of computer networks. Prereq: two years of high school algebra.

CS **105 FORTRAN Programming for Engineers** (2 cr) (C). Basics of computer programming in FORTRAN, emphasizing scientific applications; one- and two-dimensional arrays, functions, subroutines. Coreq: Math 170.

CS **112 Introduction to Problem Solving and Programming** (3 cr). Satisfies core requirement J-3-c. Intro to fundamental problem solving techniques using the computer; use of a programming language, structured programming concepts; use of fundamental data types, including arrays and structures; basic concepts of computer organization, editing, and program execution; programming lab in which the student solves problems using C++. Prereq: high school algebra.

CS **113 Program Design and Algorithms** (3 cr). Further problem-solving and design methods used in computer science; problem definition and analysis; preliminary design methods, module analysis and refinement methods, cohesion, coupling, top down design; internal and external program documentation; intro to algorithm analysis, cost and complexity concepts; discussion and comparison of several well-known algorithms for searching, sorting, text, and numeric processing. Lab work reqd. Prereq: CS 112 or equiv.

CS **127** (s) **Programming Language** (1-3 cr, max arr). Introduction to computer programming in a selected language. Prereq: perm.

CS **200** **Sophomore Seminar** (0 cr). Curriculum options, elective courses, preparation for grad study, and current technical topics. Field trip may be reqd. Graded P/F.

CS **204** (s) **Special Topics** (cr arr). Prereq: perm.

CS **213** **Data Structures** (3 cr). Intro to abstract data types, linear lists, linked lists, stacks, queues, graphs, and trees; methods for implementing, and algorithms for manipulating these types; dynamic memory methods; additional searching and sorting algorithms that result from using these data types; intro to files, including sequential, random access, and indexed processing; application of these concepts in the lab to provide further experience in the program design process. Prereq: CS 113 and Math 176.

CS **214** **Background Study in Data Structures** (1 cr). Not applicable toward any UI undergraduate degree; valid only for removal of CS 213 deficiency for graduate students who do not have B.S.C.S. See CS 213 for course description. Graded P/F based on comprehensive examination at completion of course.

CS **241** **Computer Organization** (3 cr). Same as CoE 241. Computer structure, machine language, addressing and programming techniques; use and operation of assemblers, linkage editors, loaders, digital logic, microarchitectures, instruction formats, addressing and memory. Prereq: CS 113 and Math 176.

CS **299** (s) **Directed Study** (cr arr). Prereq: perm.

CS **307** **History of Calculating and Computing** (3 cr). Open to all students. Exploration of numerical problems that created demands for better calculating devices, from the abacus to the supercomputer. Prereq: CS 101 or 112 and upper-division standing.

CS **310** **Computing Languages** (3 cr). Major features of good programming languages, with primary emphasis on language features and their role in writing good software; programming language design alternatives; various types of languages, including procedure, data-flow, functional, and object-oriented languages. Prereq: CS 213.

CS **324** **Computer Graphics** (3 cr). Use of the computer to define, store, manipulate, and display 2-D and 3-D objects; 2-D curvefitting and 3-D surface development. Prereq: CS 105, or CS 112 and Math 160 or 170 and trig or perm.

CS **341** **Computer Operating Systems** (4 cr). Analysis and design of methods used by operating systems to perform typical system services; design and implementation of file and directory systems; I/O methods, including programmed, interrupt-driven, and DMA; CPU scheduling; memory management techniques and implementations; concurrent programming; deadlocks; protection mechanisms; distributed systems; lab component focuses on implementation of several designs and algorithms discussed in lec. Three lec and one lab a wk. Prereq: CS 213 and 241.

CS **351** **Computer Architecture** (3 cr). Same as CoE 351. Evolution and classification of computer structures; ALU, CPU, memory, I/O, and microprogram control; conventional, stack, array, pipeline, and multiple processor architectures; fault-tolerant, data-base, and special purpose architectures; VLSI influence on architecture. Prereq: CS 241, CoE 243.

CS **360** **Files and Databases** (3 cr). Theory of basic file structure and storage to include direct and indexed files, direct access hash algorithms, B-tree indexing; B+-trees, multikey processing update anomalies, normalization, relational, hierarchical, and network structural DBMS's. Prereq: CS 213 or perm.

CS **H370** (s) **Seminar** (2 cr). Computer science issues. Prereq: perm of director of University Honors Program.

CS **371** **Expert Systems** (3 cr). Theory and practice of knowledge engineering; knowledge acquisition, representation, coding, testing; individual project reqd.

CS **381** **Software Engineering** (3 cr). Current topics in development of software systems; software life cycle model, requirements definition, design, verification and validation, and project management techniques. Prereq: perm.

CS **386** **Derivational Programming** (3 cr). Introduction of a practical approach based on methodically developing programs from their specifications; focus on developing reliable programs with attention to real issues. Prereq: CS 213.

CS **398** (s) **Computer Science Cooperative Internship** (1-3 cr, max 3). Supervised internship in professional computer science settings, integrating academic study with work experience; requires formal plan of activities before co-op assignment and final written report evaluated by on-campus faculty members. Graded P/F. Prereq: perm.

CS **400** **Senior Seminar** (0 cr). Technical topics, employment practices, interviewing, and current research topics. Graded P/F. One lec a wk. Prereq: sr standing in CS.

CS **401** **Contemporary Issues in Computer Science** (1 cr). Ethical, legal, and intellectual property issues; current research topics; and other issues of importance to the professional computer scientist. Graded P/F. Prereq: sr standing in CS.

CS **404** (s) **Special Topics** (cr arr). Prereq: perm.

CS **J413/J513** **Concurrent Systems** (3 cr). Same as CoE J413/J513. Specification, design, verification, and implementation of programs for parallel computer systems; systems considered range from LANs to massively parallel processor networks; programming models for explicit and implicit parallelism; emphasis on formal mathematical methods. Prereq: CS 341; coreq: CS 351 or perm.

CS **J420/J520** **Data Communication Systems** (3 cr). Same as CoE J420/J520. Concept and terminology of data communications, equipment, protocols (including ISO/OSI and TCP/IP), architectures; transmission alternatives, regulatory issues and network management. Additional projects/assignments reqd for grad cr. See CS 421 for optional lab course.

CS **421** **Data Communication Lab** (1 cr). Same as CoE 421. Hands-on experience with data communication systems using workstations and protocol analyzers; analysis of protocols, network diagnostics, and network system management. Graded P/F. Coreq: CS 420 or equiv.

CS **J423/J523** **Network Security** (3 cr). Practical topics in network security; policy and mechanism, malicious code; intrusion detection, prevention, response; cryptographic techniques for privacy and integrity; emphasis on tradeoffs between risk of misuse, cost of prevention, and societal issues; concepts implemented in programming assignments. Additional projects/assignments reqd for grad cr. Prereq: CS 341, knowledge of C or C++.

CS **430** **System Modeling and Simulation I** (3 cr). Intro to a discrete simulation language, queueing models, random number generation, design and analysis of systems. Prereq: CS 105 or 112 and Stat 251 or 301 and Math 160 or 170.

CS **J435/J535** **Foundations of Modern Programming Methods** (3 cr). The seminal papers in computer science that form the foundation of today's programming methodology; detail analysis of papers on theory of programming, design techniques, coding considerations, and new methods like visual programming and object-oriented design; major influences on how and why we build programs today. Additional projects/assignments reqd for grad cr. Prereq: junior standing, CS 213, CS 241, knowledge of at least two other programming languages.

CS **J442/J542** **Computer Security Concepts** (3 cr). Cryptographic systems, coding and decoding of messages; network, database, and operating system security issues, capability and access-control mechanisms; current trends and research in mandatory and discretionary security policies. Additional projects/assignments reqd for grad cr. Prereq: CS 341, Stat 301.

CS **445** **Systems Program Design** (3 cr). Algorithms used by the following system software: assemblers, macro-processors, interpreters, and compilers; compiler design options and code optimization; all concepts implemented in major programming assignments. Prereq: CS 241, 310.

CS **J461/J561** **Data Base Management Systems** (3 cr). Theory of relational and distributed data base systems, query optimization techniques, and current issues in DBMS development. Additional projects/assignments reqd for grad cr. Prereq: CS 360.

CS **J470/J570** **Artificial Intelligence** (3 cr). Concepts and techniques involved in artificial intelligence, Lisp, goal-directed searching, history trees, inductive and deductive reasoning, natural language processing, and learning. Extra term paper reqd for cr in 570. Prereq: CS 213 or perm.

CS **J472/J572** **Evolutionary Computation** (3 cr). Solving computation problems by "growing" solutions; simulates natural evolution using analogues of mutation, crossover, and other generic transformations on representations of potential solutions; introduction of the two standard EC techniques (genetic algorithms and genetic programming), mathematical explanation of why they work, and survey of some applications; focus on solving real-world problems using projects. Graduate-level research and possible paper or presentation reqd for grad cr. Prereq: CS 213.

CS **480** **Design—Individual Project** (3 cr). Formal development techniques applied to definition, design, coding, testing, and documentation of a computer programming project; each student completes an individual project. Two lec a wk; significant lab work reqd. Prereq: Engl 317 and sr standing in CS.

CS **481** **Design—Group Project** (3 cr). Application of formal design techniques to development of a large computer science project performed by students working in teams. Significant lab work reqd. Prereq: CS 480.

CS **J482/J582** **Software Project Management** (3 cr). Techniques for planning, organizing, scheduling, and controlling complex software system development and support projects. Additional projects/assignments reqd for grad cr. Prereq: CS 381 or 480 or perm.

CS **J484/J584** **Software Quality Assurance** (3 cr). Actions necessary to provide confidence that a software product conforms to established technical requirements; strategies for implementation and management of SQA, product reviews, test plans and procedures, audits, configuration management, and reliability assessment; concepts of software quality. Additional projects/assignments reqd for grad cr. Prereq: CS 381.

CS **J485/J585** **Software Process Management** (3 cr). Systematic software development from management perspective that centers on constituent tasks and their interrelationships; evaluation of software development process maturity and means to improve process maturity. Additional projects/assignments reqd for grad cr. Prereq: CS 381.

CS **J486/J586** **Software Specification** (3 cr). Formal specification and analysis of software using a formal specification language, and case studies of designs expressed in a formal specification language. Additional projects/assignments reqd for grad cr. Prereq: perm.

CS **490** **Theory of Computation** (3 cr). See Math 485.

CS **495** **Analysis of Algorithms** (3 cr). See Math 475.

CS **499** (s) **Directed Study** (cr arr). Prereq: perm.

CS **500** **Master's Research and Thesis** (cr arr). Prereq: perm.

CS **502** (s) **Directed Study** (cr arr). Prereq: perm.

CS **504** (s) **Special Topics** (cr arr). Prereq: perm.

CS **507** **Fundamentals of Research** (3 cr). See For 510.

CS **510** **Theory of Programming Languages** (3 cr). Advanced topics in programming language theory including formal syntax, formal semantics, denotational semantics, and type theory; principles of programming language design are stressed; not a comparative language class. Prereq: CS 310 or equiv; coreq: CS 490 or equiv.

CS **513 Concurrent Systems** (3 cr). See CS J413/J513.

CS **520 Data Communication Systems** (3 cr). See CS J420/J520.

CS **521 Computer Network Design** (3 cr). Design of optimal and near-optimal network topologies; capacity and flow assignment; performance analysis of networks; routing, flow control, and congestion algorithms. Prereq: CS J420/J520.

CS **523 Network Security** (3 cr). See CS J423/J523.

CS **535 Foundations of Modern Programming Methods** (3 cr). See CS J435/J535.

CS **541 Operating Systems** (3 cr). Principles of contemporary operating systems for network and distributed computer systems; sequential processes, scheduling, process synchronization, device management, file systems, memory management, and protection and security. Prereq: CS 341 or perm.

CS **542 Computer Security Concepts** (3 cr). See CS J442/J542.

CS **551 Advanced Computer Architecture** (3 cr). Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Prereq: CS 351 or equiv and Stat 301 or equiv.

CS **561 Data Base Management Systems** (3 cr). See CS J461/J561.

CS **570 Artificial Intelligence** (3 cr). See CS J470/J570.

CS **572 Evolutionary Computation** (3 cr). See CS J472/J572.

CS **580 Graduate Project** (1-6 cr, max 6). Application of formal design and documentation techniques to the development of computer programming project; project selected in consultation with student's major professor. Prereq: CS 381, 480 or perm.

CS **581 Software Engineering Analysis** (3 cr). Intro to research in software engineering; strong emphasis on application of quantitative techniques in the software life cycle; students will develop a command of current software engineering literature; exploration of techniques of mathematical modeling and solutions to software engineering problems.

CS **582 Software Project Management** (3 cr). See CS J482/J582.

CS **583 Software Engineering Measurement** (3 cr). Measurement methodology is the foundation of the emerging discipline of software engineering; software products are constructed by people engaged in a software development process in a development environment; focus on learning to measure the attributes of these four measurement domains; examples of software measurement and the applications of these measurements; using these techniques as the basis for the design of software engineering experiments; application of the scientific method in evaluation of programming methods and models; extension of the measurement concepts into the area of statistical modeling. Prereq: CS 581.

CS **584 Software Quality Assurance** (3 cr). See CS J484/J584.

CS **585 Software Process Management** (3 cr). See CS J485/J585.

CS **586 Software Specification** (3 cr). See CS J486/J586.

CS **590 Theory of Computation** (3 cr). Various models of computation, such as Turing machines, post machines, recursive functions, and register machines; relative strengths and weaknesses of these models, with particular attention to uncomputability results; computational complexity as a natural outcome of restrictions to these models. Prereq: CS 490.

CS **596 Computational Complexity Theory** (3 cr). Development of a theory of complexity to categorize which problems are harder than others, in what sense, and why; an approach that is abstract and mathematical, not algorithmic; topics include models of computation, complexity classes, reductions, and relativizations. Prereq: CS 490 or Math 485.

CS **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. (There is a limit on the number of credits in 599 that can be included on a study plan.) Prereq: perm.

CS **600 Doctoral Research and Dissertation** (cr arr).

Counseling and School Psychology

Jerry L. Tuchscherer, Director, Div. of Adult, Counselor, and Technology Education (210 Educ. Bldg. 83843-3083; phone 208/885-6556).

Coun **200** (s) **Seminar** (cr arr). Prereq: perm.

Coun **203** (s) **Workshop** (cr arr). Prereq: perm.

Coun **204** (s) **Special Topics** (cr arr). Prereq: perm.

Coun **299** (s) **Directed Study** (cr arr). Prereq: perm.

Coun **400** (s) **Seminar** (cr arr). Prereq: perm.

Coun **403** (s) **Workshop** (cr arr). Prereq: perm.

Coun **404** (s) **Special Topics** (cr arr). Prereq: perm.

Coun **J405/J505** (s) **Professional Development** (cr arr). Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

Coun **J407/J507 Orientation to Counseling** (2 cr) (C, 507 only). Exploratory course for students considering entering the counseling profession. Focus on counselor's role and function, the counselor as a person, ethical considerations, and other contemporary issues; involves small group work and role playing; assessment of knowledge and skills acquired. Successful completion of course is one of the criteria for final admission in the master's degree program in counseling and human services. Additional projects/assignments reqd for grad cr. Prereq: perm.

Coun **464 Vocational Guidance** (3 cr). See VoEd 464.

Coun **499** (s) **Directed Study** (cr arr). Prereq: perm.

Coun **500 Master's Research and Thesis** (cr arr).

Coun **501** (s) **Seminar** (cr arr). Prereq: perm.

Coun **502** (s) **Directed Study** (cr arr). Prereq: perm.

Coun **503** (s) **Workshop** (cr arr). Prereq: perm.

Coun **504** (s) **Special Topics** (cr arr). Prereq: perm.

Coun **505** (s) **Professional Development** (cr arr). See Coun J405/J505.

Coun **507 Orientation to Counseling** (2 cr) (C). See Coun J407/J507.

Coun **510 Individual Appraisal I** (3 cr). Analysis of statistical, psychometric, sociometric, and clinical principles essential to successful application of informal and standardized assessment in counseling and human services; current issues, such as cultural, gender, and other individual differences. Prereq: perm.

Coun **511 Individual Appraisal II** (3 cr). Application of informal and standardized assessment in various professional settings in counseling and human services; case studies on active clients conducted in accordance with prescribed procedures. Prereq: Coun 510 and perm.

Coun **512 Techniques of Counseling I** (3 cr). Review of pertinent counseling theories, stages of the developmental helping process, interpersonal skill building, establishing personal approach. Prereq: perm.

Coun **513 Techniques of Counseling II** (3 cr). Overview of prevailing theories of counseling; study of predominant approaches, with emphasis on person-centered/existential/gestalt and cognitive/behavioral approaches; didactic and experiential activities to model application of techniques. Prereq: Coun 512.

Coun **514 Career Development and Lifestyle Planning** (3 cr). Same as VoEd 514. Career development theories, occupational and educational information and systems, career and leisure counseling, life-style and career decision-making, and career development program planning, resources, and evaluation. Prereq: perm.

Coun **515 Counseling in the Schools** (3 cr). Analysis of developmental approach to school counseling through in-depth study of its potential for application in educational settings; procedures to plan, design, implement, and evaluate developmental school programs are emphasized. Prereq: perm.

Coun **516 Counseling in the Community** (3 cr). General orientation to environment or systems in which community counseling is provided; specific and unique counseling knowledge and skills for use in these settings. Prereq: perm.

Coun **517 Group Counseling** (3 cr). Group theory and practice in counseling, including appropriate uses of group, member selection, planning and implementing groups, members' roles, rights, and responsibilities, group leader characteristics and skills, curative factors in group, ethical considerations, problems unique to group, client dynamics in group, and stages of group development. Prereq: Coun 512 and 513, or Coun 512 and perm; coreq: Coun 518.

Coun **518 Group Counseling Laboratory** (1 cr). Growth in self-selected area and group skills by participation in counseling group as a member. Graded P/F. One 2-hr lab a wk. Prereq: Coun 512 and 513, or Coun 512 and perm; coreq: Coun 517.

Coun **519 Social and Cultural Foundations in Counseling** (3 cr). Studies of societal changes and trends, human roles, societal subgroups, cultural mores and social interaction patterns, and differing lifestyles. Prereq: perm.

Coun **530 Principles and Practices of Rehabilitation** (3 cr). Orientation to rehabilitation history, philosophy, legislation, and delivery of services at federal, state, and private rehabilitation agencies involved in facilitating service for individuals diagnosed as having physical, mental, and/or emotional disabilities.

Coun **531 Psycho-social Aspects of Disability** (3 cr). Social and psychological aspects of disability; attitudinal and environmental problems associated with specific disabilities and their implications for intervention, approaches to rehabilitation across all disabilities, and differences between typical and pathological behavior of people with disabilities.

Coun **532 Medical/Physical Aspects of Rehabilitation** (3 cr). Medical terminology, physical characteristics, and medical information needed to serve people with disabilities; medical and health services used to accommodate and remediate medical and physical disabilities.

Coun **533 Rehabilitation Case Management and Community Resources** (3 cr). Making effective case and caseload management decisions including: intake interviewing; medical, psychological, and vocational evaluation referral; occupational alternatives; the IWRP; job placement; writing case histories/notes; and rehabilitation/treatment planning; information and methods of accessing community resources. Prereq: Coun 530.

Coun **534 Assessment in Vocational Rehabilitation** (3 cr). Methods for integrating and interpreting relevant data to provide people with disabilities knowledge about themselves to facilitate appropriate life decisions; advantages and disadvantages, selection, and administration of a variety of standard and non-standard instruments including intelligence, personality, interest, functional capacity, and vocational assessments.

Coun **535 Vocational Placement and Assistive Technology** (3 cr). Environmental and attitudinal barriers to employment experienced by people with disabilities; legislation and current assistive technologies examined as a means of addressing barriers to employment; methods and techniques in employer contact, job analysis, job development, job placement, and transitional planning to overcome those barriers; integrating knowledge about the consumer and labor markets to facilitate an appropriate vocational placement and retention. Prereq: Coun 533 or perm.

Coun **536 Professional Issues, Ethics, and Law in Rehabilitation** (2-3 cr). Analytical process of ethical decision-making as it applies to casework, organization policy, and law; relevant legal issues and professional responsibilities and duties; stimulates the need for continuous professional enhancement. Prereq: Coun 530 or perm.

Coun **550 Introduction to School Psychology** (3 cr). Overview of history, present role, and function: discussion of professional preparation, standards for delivery of services, ethical/legal issues, alternative delivery systems, emergent technologies, and the future of school psychology.

Coun **551 Assessment of Cognitive Functioning** (2 cr). Overview of theories of intelligence, commonly used assessment instruments/procedures, measurement and statistical concepts, test interpretations and reporting practices, assessment of diverse populations, and ethical/legal issues; discussion of emerging trends (e.g., portfolio assessment, curriculum based measures, and adaptive behavior measures). Coreq: Coun 552.

Coun **552 Lab: Assessment of Cognitive Functioning** (1 cr). Develop competence in administering, scoring, interpreting, and reporting results of intelligence tests commonly used in school settings. Coreq: Coun 551.

Coun **560 Theories of Vocational Choice** (3 cr). Same as VoEd 560. Social, psychological, and economic foundation of vocational choice and adjustment. Prereq: perm.

Coun **563 Consultation in Counseling and Human Services** (2 cr). Constructs and processes that influence human, organizational, and systems development through consultation. Prereq: placement in counseling and school psychology specialist programs or perm; coreq: Coun 564.

Coun **564 Consultation Lab** (1 cr). Application of consultation skills in Human Services settings including entry, diagnosis of presenting problem, implementation of choice, and disengagement. Coreq: Coun 563.

Coun **570 Research in Counseling** (1 cr). Review of research in counseling; presentation of student and faculty research and review of research.

Coun **571 Counselor Education and Supervision** (1 cr). Counselor education curriculum, procedures, and methods; counselor supervision purposes, procedures, and methods.

Coun **572 Advanced Theories of Individual and Group Counseling** (3 cr). Analysis of contemporary counseling theories; process, procedures, and techniques of major theories; emphasis on original sources. Prereq: Coun 512, 513, 517, and perm.

Coun **578 Ethics and Legal Issues in Counseling and Human Services** (1 cr). Advanced considerations in application of analytical process of ethical decision-making applied to casework, organization policy, and law.

Coun **579 Lifestyle Diversity** (1 cr). Exploration of differences in aspirations for social status, work climate, education, mobility, and financial security.

Coun **597** (s) **Practicum** (cr arr). Closely supervised experience as a counselor or school psychologist in a professional setting; 50 hrs of experience are required for each credit. Graded P/F. Prereq: Coun 510, 512, VoEd 464, and perm.

Coun **598** (s) **Internship** (cr arr). For advanced grad students. Currently offered in counselor education, counselor supervision, college counseling, college student personnel services, school special services, school psychology, school counseling, agency counseling, and private counseling practice. Graded P/F. Prereq: perm.

Coun **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Coun **600 Doctoral Research and Dissertation** (cr arr).

Crime and Justice Studies

Donald E. Tyler, Chair, Dept. of Sociology and Anthropology (101 Phinney Hall 83844-1110; phone 208/885-6751).

PREREQUISITE: Students are required to complete CJ 101 before enrolling in any other course in this field; exceptions by permission of the instructor.

CJ **101 Introduction to the Justice System** (3 cr). Survey of criminal justice organizations and procedures including history and function of law enforcement, probation, and parole agencies.

CJ **WS150 Organizational Environment of Criminal Justice** (3 cr). WSU Crm J 150. Impact of organization structures and dynamics on processes of decision making and the performance of criminal justice agencies. Prereq: CJ 101.

CJ **200** (s) **Seminar** (cr arr). Prereq: perm.

CJ **204** (s) **Special Topics** (cr arr). Prereq: perm.

CJ **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

CJ **299** (s) **Directed Study** (cr arr). Prereq: perm.

CJ **320 Police, Society, and Justice** (3 cr). History, development, and role of the police as a component of the justice system, with particular attention to the relationship of the police to community, society, and related institutions of social control; societal control of the police as well as the influences of social change and urban decay and disorder on methods of policing. Prereq: CJ 101.

CJ **ID&WS325 Criminal Law** (3 cr). WSU Crm J 320. Sources and purpose of criminal law, meaning of criminal responsibility, and elements of crime; taught by College of Law faculty members.

CJ **WS330 Crime Control Policies** (3 cr). WSU Crm J 330. Analysis of ideologies, assumptions, and performance of crime control policies. Prereq: CJ 101.

CJ **332 Corrections** (3 cr). See Soc 332.

CJ **WS365 Juvenile Justice and Corrections** (3 cr). WSU Crm J 365. History, philosophy, legal process, performance, and outcomes of the juvenile justice and corrections systems. Prereq: CJ 101.

CJ **WS370 The Police and Society** (3 cr). WSU Crm J 370. Development, organization, policies, and performance of the police. Prereq: CJ 101.

CJ **400** (s) **Seminar** (cr arr). Prereq: perm.

CJ **401 Justice Policy Issues** (3 cr). Focus on social, political, and economic factors that influence operation of the justice system and justice policy formation; critical issues such as the media and fear of crime to drugs and sentencing policy. Prereq: senior standing or perm.

CJ **404** (s) **Special Topics** (cr arr). Prereq: perm.

CJ **WS-J405/WS-J505 Comparative Criminal Justice Systems** (3 cr). WSU Crm J 405/505. Credit not granted for both CJ 405 and 505. Comparative study of criminal justice systems in selected foreign countries. Graduate-level counterpart has additional requirements. Prereq: CJ 101.

CJ **WS420 Law of Evidence and Criminal Procedure** (3 cr). WSU Crm J 420. Principal court decisions concerning standards of conduct and rights in the criminal process; evidentiary principles and privileges. Prereq: CJ 325.

CJ **422 Race, Gender, and Class in the Justice System** (3 cr). Critical focus on the issues of race, class, and gender and their consequences for the operation of the justice system; the role of the justice system in the history and experience of various minorities, theories of minority crime, and issues of selective enforcement, sentencing disparity, and disproportionate incarceration; the role of gender considered through the examination of offenders, victims, and criminal justice professionals.

CJ **498 Internship in Criminal Justice** (1-6 cr, max 6). Directed internship in designated criminal justice agency or institution. Graded P/F. Prereq: perm.

CJ **499** (s) **Directed Study** (cr arr). Prereq: perm.

CJ **WS505 Comparative Criminal Justice Systems** (3 cr). See CJ J405/J505.

CJ **WS530 Criminal Justice: Process and Institutions** (3 cr). WSU Crm J 530. Processes of criminal justice in the context of the social, political, and economic environments.

CJ **WS550 Planned Change in Criminal Justice** (3 cr). WSU Crm J 550. Analysis of change efforts aimed at individual, organizations, and communities to reduce crime and improve the criminal justice system.

CJ **WS570 The Police and Society** (3 cr). WSU Crm J 570. Community and selected social institutional factors as related to their influence on policy systems.

CJ **WS591 Seminar in the Administration of Criminal Justice** (3 cr, max 6). WSU Crm J 591. Current issues, problems, and critical concerns within the field of administration of criminal justice.

CJ **WS592** (s) **Topics in Criminal Justice** (3 cr, max 6). WSU Crm J 592. Selected issues and topics in criminal justice.

Dance

Calvin W. Lathen, Director, Div. of Health, Physical Education, Recreation and Dance (101 Phys. Ed. Bldg. 83844-2401; phone 208/885-7921).

Dan **100 Introduction to Dance** (3 cr). Introduction to dance as an art form, as entertainment, and as a lifelong activity; emphasis on appreciation and understanding of movement as an expression of human values, genres and historical styles, factors affecting change, current issues.

Dan **105** (s) **Dance** (1 cr, max arr). Same as PE 105. Modern, folk, ballet, jazz, square, and social dancing. Two hrs a wk. Graded P/F.

Dan **112 Recreational Dance Forms** (2 cr). Folk, square, social dance skills, cultural influences; basic teaching methods; dance in education and recreation.

Dan **200** (s) **Seminar** (cr arr). Prereq: perm.

Dan **203** (s) **Workshop** (cr arr). Prereq: perm.

Dan **204** (s) **Special Topics** (cr arr). Prereq: perm.

Dan **210 Dance Theatre** (1-3 cr, max 12). Open to all students. Stagecraft; dance styles including modern, jazz, ballet, tap. Two hrs of company class a wk plus additional rehearsals leading to performance. Prereq: dance experience.

Dan **216** (s) **Technique** (cr arr). For majors and minors. Theory and techniques in ballet, modern, jazz, and performance. Two to three hrs a wk in a basic instructional curriculum. Prereq: perm of division.

Dan **220** **Children's Dance** (2 cr). Alt/yrs. Methods and resource material for teaching dance to elementary school children and integrating dance into elementary school curriculum.

Dan **299** (s) **Directed Study** (cr arr). Prereq: perm.

Dan **320** **Labanotation** (3 cr). Alt/yrs. Intro to methods of notating movement; notating and reading basic elements of motif writing and Labanotation. Prereq: perm.

Dan **321** **Dance Pedagogy** (3 cr). Alt/yrs. Learning styles, teaching styles, and behaviors as they affect teaching and learning in dance; science of dance training. Prereq: perm.

Dan **325** **Dance Production** (3 cr). Alt/yrs. Organization and production of dance concerts; program planning, marketing, management, costume design, staging the production.

Dan **383** **Dance Composition** (1-2 cr, max 6). Improvisation and choreography using basic composition elements; advanced exploration of choreographic procedures and performance. Prereq: Dan 105 (modern I) and perm.

Dan **400** (s) **Seminar** (cr arr). Prereq: perm.

Dan **403** (s) **Workshop** (cr arr). Prereq: perm.

Dan **404** (s) **Special Topics** (cr arr). Prereq: perm.

Dan **410** **Pre-professional Dance Theatre** (1-3 cr, max 12). Advanced work in choreography and performance. Two hrs of company class a wk plus additional rehearsals leading to performance. Prereq: Dan 210, 325, 383.

Dan **416** (s) **Advanced Technique** (cr arr). For majors and minors. Advanced techniques and theory in ballet, modern, jazz, and performance. Two to three hrs a wk in preprofessional technique classes. Prereq: perm of division.

Dan **420** **Dance Accompaniment** (3 cr). Alt/yrs. Recorded music, percussion, and electronic accompaniments used for contemporary dance. Prereq: perm.

Dan **421** **Dance History** (3 cr). Alt/yrs. Development of theatrical, social, and educational dance from primitive to contemporary styles. Prereq: Dan 100 or perm.

Dan **433** **Practicum: Dance Teaching** (7 or 14 cr). Supervised teaching in grades 1-12; two-thirds of experience in secondary schools. Graded P/F. Prereq: EDTE 314, special methods in subject area, cumulative GPA of 2.50, and perm of dept. (Submit application via director of Center for Dance to director of clinical experiences in teacher education by December 1 of school yr before enrolling.)

Dan **495** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Dan **499** (s) **Directed Study** (cr arr). Prereq: perm.

Dan **523** **Issues in Dance Pedagogy** (3 cr). Current research, trends, and issues affecting effective dance teaching methods and teaching behavior, curriculum development, professional preparation.

Economics

S. M. Ghazanfar, Chair, Dept. of Economics (329 Admin. Bldg. 83844-3172; phone 208/885-6294; e-mail econ@uidaho.edu).

Note: Enrollment in 300- and 400-level economics courses is restricted to students who have completed at least 58 credits. In addition, CBE students must have earned at least a 2.4 GPA in the CBE predictor courses.

No course (CBE or outside the college) that is required in a CBE student's curriculum may be taken by CBE undergraduates on a P/F basis, with the exception of courses that are taught only on a P/F basis. Only upper-division CBE courses used as free electives may be taken by CBE undergraduates on a P/F basis.

Students who have not completed the prerequisites to a course for which they are otherwise eligible may register for the course with the instructor's approval.

Note: The combination of credits for Econ 201, 202, and 272 may not exceed 6 credits.

Econ **201, 202** **Principles of Economics** (3 cr) (C). Satisfies core requirement J-3-d. May be taken in either order. Econ 201: organization and operation of American economy; supply and demand, money and banking, macroeconomic analysis of employment, aggregate output and inflation, public finance, and economic growth. Econ 202: microeconomic principles governing production, price relationships, and income distribution. Econ 201 or 202 carry only two cr after 272. May involve some evening exams.

Econ **204** (s) **Special Topics** (cr arr). Prereq: perm.

Econ **272** **Foundations of Economic Analysis** (4 cr). Satisfies core requirement J-3-d. One-semester introductory course on the principles of economics, covering both micro- and macro- concepts, theory, analysis, and applications. May involve evening exams. Carries no credit after Econ 201 and 202; carries 3 credits after either Econ 201 or 202. Students who have successfully completed this course and later decide to major in economics are required, in consultation with the adviser, to take either Econ 201 or 202 for 2 credits.

Econ **299** (s) **Directed Study** (cr arr).

Econ **316** **Economics of Regulation** (3 cr). Analysis of rationale and effects of governmental regulation of marketplace; alternative theories of regulation; theories of market failure and governmental failure; rent seeking and dissipation; public utilities; selected case studies. Prereq: Econ 202 or 272 or perm.

Econ **343** **Money and Banking** (3 cr) (C). Influence of money and banking on economic activity; influence of monetary policies to achieve society's economic goals. May include evening exams. Prereq: Econ 201 and 202 or 272.

Econ **345** **American Economic Development** (3 cr). Patterns and causes of change in the American economy from colonial times to the present. Prereq: Econ 201 and 202 or 272.

Econ **351** **Intermediate Macroeconomic Analysis** (3 cr). Theory of the economy as a whole; national income accounting as a tool of analysis; national output and income, employment, price levels, and growth. May include evening exams. Prereq: Econ 201 and 202 or perm.

Econ **352** **Intermediate Microeconomic Analysis** (3 cr). Theory of the consumer, firm, industry, market, price determination, and allocation of productive resources. Prereq: Econ 201 and 202 or perm.

Econ **353** **Quantitative Methods in Economics** (3 cr). Quantitative economic analysis such as basic econometric models, forecasting, and mathematical methods; computer applications. Prereq: Econ 201, 202, and Stat 251.

Econ **385** **Environmental Economics** (3 cr). Theory of externalities and public goods, and application of economic principles to environmental issues. Prereq: Econ 202 or 272 or perm.

Econ **390** **Comparative Economic Systems** (3 cr). International comparisons of the origin, development, and attributes of the world's economic systems. Prereq: Econ 201 and 202 or 272.

Econ **398** (s) **Economics Internship Program** (1-3 cr, max 6). Enrollment restricted to economics majors; may not be used to fulfill upper-division economics requirement in any of the three economics degree programs. Graded P/F. Relevant learning experience in business and government. Prereq: perm.

Econ **400** (s) **Seminar** (cr arr). Prereq: perm.

Econ **402** (s) **Workshop** (cr arr). Prereq: perm.

Econ **404** (s) **Special Topics** (cr arr). Prereq: perm.

Econ **407** **Public Finance** (3 cr). Role of government in a market economy; public choice and collective decision-making; tax-shifting and incidence; structure and economics of federal taxes; governmental budgeting; public debt; special topics. Prereq: Econ 201 and 202, or 272.

Econ **408** **State and Local Government Finance** (3 cr). Fiscal federalism and the role of state-local jurisdictions, patterns and determinants of expenditures, structure and economic effects of revenue sources (e.g., sales, income, property taxation), urban fiscal problems, intergovernmental relations, and future trends. Prereq: Econ 201 and 202 or 272.

Econ **J409/J509** **Mathematical Economics** (3 cr). Same as AgEc J409/J509. Economic models, application of matrix algebra and calculus to economics, comparative statics, optimization models, and mathematical programming. Primarily designed for graduate students; undergraduate students intending to pursue graduate studies or inclined to develop greater quantitative rigor may enroll with permission of the instructor and adviser. Prereq: Math 170 or equiv, Econ 351-352 or equiv, or perm.

Econ **415** **Market Structure and Governmental Policy** (3 cr). Analysis of economic behavior under different market structures, e.g., competition, monopoly, oligopoly, monopsony, oligopsony, bilateral monopoly and cartels; theory of contestable markets; antitrust; regulation; selected case studies. Prereq: Econ 202 or 272 or perm.

Econ **ID430** **Regional/Urban Economics** (3 cr). WSU Econ 475. Location of economic activity, transportation problems, resource and product distribution methods, urban structure and growth, and related policy issues. Prereq: Econ 201 and 202 or 272.

Econ **441** **Labor Economics** (3 cr). Structure and composition of the labor force, wages and employment, human resources, income-maintenance program, and related policy issues. Prereq: Econ 201 and 202 or 272.

Econ **446** **International Economics** (3 cr). Analysis of international trade and financial transactions; trade policy; foreign exchange markets; adjustment processes; and international monetary system. May include evening exams. Prereq: Econ 201 and 202, or 272.

Econ **447** **Economics of Developing Countries** (3 cr). Same as AgEc 447. Characteristics of underdevelopment; historical perspective; theories and policies; development problems, e.g., poverty and income distribution, population, urban-rural migration and unemployment, agriculture, trade, aid, investment, debt; future prospects. Prereq: Econ 201 and 202, or 272, or perm.

Econ **WS450** **The Economics of Health Care** (3 cr). WSU Econ 455.

Econ **453** **Econometrics** (3 cr). Same as Stat 433. Use of quantitative techniques to analyze and test economic theories. Prereq: Stat 251 or equiv stat, and Math 160 or 170.

Econ **ID-J455/J555** **History of Economic Thought** (3 cr). WSU Econ 402. Development of economic thought; special focus on selected schools, including Greeks, Scholastics, Mercantilists, Physiocrats, Classicals, and neo-Classicals. Additional projects/assignments reqd for grad cr. Prereq: Econ 351, 352, and 353, or perm.

Econ **490** **Economic Theory and Policy** (3 cr). A capstone course for economics majors that integrates the theory, quantitative methods, and policy in the undergraduate economics major. Prereq: Econ 351, 352, 353, or perm.

Econ **499** (s) **Directed Study** (cr arr).

Econ **500** **Master's Research and Thesis** (cr arr).

Econ **501** (s) **Seminar** (cr arr). Prereq: perm.

Econ **502** (s) **Directed Study** (cr arr). Prereq: perm.

Econ **504** (s) **Special Topics** (cr arr). Prereq: perm.

Econ **507** **Research Methodology** (3 cr). See AgEc 507.

Econ **509** **Mathematical Economics** (3 cr). See Econ J409/J509.

Econ **510** **Advanced Microeconomics** (3 cr). Same as AgEc 510. Theory of consumer behavior, theory of production behavior, theory of imperfect competition, capital theory, and welfare economics. Prereq or coreq: Econ/AgEc 409/509 or equiv, or perm.

Econ **ID&WS522** **Advanced Aggregate Economics** (3 cr). WSU Econ 500. Same as AgEc 522. Theory of national income determination and stabilization policy in a monetary economy. Prereq: Econ 351 or perm.

Econ **525** **Econometrics** (3 cr). See AgEc 525.

Econ **526** **Economics of Business Decisions** (3 cr). Carries no credit after Econ J409/J509 or 510. Applied microeconomics, covering topics such as theory of demand, production, cost, forecasting, capital budgeting. May involve some evening exams. Prereq: perm.

Econ **555** **History of Economic Thought** (3 cr). See Econ J455/J555.

Econ **597** (s) **Practicum** (cr arr). Prereq: perm.

Econ **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Education

Dale O. Gentry, Dean, College of Education (301 Educ. Bldg. 83844-3080; phone 208/885-6772).

ED **201** **Introduction to Teaching** (2 cr) (EDTE 201). Interpersonal communication, human relations including multicultural concerns, discipline, classroom evaluation techniques, and use of technology. A 30-hr off-campus clinical experience in a K-12 classroom is required. Prereq: sophomore standing.

ED **312** **Educational Psychology** (2 cr) (EDTE 312). Processes of human growth, development, and learning, and the practical application of this knowledge to teaching. Prereq: Psyc 101.

ED **313** **Educational Measurement** (1 cr) (EDTE 313). Application of standardized testing, measures of central tendency, variability and correlation in educational research. Three lec a wk. Coreq: ED 312 or perm.

ED **314** **Strategies for Teaching** (3 cr) (EDTE 314). Problems and methods of teaching common to all subject and grade levels. Two lec and two hrs of microteaching lab a wk.

ED **328** **Introduction to Educational Technology** (2 cr) (EDTE 328). Provides individuals with minimal competencies enabling them to set up and use educational technology equipment, software, and related peripherals in K-college classroom settings; includes overview of Macintosh and PC computer hardware and software, videodisc, CD-ROM applications, content-specific hardware and software (e.g., touchscreens and science probeware), and traditional audiovisual display equipment and materials..

ED **430** **Practicum: Elementary School Teaching** (7 or 14 cr) (EDTE 430). Only double program participants enroll for 7 cr. Supervised teaching in elementary schools. Graded P/F. Prereq: ED 312, 313, 314, EDTE 326, 336, 338, 420, admission to teacher education, cumulative GPA of 2.50, and perm of dept; coreq: ED 445. (Submit application to director of clinical experiences in teacher education by December 1 of school yr before enrolling.)

ED **431** **Practicum: Secondary School Teaching** (7 or 14 cr) (EDTE 431). Only double program participants enroll for 7 cr. Supervised teaching in secondary schools. Graded P/F. Prereq: ED 312, 313, 314, EDTE 463, admission to teacher education, cumulative GPA of 2.50, and perm of dept; coreq: ED 445. (Submit application to director of clinical experiences in teacher education by December 1 of school yr before enrolling.)

ED **441** **Multimedia** (3 cr). Design, development, and implementation of multimedia based curriculum. Three lec and 2 hrs of lab a wk.

ED **444** **Telecommunications** (3 cr). See ITED 444.

ED **445** **Proseminar in Teaching** (3 cr) (EDTE 445). Orientation to practicum, career placement, and entry-level teaching. Coreq: enrollment in senior practicum.

ED **468** **Historical and Philosophical Foundations of Education** (3 cr) (EDTE 468). Events, leaders, ideas, and movements underlying development of education.

ED **542** **Instructional Design** (3 cr). Technology based instructional design, development, evaluation, and revision of curriculum.

ED **543** **Distance Education** (3 cr). Planning, implementation, and delivery of educational programming using a variety of distance education technologies.

ED **582** **Introduction to Research Methods** (3 cr) (EDTE 582). Overview of research techniques including experimental, descriptive, analytical, single subject, and qualitative research; special emphasis on reading and understanding, interpreting and critically evaluating research articles; basic principles in planning, analyzing, and writing quantitative research studies. Prereq: graduate standing.

ED **585** **Computer Systems for Educational Research** (3 cr) (EDTE 585). Educational applications of microcomputer and mainframe data analysis. Two lec and 2 hrs of lab a wk.

ED **586** **Advanced Planning and Design of Quantitative Educational Research** (3 cr) (EDTE 586). Planning, analyzing, writing, and evaluating research studies appropriate for the dissertation; formulation of conceptual framework relative to analytical process; research designs and control of variables, and interpretation of data; preparation of research presentations and writing for publication. Prereq: ED 582, ED 585, Stat 401, or equiv.

ED **587** **Seminar in Advanced Quantitative Research Methods** (3 cr). Understanding of design, analysis, and interpretation of educational research through review and critique of specific types of research studies; major focus on presentation of individual projects on the use of specific research design and analysis techniques. Prereq: ED 582, 585, 586, and a graduate statistics course.

ED **588** **Introduction to Qualitative Research** (3 cr). Introduction to rationale, theoretical foundations, design, methods, and ethical issues in conducting qualitative research.

ED **589** **Designing and Conducting Qualitative Research** (3 cr). Examination of data collection and analysis process, role of literature critique, survey of computer applications, and ethical issues. Prereq: ED 588 or perm.

ED **590** **Qualitative Research: Critiquing Frameworks, Practice, and Application** (3 cr). Advanced qualitative research issues: methodologies, interpretation, formats and perspectives for reporting/publication, application, and ethics. Prereq: ED 589 or perm.

Educational Administration

Norman N. Hallett, Coordinator, Dept. of Educational Administration (510 Educ. Bldg. 83844-3084; phone 208/885-7536).

EdAd **500** **Master's Research and Thesis** (cr arr).

EdAd **501** (s) **Seminar** (cr arr). Prereq: perm.

EdAd **502** (s) **Directed Study** (cr arr). Prereq: perm.

EdAd **504** (s) **Special Topics** (cr arr). Prereq: perm.

EdAd **505** (s) **Professional Development** (cr arr). Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program.

EdAd **WS507** **Educational Statistics** (4 cr). WSU EdPsych 508.

EdAd **ID&WS509** **Educational Administration** (2-3 cr). WSU Ed Ad 580. Principles and problems of organization and administration of American education, including local, regional, and state systems.

EdAd **510** **Strategic Planning for Educational Practitioners** (3 cr). Specifics included in both the discipline and process of strategic planning; team building, internal and external scanning, vision development, generating belief statements and exit outcomes, writing the mission statement, developing strategies to achieve organizational objectives, and establishing action plans.

EdAd **511** **Planning and Administering the Curriculum** (3 cr). Management skills, concepts, and information needed to administer a district-wide curriculum; audits and other evaluations as part of the curriculum or program development cycle; duties and responsibilities of curriculum developers from a standpoint of several possible roles and assignments; criteria and basic concepts for an audit, including essential curriculum management components, alignment, quality control, standards, and data sources.

EdAd **521** **Higher Education Administration and Governance** (3 cr). Administration in colleges and universities; history, basic systems of governance in different states, internal organizational structure, finance, student services, faculty, academic programs, affirmative action, and university relations.

EdAd **522** **Higher Education Community College Function, Philosophy, and Organization** (3 cr). Overview of development of the community college in the U.S.; mission, role, philosophy, and organization of community colleges including comparative differences of junior colleges, universities, and other higher education institutions; exploration of curriculum and clientele of community colleges from historical, contemporary, and futures perspectives; emphasis on roles of community college administrators.

EdAd **523** **Contemporary Issues in Higher Education** (3 cr). Analysis of leading current issues in postsecondary education, including but not restricted to tenure, research/teaching, extended learning-outreach programs, admission, retention, graduation requirements, and student-faculty evaluations.

EdAd **524** **History and Philosophy of Higher Education in the U.S.** (3 cr). Exploration of history and philosophy of higher education from its origins to the present day; emphasis on trends and issues that have impacted higher education and contributed to its evolution.

EdAd **526** **Student Services in Higher Education** (3 cr). Overview of administration of, and issues within, student affairs divisions of colleges and universities; includes organizational structures, philosophical underpinnings, history, relationship to missions of universities and colleges, and relationship to other divisions within universities and colleges.

EdAd **527** **Ethics and Law in Higher Education** (3 cr). Comprehensive overview of salient legal issues that have a direct impact on postsecondary education; topics include judicial review process, agency/authority, labor relations/collective bargaining, Affirmative Action, Americans' Disability Act (ADA), accreditation, and the Land Grant university system.

EdAd **534** **The Principalship** (3 cr). Prepare students for assuming the role of elementary or secondary school principal; emphasis on skills reqd for confidence in the role of principal.

EdAd **ID&WS535 School Finance** (3 cr). WSU Ed Ad 585. Theory and application of financing schools; application to Idaho schools. Prereq: EdAd 509.

EdAd **540 Middle School Curriculum and Program Management** (3 cr). Knowledge base about middle level educational programs, organizational patterns, instructional structures and practices; middle school and its essential characteristics; leadership roles of administrators, teachers, and counselors in middle school; future trends in middle level education.

EdAd **541 School Administrative Technology Applications** (2-3 cr). Potential and practicing school administrators will evaluate and analyze the increased efficiency and effectiveness of utilizing school administrative and instructional technology; knowledge of appropriate and efficient applications of the following: student scheduling; transportation scheduling and routing; school financial, personnel, payroll, accounting, and student records; curriculum management; student assessment analysis; electronic mail for both building and district systems; networking; evaluation of educational software; media center, electronic systems, and other technological applications to administrative functions.

EdAd **586 Advanced School Finance** (3 cr). Economic principles to provide insights into practical matters relating to school finance for principals, teachers, business managers, and other school officials; issues of educational productivity, allocation of resources, efficiency, equity, and liberty; review of basic accounting principles and requirements applying to both district and building levels. Prereq: EdAd 535.

EdAd **587 The Superintendency** (3 cr). Prepare students for assuming the role of superintendent of schools; emphasis on research-based role expectation and practical guidelines for superintendent behavior.

EdAd **588 Critique of Research** (2-3 cr). Research design and methods applicable to the dissertation; dissertation content, format, and style; primarily for educational administration doctoral students who have completed most of their course work; emphasis on review of educational administration doctoral dissertations and peer-reviewed literature. Prereq: Stat 251 or equiv, ED 582 or equiv, enrollment in a doctoral preparation program, or perm.

EdAd **589 Critical Thinking** (2-3 cr). Same as AdEd 589. For individuals curious about the thinking process; a variety of ways of learn about Vertical Thinking and Lateral Thinking; emphasis on practice using Lateral Thinking skills.

EdAd **590 Personnel Supervision and Evaluation** (3 cr). Designed to prepare administrators and others charged with employee supervision and evaluation to help improve school programs through effective supervision and evaluation of non-certificated and certificated personnel; total school improvement through effective hiring practices, staff development, coaching, teaming, providing employee performance feedback, and shared decision making practices; a variety of interpersonal, observational, and evaluative techniques are studied and practiced; emphasis on ongoing quality improvement for all personnel as well as intervention strategies for dealing with low performing staff members.

EdAd **591 Administration of Personnel** (3 cr). Selection, placement, and evaluation of teachers and administrators; salary schedules; school policies; teacher organizations and related matters.

EdAd **592 School-Community Relations** (3 cr). Interpreting the schools to the public, two-way flow of ideas between school and community.

EdAd **593 School Facilities Planning and Maintenance** (3 cr). Planning new school facilities; facility maintenance; legal provisions involving financing; preliminary surveys of need; relationships with architects and contractors.

EdAd **594 Theory in Educational Administration** (3 cr). Theories from psychology, sociology, and cultural points of view applied to school administration; problem solving/decision making; case study approach. Prereq: EdAd 509.

EdAd **596 Collective Negotiations for Teachers** (3 cr). Collective negotiations in public education; recognition of bargaining agent; appropriate unit; unit determination; representation and recognition procedures; scope and process of negotiations; bargaining and impasse procedures; collective agreements; impact of collective negotiations.

EdAd **598** (s) **Internship** (cr arr). Interns assigned for two semesters to practicing administrators in elementary or secondary schools or in district offices or in appropriate offices in higher education. Graded P/F. Prereq: substantial completion of certification program.

EdAd **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

EdAd **600 Doctoral Research and Dissertation** (cr arr).

Electrical Engineering

David P. Egolf, Chair, Dept. of Electrical Engineering (214 Buchanan Engr. Lab. 83844-1023; phone 208/885-6554).

EE **204** (s) **Special Topics** (cr arr). Prereq: perm.

EE **207 Introduction to Electrical Engineering** (3 cr). Not open for cr to electrical engineering majors. Power and energy concepts, circuit analysis, transient and steady state behavior, resonant systems, system analysis; elem differential equations will be introduced to solve basic transient problems. Prereq: Math 175, Phys 212.

EE **210 Electrical Circuits I** (3 cr). Intro to d.c. and transient electrical circuits; mesh and nodal analysis; dependent sources; circuit theorems; transient analysis with differential equations. Three lec and one recitation a wk. Coreq: Math 310, Phys 212.

EE **211 Electrical Circuits Lab I** (1 cr). Lab to accompany EE 210. Lab experiments and computer simulations. One 3-hr lab a wk. Coreq: EE 210, Phys 212.

EE **212 Electrical Circuits II** (4 cr). Continuation of EE 210. Intro to sinusoidal steady state circuits; time and frequency domain analysis; Laplace and Fourier transforms and Fourier series; transfer functions, Bode plots, filters, transformers, polyphase circuits. Four lec and one recitation a wk. Prereq: EE 210, Math 310, Phys 212.

EE **213 Electrical Circuits Lab II** (1 cr). Lab to accompany EE 212. Continuation of EE 211. Lab experiments and computer simulations. One 3-hr lab a wk. Prereq: EE 211, Phys 212; coreq: EE 212.

EE **292 Sophomore Seminar** (0 cr). Curriculum options, elective courses, preparation for graduate study, and current technical topics. Field trip may be reqd. Graded P/F.

EE **313 Analog and Digital Engineering** (3 cr). Laplace transforms, filters, transducers, grounding, digital logic, A/D and D/A converters, microcontroller systems. Prereq: EE 207.

EE **315**—see "Background Courses" below.

EE **316 Electronics I** (3 cr). Intro to application of electronic devices in electrical networks: diodes, rectifiers, power supplies, and thermal management; bipolar junction transistor principles, biasing, modeling and low-frequency, small signal applications; field effect transistor principles, biasing, modeling, and low-frequency, small-signal applications; operational amplifier fundamentals and applications. Prereq: EE 212, 213.

EE **317 Electronics I Lab** (1 cr). Lab to accompany or follow EE 316. Prereq or coreq: EE 316.

EE **318 Electronics II** (3 cr). Electronic amplifier frequency response (magnitude and phase); RC coupled amplifiers in cascade; large-signal amplifiers; implications of saturation and cut-off; feed-back amplifiers; intro to analog IC implementation. Prereq: EE 316, 317.

EE **319 Electronics II Lab** (1 cr). Lab to accompany or follow EE 318. Prereq or coreq: EE 318.

EE **320 Electric Machinery** (5 cr). Theory and application of electric machinery and transformers. Four lec and one 3-hr lab a wk. Prereq: EE 212, 213, Phys 212.

EE **321**—see "Background Courses" below.

EE **330 Electromagnetic Theory** (4 cr). Vector calculus; electrostatics, electrodynamics; electromagnetic waves in isotropic media; Maxwell's equations; boundary value problems. Prereq: Math 275, 310, Phys 212.

EE **331**—see "Background Courses" below.

EE **340 Digital Logic** (3 cr). Same as CoE 243. Number systems, truth tables, logic gates, flip-flops, combinational and synchronous sequential circuits using SSI, MSI, and programmable devices; intro to digital systems and basic microprocessor architecture; certification exam not reqd.

EE **341**—see "Background Courses" below.

EE **344 Logic Circuit Lab** (1 cr). Same as CoE 244. Open lab to accompany EE 340. Design and construction of combinational and synchronous sequential logic circuits; certification exam not reqd. One 1-hr lec a wk.

EE **350 Signals and Systems Analysis** (4 cr). Continuous and discrete, linear time-invariant systems; Laplace transforms; frequency transforms; Fourier series and transforms, DTFT and DFT; modulation; sampling and reconstruction; Z-transforms and discrete time systems. Prereq: EE 212 and Math 330.

EE **351**—see "Background Courses" below.

EE **398 Electrical Engineering Cooperative Internship** (1-3 cr, max arr). Supervised internship in industry in professional engineering settings, integrating academic study with work experience; requires weekly progress reports, a final written report, and a talk/presentation and additional details to be worked out with the faculty supervisor. Cannot be counted as a technical elective toward the B.S.E.E. or B.S.Comp.E. Graded P/F. Prereq: perm.

EE **401 Advanced Circuit Theory** (3 cr). Passive and active electrical networks; frequency response and complex frequency domain analysis, includes pole-zero considerations, root locus, and sensitivity functions. Prereq: EE 212, 213.

EE **404** (s) **Special Topics** (cr arr). Prereq: perm.

EE **J411/J511 Pulse and Digital Circuits** (3 cr). Electronic switching, timing, and pulse-shaping techniques; logic functions, realization with diodes, transistors, and FETs. Additional projects/assignments reqd for grad cr. Prereq: EE 316, 318, and access to and familiarity with "SPICE" simulation program.

EE **J412/J512 Active Filters** (3 cr). Second order, Butterworth, Chebychev, Elliptic and Bessel filter functions and active realizations for highpass, lowpass, bandpass, notch and all-pass filters; frequency and impedance scaling; frequency transformations; phase and group delay; filter sensitivity to passive and active elements; introduction to switched capacitor filters. Additional projects/assignments reqd for grad cr. Prereq: EE 318 or 401 or perm.

EE **J413/J513 Communication Circuits** (3 cr). Noise calculations and consideration in communication circuits, matching networks and impedance transformations, small signal HF amplifiers, sinewave oscillators, mixers and frequency changers, amplitude modulators and detectors, frequency modulators and discriminators, "linear" power amplifiers, tuned power amplifiers. Additional projects/assignments reqd for grad cr. Prereq: EE 318 and access to and familiarity with "SPICE" simulation program.

EE **J414/J514 Analog Integrated Circuit Analysis and Design** (3 cr). Alt/yrs. Extension of biasing and signal analysis, active current sources and loads, frequency response analysis and compensation techniques and analysis of currently available integrated circuits. Additional projects/assignments reqd for grad cr. Prereq: EE 316.

EE **J415/J515 CMOS Analog Electronics** (3 cr). CMOS technology, modeling and subcircuits plus amplifier, comparator and converter analysis and design. Additional projects/assignments reqd for grad cr. Prereq: EE 318 or perm.

EE **416 Linear Integrated Circuit Applications** (3 cr). Theory and practical implementation of operational amplifiers, voltage regulators, video amplifiers, and special purpose integrated circuits such as modulators, demodulators, phase locked loops, nonlinear circuits, charge-transfer devices, transducers, and optoelectronic circuits. Prereq: EE 318 or perm.

EE **421 Introduction to Power Systems** (3 cr). Power and energy relationships in power systems, multiphase generators, lines and transformers; power system representation, network solution, and intro to symmetrical components. Prereq: EE 320.

EE **422 Power Systems Analysis** (3 cr). Principles of power flow, fault and stability analysis; computer methods; load flow and econ dispatch. Prereq: EE 421.

EE **424 Power Electronic Circuits** (3 cr). Characteristics, limitations, and application of solid-state power devices; transistors and thyristors as power switching devices, gating techniques, snubbers; switch-mode power supplies, AC phase control, choppers, rectifiers, inverters, resonant converters, and practical aspects of converter design. Prereq: EE 318, EE 320.

EE **425 Power Electronics Lab** (1 cr). Measurement of operating characteristics of power semiconductors; experiments include testing of typical power converter circuits with emphasis on control, gating, protection requirements, and measurement techniques. Prereq or coreq: EE 424.

EE **432 Applications of Electromagnetic Theory** (3 cr). Maxwell's Equations; Poynting's vector and Poynting's Theorem; wave equation with solutions (vector and scalar, homogeneous and inhomogeneous), Helmholz equation; plane waves, reflection and refraction; introduction to classical electrodynamics, radiation from accelerated charges; introduction to antenna theory; transmission lines; waveguides and fiber optics; topics in wave propagation (microwave communication systems, wave propagation through the atmosphere, ionosphere, and magnetosphere, etc.). Prereq: EE 330 or perm.

EE **WS433 Numerical Solutions to Electromagnetic Problems** (3 cr). WSU E E 418.

EE **435 Microwave Engineering** (3 cr). Intro to transmission line theory, impedance matching, Smith Chart; N-port descriptions, passive networks. Prereq: EE 330 or perm.

EE **440 Digital Systems Engineering** (3 cr). Same as CoE 341. Advanced topics in combinational logic design such as iterative logic arrays, hazard free design, and VLSI logic implementations; study of asynchronous and synchronous sequential circuits, combinational and sequential circuit design with PLA's; register transfer language design of digital systems including data path and control structures with TTL including timing analysis. Prereq: EE 340, 344.

EE **441 Computer Organization** (3 cr). Register and processor level design of computer systems including the design of the ALU, CPU controller, memory arrays, virtual memory, cache, I/O interfaces and interrupt structures; techniques for analyzing system performance; organization of computer networks. Prereq: EE 340.

EE **443 Microcontrollers** (4 cr). Same as CoE 361. Introduction to use of embedded microcontrollers and microprocessors; processor architecture; assembly language programming; use of development systems and/or emulators for system testing and debugging; software and hardware considerations of processor interfacing for I/O and memory expansion; programmed and interrupt driven I/O techniques. Three lec and five hrs of lab a wk. Prereq: EE 340 and 344.

EE **445 Introduction to VLSI Design** (3 cr). Same as CoE 445. Principles of design of very large scale integrated circuits; CMOS logic design; transistor sizing and layout methodologies; intro to IC CAD tools. Prereq: EE 316, 340 or perm.

EE **452 Communication Systems** (3 cr). Linear and exponential modulation, noise, digital communication systems, intro to information theory. Prereq: EE 350.

EE **455 Digital Communications** (3 cr). Principles of data transmission; pulse code modulation; noise in digital communications; intro to information theory; entropy source coding and channel coding; block, cyclic, and convolutional codes. Prereq: EE 452.

EE **470 Control Systems** (3 cr). Control system design, frequency and time domain methods; performance specifications; computer control and computer-aided design. Prereq: EE 350.

EE **471 Digital Control Systems** (3 cr). Design of digital control systems; sampling, A/D, and D/A conversion issues; time domain, frequency domain, and state space design methods; use of computer-aided design tools. Three lec a wk and approximately three 3-hr labs. Prereq: EE 470.

EE **476 Digital Filtering** (3 cr). Design methods for recursive and non-recursive filters; frequency domain characteristics; computer-aided design; applications. Prereq: EE 350.

EE **477 Digital Process Control** (3 cr). See ChE 445.

EE **480-481 Senior Design** (3 cr). Computer-aided techniques, economics, marketing, reliability, and patents; projects require original design, working model, and report. Two lec and one 3-hr lab a wk. Prereq for EE 480: EE 318, 319, 320, 340, 344, Stat 301, or perm. Prereq for EE 481: EE 330, 350, 480, or perm.

EE **486 Solid-State Electronics** (3 cr). Physical electronics; diode and transistor models; noise mechanics. Prereq: EE 330.

EE **491 Senior Seminar** (0 cr). Technical topics, employment practice, and interviewing. One lec a wk; one 3-6 day field trip may be required. Graded P/F.

EE **499** (s) **Directed Study** (cr arr). Prereq: perm.

EE **500 Master's Research and Thesis** (cr arr).

EE **501** (s) **Seminar** (cr arr). Prereq: perm.

EE **502** (s) **Directed Study** (cr arr). Prereq: perm.

EE **504** (s) **Special Topics** (cr arr). Prereq: perm.

EE **511 Pulse and Digital Circuits** (3 cr). See EE J411/J511.

EE **512 Active Filters** (3 cr). See EE J412/J512.

EE **513 Communication Circuits** (3 cr). See EE J413/J513.

EE **514 Analog Integrated Circuit Analysis and Design** (3 cr). See EE J414/J514.

EE **515 CMOS Analog Electronics** (3 cr). See EE J415/J515.

EE **WS519 Data Conversion** (3 cr). WSU E E 596.

EE **520 Advanced Electrical Machinery** (3 cr). Synchronous machines and transformers, machine transient and subtransient reactances, excitation and voltage regulation, power curves, transformer connections, impedance, harmonics, and impulse characteristics. Prereq: EE 422.

EE **521 Power System Planning and Resources** (3 cr). Major decision-making and economic factors in electrical energy systems, planning and resource selection; hydroelectric, nuclear, and fossil fuel plants, steady state and transient stability, reliability, voltage levels, economic choices, and future resource potential. Prereq: EE 422 or perm.

EE **523 Symmetrical Components** (3 cr). Concepts of symmetrical components, sequence impedances of devices and lines, circuit equivalents for unbalanced faults, management during faults. Prereq: EE 422.

EE **524 Transients in Power Systems** (3 cr). Voltage transients; overvoltages during faults; recovery voltage characteristics; arc restrikes, switching surges, ferroresonance, and nonlinear phenomena. Prereq: EE 422.

EE **525 Power System Protection and Relaying** (3 cr). Power system faults and applicable relay systems; review of symmetrical components as applied to fault current and consideration of lightning and voltage surge protection. Prereq: EE 422 or perm.

EE **WS526 Protection of Power Systems II** (3 cr). WSU E E 511. Protection of electrical equipment as related to electric power systems with emphasis on digital algorithms. Prereq: EE 525 or perm.

EE **527 Dynamics and Control of AC Drives** (3 cr). Review of machine modeling techniques and simulation methods, principles of power converters for motor drive applications; analytical modeling and dynamic behavior of machine-drive systems; modulation, regulation, and control techniques; simulation of drive systems; case studies. Prereq: EE 320 and 470 or perm.

EE **529 Utility Applications of Power Electronics** (3 cr). HVdc transmission, static VAr compensators, FACTS devices, Custom Power devices, electrical energy storage systems, power quality, harmonic compensation, and alternative energy supply interfacing. Prereq: EE 422, 424.

EE **530 Advanced Electromagnetic Theory I** (3 cr). Field theory, classical electromagnetics, potential theory, boundary value problems, wave propagation, and scattering. Prereq: EE 432 or perm.

EE **533 Antenna Theory** (3 cr). Maxwell's equations, reciprocity, equivalence theorems; wire antennas, antenna arrays, aperture antennas; analysis and design techniques; hardware considerations. Prereq: EE 432 or perm.

EE **WS534 Applied Optics** (3 cr). WSU E E 504. Alt/yrs. Diffraction theory, Fourier transforming and imaging properties of lenses, spatial filtering, holography, temporal and spatial coherence, imaging through random media. Prereq: EE 330, EE 432.

EE **WS536 Remote Sensing Theory** (3 cr). WSU E E 516.

EE **R538 EM Simulation** (3 cr). Computer simulation of electromagnetics using the finite-difference time-domain (FDTD) method; theory of finite-difference simulation, techniques for modeling EM propagation in lossy and dispersive media, boundary conditions for time-domain simulation. Prereq: perm.

EE **539 Advanced Topics in Electromagnetics (3 cr).** Topics include computational and analytical methods, remote sensing, nonlinear optics, guided wave theory, antenna theory. Prereq: EE 530 or perm.

EE **ID540 Asynchronous Circuit Design** (3 cr). WSU E E 554. Design and analysis of asynchronous digital circuits and systems; topics include: delays and hazards, state encoding, speed-independent and delay-insensitive circuits, micropipelines, and signal transition graphs. Prereq: EE 440 or perm.

EE **541 Design of Digital Computer Systems** (3 cr). Formal description of computer systems; multiprocessor organization, microprocessor design, self-checking microprocessor design, microprogramming; pipelined processors, distributed processors, systolic arrays in VLSI; CAD tools in implementing digital systems on a chip set, PLA-register stack configurations, pipelined/parallel VLSI architectures, reduced instruction set computers. Prereq: EE 441 or equiv.

EE **542 Digital Systems Testing** (3 cr). Fundamentals of testing and design for testability of digital electronic systems at both the module and board level; topics include circuit simulation, fault modeling and simulation, test pattern generation, design for testability, and built-in self-test. Prereq: EE 440 or equiv.

EE **545 VLSI Design** (3 cr). Application of sampled domain techniques to design of MOS switched capacitor circuits, including both filters and non-filtering circuits; advanced digital and analog topics for high performance MOS VLSI circuits. Prereq: EE 318, 350, 445 or perm.

EE **548 Supercomputing** (3 cr). Same as CoE 548. A perspective of supercomputing from Von Neumann machines to data flow machines; multiprocessors, multicomputers, multivector, multithreaded, superscalar, VLIW, and super pipelined architectures; memory organization; interconnection networks; and parallel languages and compilers. Prereq: computer architecture course and skills in at least one computer language, or perm.

EE **549 Fault-Tolerant Digital Systems** (3 cr). Fault detection in combinational networks, fault-tolerant design of combinational and sequential circuits, fail-safe circuits, fault-tolerant microprocessor design, testing of iterative array cells. Prereq: EE 440 or equivalent.

EE **550 Communication Theory** (3 cr). Advanced topics in modern data communication; data transmission systems; transmission impairments; Nyquist signaling; introduction to information theory; data and channel coding; partial response signaling; maximum likelihood sequence estimation; error rates; sub-optimum probabilistic detection; equalization; Trellis-coded modulation. Prereq: EE 452 or perm.

EE **554 Information Theory I** (3 cr). Introduction to error control coding; finite field mathematics; polynomial fields; general theory of block codes; syndrome decoding; cyclic codes; encoders and decoders for cyclic codes; generator polynomials; BCH and Reed-Solomon codes; convolutional codes; the Viterbi algorithm; convolutional encoders and decoders; Trellis coded modulation. Prereq: EE 455 or 550 or perm.

EE **555 Information Theory II** (3 cr). Introduction to Shannon Theory; entropy, relative entropy, and mutual information; asymptotic equipartition; entropy rates of stochastic processes; data compression; channel capacity, differential entropy; the Gaussian channel, Lempel-Ziu coding, rate distortion theory. Prereq: EE 550 or 554 or perm.

EE **556 Adaptive Signal Processing** (3 cr). Theory and applications of adaptive signal processing; adaptive linear combiner; performance surfaces; adaptive optimization of performance by gradient search; learning curve behavior, adaptation rates, and misadjustment; applications to filtering, prediction, estimation, control, and neural networks. Prereq: EE 350, Math 330, EE 452 or 476 or 477, or perm.

EE **559 Advanced Topics in Communication Systems** (1-3 cr, max arr). A selection of advanced topics from new research areas in communication systems; a representative selection of topics includes: recent developments in coding and information theory, image compression, cellular and mobile communication systems, magnetic recording, satellite communication systems, spread-spectrum modulation, set-membership theory, clock and carrier recovery methods, and communication channel modeling. Prereq: EE 452 or perm.

EE **ID&WS570 Random Signals** (3 cr). WSU E E 507. Probability, random variables, and random signals in engineering systems; stochastic calculus, stationarity, ergodicity, correlation, and power spectra; propagation of random signals through linear systems; Kalman filter theory and applications. Prereq: EE 350 and Stat 301 or 451, or perm.

EE **571 System Identification** (3 cr). Identification of dynamic system models from test data; methods to be considered include least-squares, prediction error, maximum likelihood, instrumental variables, correlation, and extended Kalman filter; practical applications and computer-based exercises emphasized within a mathematically rigorous framework. Prereq: EE 570 or perm.

EE **ID&WS572 Linear System Theory** (3 cr). WSU E E 501. Linear spaces and linear operators; descriptions of dynamic systems; input-output descriptions; state-space concepts; canonical forms; controllability and observability; minimal realizations; application to control and general systems analysis; pole assignment; observers. Prereq: EE 470 or equivalent.

EE **ID&WS574 Optimal Control Theory** (3 cr). WSU E E 502. Intro to optimization, parameter optimization, optimization of dynamic systems, optimization of dynamic systems with path constraints, optimal feedback control and dynamic programming, linear quadratic regulators, second variation methods, singular control problems, differential games. Prereq: EE 572 or perm.

EE **576 Digital Signal Processing** (3 cr). Characteristics of discrete time signals; design of digital filters with applications; advanced digital signal processing algorithms; discrete time spectral analysis; introduction to 2D processing. Prereq: EE 476 or perm.

EE **577** (s) **Advanced Topics in Control Systems** (3 cr). Selection of advanced topics form new research areas in control systems; a representative selection of topics would include: adaptive, LOG/LTR, robust, nonlinear, fuzzy, and neural network control methods. Prereq: EE 572 or perm.

EE **578 Neural Network Design** (3 cr). Introduction to neural networks and problems that can be solved by their application; introduction of basic neural network architectures; learning rules are developed for training these architectures to perform useful functions; various training techniques employing the learning rules discussed and applied; neural networks used to solve pattern recognition and control system problems. Prereq: perm.

EE **591 Electrical Engineering Research Colloquium** (0 cr). Graded P/F. Weekly colloquia on topics of general interest in electrical engineering and related fields; speakers will be from UI Electrical Engineering Department, other departments on campus, WSU, the local community, and outside agencies and universities.

EE **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

EE **600 Doctoral Research and Dissertation** (cr arr).

BACKGROUND COURSES

These are not introductory-level courses. They are intended for engineers and scientists whose previous degrees are not in electrical engineering from ABET/EAC-accredited programs, who need to remove deficiencies before beginning graduate studies in electrical engineering.

EE **315 Background Study in Electronics** (3 cr). Not applicable toward any UI undergrad degree; valid only for removal of electronics (EE 316) deficiency for grad students who do not have BSEE background. See EE 316 for description. Graded P/F based on comprehensive exam at completion of course. Prereq: passing grade on Dept of Electrical Engineering's upper-division qualifying exam.

EE **321 Background Study in Electrical Machines** (3 cr). Not applicable toward any UI undergrad degree; valid only for removal of electrical machinery (EE 320) deficiency for grad students who do not have BSEE background. See EE 320 for description. Graded P/F based on comprehensive exam at completion of course. Prereq: passing grade on Dept of Electrical Engineering's upper-division qualifying exam.

EE **331 Background Study in Electromagnetic Theory** (3 cr). Not applicable toward any UI undergrad degree; valid only for removal of electromagnetic theory (EE 330) deficiency for grad students who do not have BSEE background. See EE 330 for description. Graded P/F based on comprehensive exam at completion of course. Prereq: passing grade on Dept of Electrical Engineering's upper-division qualifying exam.

EE **341 Background Study in Digital Computer Fundamentals** (3 cr). Not applicable toward any UI undergrad degree; valid only for removal of digital computer fundamentals (EE 340) deficiency for grad students. See EE 340 for description. Graded P/F.

EE **351 Background Study in Signals and Systems Analysis** (3 cr). Not applicable toward any UI undergrad degree; valid only for removal of signals and systems analysis (EE 350) deficiency for grad students who do not have BSEE background. See EE 350 for description. Graded P/F based on comprehensive exam at completion of course. Prereq: passing grade on Dept of Electrical Engineering's upper-division qualifying exam.

Engineering Management

Howard S. Peavy, Chair, Dept. of Civil Engineering (104 Buchanan Engr. Lab. 83844-1022; phone 208/885-6782).

EM **510 Engineering Management Fundamentals** (3 cr). Fundamental principles of engineering management addressing management theory applied to the engineering environment; management processes and techniques; attitudes that facilitate the leadership role of the engineering manager in an engineering organization; team-taught by business and engineering faculty. Prereq: perm.

EM **581 Project Planning and Monitoring** (3 cr). Formalized procedures, tools, and techniques used in conceptual and detailed planning of the project; application of project data in monitoring the project progress and in formulating remedial actions in response to unexpected occurrences; evaluation and ranking of the entire project after the deliverables have been accepted by the client. Prereq: CE 482.

EM **582 Project Estimating and Cost Management** (3 cr). Procedures used in developing the project estimate during the planning stages, and updating the estimate throughout the project life-cycle; tools and techniques used in monitoring, managing, and controlling the cost of the project; procedures used in managing the project resources in order to minimize the cost of the project. Two lec and 3 hrs of lab a wk. Prereq: EM 581.

EM **583 Managing Project Scope, Schedule, and Risks** (3 cr). Procedures used in developing the project schedule during the planning stages, and updating the schedule during the project life-cycle; tools and techniques used in monitoring, managing, and controlling the duration of the project; procedures used in managing the balance between the cost, duration, and quality of the project, evaluation and management of project risks. Two lec and 3 hrs of lab a wk. Prereq: EM 581.

EM **584 Bidding and Contract Management** (3 cr). Elements of the bidding process; procedures used in developing the bid based on the estimate and on the market conditions; review of elements of the contract; using the contract as a guide during the project life-cycle for partial payments, additional payments, and resolution of unusual occurrences. Two lec and 3 hrs of lab a wk. Prereq: CE 484, EM 581.

EM **586 Project Management Software Tools** (3 cr). Procedures and techniques used in identifying software packages for use in recording and reporting project information; process of selecting project management software; characteristics and features of project management software; extensive hands-on experience in use and evaluation of project management software packages. Two lec and 3 hrs of lab a wk. Prereq: EM 582, 583, 584.

English

Douglas Q. Adams, Chair, Dept. of English (200 Carol Ryrie Brink Hall 83844-1102; phone 208/885-6156).

ADVANCED PLACEMENT: Courses in this subject field that are vertical in context are: Eng 101-102.

PREREQUISITES: Students may enroll for a second-semester course in English without having had the first-semester course, unless it is a stated prerequisite to the second-semester course. Engl 101 and 102 are prerequisite to all upper-division courses. A transfer student who lacks Engl 101 or 102, or both, may take either or both for credit even though he or she has already taken a literature course for which Engl 101 or 102 is prerequisite at UI. Engl 210 is a prerequisite or corequisite for all English majors and English education majors to all courses numbered 300 and above.

Engl **101 Introduction to College Writing** (3 cr) (Engl 103). Workshop on strategies for generating ideas for writing, for planning and organizing material, and for revising and editing; intended to prepare students for the demands of college writing, focusing on reading critically and incorporating source material. Graded P (pass)/N (repeat)/F (fail).

Engl **102 College Writing and Rhetoric** (3 cr) (Engl 104). Applied principles of expository and argumentative essay writing, including summaries, critiques, and syntheses of texts, and the research essay; emphasis on clear, concise, and vigorous prose. Graded A/B/C/N (repeat)/F. Prereq: Engl 101 or equiv.

Engl **257-258 Literature of Western Civilization** (3 cr) (Engl 111-112). Satisfies core requirement J-3-d. Masterpieces reflecting development of Western thought and culture. Engl 257: Classical Greece to the Renaissance. Engl 258: 17th century to the present.

Engl **175 Introduction to Literature** (3 cr). Basic course in literary genres (novel, drama, poetry) to provide the general student with the terminology and standard techniques of literary explication.

Engl **204** (s) **Special Topics** (cr arr). Prereq: perm.

Engl **207** (s) **Persuasive Writing** (3 cr). Satisfies core requirement J-3-a. Intermediate course in the practices of writing to persuade with special emphasis on current issues and audience awareness; includes research-based writing. Prereq: Engl 102 or equiv.

Engl **208** (s) **Personal and Exploratory Writing** (3 cr). Satisfies core requirement J-3-a. Intermediate course in the practices of personal and exploratory writing; may include personal narrative and observation, autobiography, or extended reflection; special attention to prose style and voice; includes research-based writing. Prereq: Engl 102 or equiv.

Engl **209** (s) **Inquiry-Based Writing** (3 cr). Satisfies core requirement J-3-a. Intermediate course in the uses of writing to explore and stake out intellectual positions; special emphasis on the nature of evidence used to develop and support knowledge claims in specific fields. Prereq: Engl 102 or equiv.

Engl **210 Reading - Writing - Texts** (3 cr). Examines methods and assumptions guiding the analysis and interpretation of a variety of literary texts; requires extensive critical reading and writing. Prereq: Engl 102 or equiv.

Engl **291 Creative Writing: Poetry** (3 cr). Intro to techniques of writing poetry. Graded P/F.

Engl **292 Creative Writing: Fiction** (3 cr). Intro to techniques of writing fiction. Graded P/F.

Engl **295** (s) **Seminar in Literary Studies** (3 cr). Introductory seminar devoted to topics, issues, and methods of inquiry in literary studies; topics vary and will be announced in the *Time Schedule*; requires extensive critical reading and writing. Prereq: Engl 102 or equiv.

Engl **300 ESL Research Writing** (3 cr, max arr). Limited to students whose native language is not English. Research methods, scientific writing style, vocabulary grammar forms, reference citation forms, note-taking from lec, and technical lec presentations. Normally scheduled on the basis of three lec per wk; however, additional lec, lab, and/or tutorial sessions may be scheduled and reqd. Prereq: perm of dept.

Engl **301** (s) **Special Topics** (cr arr). Variable content course covering special topics of contemporary interest. Topics and number of cr will be announced in the Time Schedule.

Engl **309 Advanced Prose Writing** (3 cr). Theory and practice in writing prose; many assignments in expression, explanation, and persuasion. Prereq: Engl 102 or equiv.

Engl **313 Business Writing** (3 cr). Principles of clear writing related to business style; correspondence and reports; form, content, and style. Prereq: Engl 102 or equiv; jr standing or perm.

Engl **317 Technical and Engineering Report Writing** (3 cr). Satisfies core requirement J-3-a. Principles of clear writing related to technical style; problems such as technical description, proposals, formal reports, and technical correspondence. Prereq: Engl 102 or equiv; jr standing or perm.

Engl **321 The Novel for Nonmajors** (3 cr) (C). Major novels from the 18th century to the present.

Engl **325 Contemporary Literature for Nonmajors** (3 cr). Current poetry, drama, and prose; emphasis on U.S. authors.

Engl **341-342 Survey of British Literature** (3 cr). Engl 341: Beowulf to Samuel Johnson. Engl 342: Robert Burns to contemporary writers.

Engl **343-344 Survey of American Literature** (3 cr). Engl 343: Colonial beginnings to the Civil War. Engl 344: Post-Civil War to contemporary writers.

Engl **345 Shakespeare** (3 cr). Introductory course; background and study of selected plays representative of Shakespeare's achievement.

Engl **375 The Bible as Literature** (3 cr). Same as RelS 375. Literary qualities of the Bible.

Engl **380 Introduction to U.S. Ethnic Literatures** (3 cr). Emphasis on U.S. minority writers and reading across cultures; selections will vary from semester to semester.

Engl **391 Intermediate Poetry Writing** (3 cr). Intermediate poetry writing workshop; emphasis on workshop approach, development of portfolio, continued reading in poetry. Prereq: Engl 291 or perm.

Engl **392 Intermediate Fiction Writing** (3 cr). Intermediate fiction writing workshop; emphasis on workshop approach, development of portfolio, continued reading in fiction. Prereq: Engl 292 or perm.

Engl **400** (s) **Seminar** (cr arr). Prereq: perm.

Engl **401 Writing Workshop for Teachers** (3 cr). Enrollment limited to juniors or seniors majoring or minoring in secondary English education or English (with certification) or to senior elementary education majors; others may enroll with permission of the instructor. Theory and practice of jr/sr high school composition instruction; further development of student's own writing skills. Three lec and one lab a wk.

Engl **404** (s) **Special Topics** (cr arr). Prereq: perm.

Engl **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Engl **421 Development of the English Novel** (3 cr). Major writers from the beginnings to Scott.

Engl **422 The Nineteenth-Century English Novel** (3 cr). Dickens to Hardy.

Engl **425 Irish Literary Renaissance** (3 cr). Literature of Ireland after 1880, especially Yeats, Joyce, and Synge.

Engl **426 Modern Poetry** (3 cr).

Engl **427 American Fiction, 1914-1945** (3 cr). Fiction by writers such as Cather, Dos Passos, Faulkner, Fitzgerald, Hemingway, and Wright.

Engl **428 British Fiction, 1900-1945** (3 cr). Fiction by such writers as Conrad, Forster, Joyce, Lawrence, and Woolf.

Engl **429 Contemporary Fiction** (3 cr). Fiction since 1945 by writers such as Barth, Bellow, Fowles, Lessing, Morrison, Nabokov, and Pynchon.

Engl **430 Perspectives in Film** (3 cr). Same as ComG 430. Survey of major principles and methods of film criticism as they relate to development of film art from 1890 to the present. Prereq: Intr 126 or ComG 288 or perm.

Engl **433 Chaucer** (3 cr). Intro to Chaucer's poetical works.

Engl **434 Middle English Literature** (3 cr). Middle English literature to 1500, excluding Chaucer and drama.

Engl **436 Advanced Shakespeare** (3 cr). Intensive study of a number of plays grouped according to mode, kind, theme, or the dramatist's dev. Prereq: Engl 345 or perm.

Engl **437 English Drama to 1642** (3 cr). Medieval through renaissance drama, emphasis upon Marlowe, Jonson, Webster.

Engl **438 English Drama, 1660-1800** (3 cr). Heroic play and tragedy; sentimental drama; comedy of manners.

Engl **439 Modern English and American Drama** (3 cr). Plays of the chief 20th-century dramatists.

Engl **441 Introduction to the Study of Language** (3 cr). Same as Anth 441. Surveys of sound patterns, morphological processes and syntactic structures; questions of language acquisition, variation, and history; exercises from a variety of languages, with emphasis on American English.

Engl **442 Introduction to English Syntax** (3 cr). Structure and processes of English syntax; syntax as component of style. Prereq or coreq: Engl 441 or perm.

Engl **443 Language Variation** (3 cr). Geographic and social dialects (e.g., black English), levels of formality and their linguistic consequences; literary use of language variation (as in Dickens and Hardy, Twain and Faulkner); occupational dialects and jargons. Prereq or coreq: Engl 441 or perm.

Engl **445 Literature for Adolescents** (3 cr). Theory and practice of literature study in secondary schools, and appraisal of literature appropriate to the needs, interests, and abilities of adolescents. Prereq: enrollment in a program leading to certification in secondary English or elementary ed (elementary ed majors must have completed 6 cr of literature and EDTE 338; students in secondary ed programs must have completed 9 cr of literature); or perm.

Engl **448 Psycholinguistics** (3 cr). Same as Psyc 448. Survey of cognitive processes of language comprehension, language/speech production, and language acquisition. Prereq: Engl or Anth 441, Psyc 101.

Engl **451 Sixteenth-Century Poetry and Prose** (3 cr). Major authors of the period with emphasis on Spenser.

Engl **452 Milton** (3 cr). Major prose and poetry of Milton.

Engl **453 Seventeenth-Century Poetry and Prose** (3 cr). Major authors excluding Milton; emphasis on Bacon, Browne, Burton, Donne, Herbert, Herrick, Marvell.

Engl **456 Restoration and Eighteenth Century** (3 cr). Neoclassical poetry and prose from Dryden to Johnson.

Engl **465 The Romantic Period** (3 cr). Poetry and prose of the early 19th century; emphasis on Blake, Wordsworth, Coleridge, Shelley, Keats, Byron.

Engl **466 The Victorian Period** (3 cr). Poetry and prose; emphasis on Tennyson, Browning, Arnold, Carlyle, Newman, J. S. Mill.

Engl **470 American Literature to 1830** (3 cr). Colonial period to the early republic; emphasis on Bradford, Bradstreet, Taylor, Edwards, Franklin, Cooper, Irving.

Engl **471 Poe, Hawthorne, and Melville** (3 cr). Major works and their place in the American Renaissance.

Engl **472 Emerson, Thoreau, and Whitman** (3 cr). Major works and their place in the American Renaissance.

Engl **473 Literature of the American West** (3 cr). Writings that reflect the growth of the western U.S. from frontier days to the present.

Engl **474 American Literature, 1865-1914** (3 cr). Writers of realistic and naturalistic fiction such as James, Twain, Wharton, and Dreiser, and poets such as Whitman and Dickinson.

Engl **480 Ethnic and Minority Literature** (3 cr). Texts by ethnic and minority writers, primarily but not exclusively American; e.g., Black, Native American, Chicano, Asian American, Black South African.

Engl **481 Women's Literature** (3 cr). Literature by women; genres, nationalities, and historical periods may vary from semester to semester.

Engl **482** (s) **Major Authors** (3 cr, max arr). Comprehensive study of the works of a single author. See the Time Schedule for author.

Engl **483 Black Literature** (3 cr). Major works of U.S. Black writers; emphasis on the 20th century.

Engl **484 American Indian Literature** (3 cr). Recent poetry and prose written by and about American Indians.

Engl **491 Advanced Creative Writing: Poetry** (3 cr, max arr). Continuation of Engl 391. Prereq: Engl 391 or perm.

Engl **492 Advanced Creative Writing: Fiction** (3 cr, max arr). Continuation of Engl 392. Prereq: Engl 392 or perm.

Engl **494 Methods of Literary Criticism** (3 cr). Intro to major principles and methods of literary analysis; practice in applying critical methods to selected poems, fiction, and drama.

Engl **495 Literary Criticism** (3 cr). From Plato to the present.

Engl **496 History of the English Language** (3 cr). Evolution of the language from Proto-Germanic to American English. Prereq: Engl 441 or perm.

Engl **J498/J598** (s) **Internship** (1-3 cr). Graded P/F. Supervised experience in professional uses of English. Additional projects/assignments reqd for grad cr. Prereq: perm of director of grad and undergrad studies, Dept of English.

Engl **499** (s) **Directed Study** (1-3 cr, max 3). Prereq: perm.

Engl **500 Master's Research and Thesis** (cr arr). Graded P/F.

Engl **501** (s) **Seminar** (cr arr). Prereq: perm.

Engl **502** (s) **Directed Study** (1-3 cr, max 3). Normally offered in English and American literature and in linguistics; may not duplicate course offerings. Graded P/F. Prereq: perm.

Engl **504** (s) **Special Topics** (cr arr). Prereq: perm.

Engl **505** (s) **Workshop** (cr arr). May be graded P/F. Prereq: perm.

Engl **506 Language and Teaching of Writing** (3 cr). Linguistic, rhetorical, stylistic, and pedagogical concepts essential to teaching college-level writing.

Engl **508 MAT Project** (3 cr). Graded P/F.

Engl **509** (s) **Creative Writing** (3 cr, max 12). Workshop for advanced writers; analysis of theory, composition, and techniques with applied goal of extending technical skills of the student writer through study of professional writers' work. All applicants must submit typed manuscripts of their work at least 10 days before registration. Prereq: perm.

Engl **ID510** (s) **Studies in Linguistics** (3 cr, max 12). WSU Engl 541. Topics such as phonology, morphology, syntax, linguistic history, or the application of linguistics to the teaching of English literature or composition. Prereq: 6 cr in the following: Engl 441, 442, 443, 496, 506, or perm.

Engl **511** (s) **Studies in Literary Criticism** (3 cr, max 12). History of criticism; various schools of literary criticism. Prereq: Engl 495 or perm.

Engl **512** (s) **Studies in Literary Theory** (3 cr, max 12). Various genres (poetry, drama, fiction), forms, and modes (tragedy, comedy, satire).

Engl **ID513 ESL Methods I: Basic Oral/Aural Skills** (3 cr). WSU Engl 544. Alt/yrs. Survey of most widely used classroom techniques for developing speaking and listening skills in a second language; alternative innovative approaches. Prereq: Engl 441 or perm.

Engl **WS514 ESL Methods II: Reading, Writing, and Special Purpose English** (3 cr). WSU Engl 544. Alt/yrs. Survey of most widely used classroom techniques for developing reading and writing skills in a second language and teaching techniques to specialized professional programs. Prereq: Engl 441 or perm.

Engl **ID515 ESL Teaching Practicum** (3 cr). WSU Engl 544. Alt/yrs. Organization and teaching of an ESL course under direction of practicum instructor. Graded P/F. Prereq: Engl 514 or perm.

Engl **ID516 Intercultural Communication** (3 cr). WSU Engl 544. Alt/yrs. In-depth examination of major issues related to communication across cultures: communication theory, linguistic relativity, ethnography of speech, crosscultural rhetoric, and nonverbal communication. Prereq: Engl 441 or perm.

Engl **ID517 Contrastive Linguistics** (3 cr). WSU Engl 543. Alt/yrs. Theory and practice of comparing and contrasting linguistic systems as basis for preparing instructional materials. Prereq: Engl 441 and one of the following: Engl 442, 443, 496, 510, or perm.

Engl **ID518 Advanced English Grammar** (3 cr). WSU Engl 543. In-depth linguistic analysis of English grammar, giving special emphasis to morphology and syntax. Prereq: Engl 441 or perm (recommended preparation: Engl 442).

Engl **ID519 Linguistic Analysis** (3 cr). WSU Engl 543. Advanced work in analysis and description of phonology, morphology, and syntax of languages. Prereq: Engl 441 or perm (recommended preparation: Engl 442).

Engl **520** (s) **Studies in Medieval Literature** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

Engl **530** (s) **Studies in Renaissance and 17th-Century British Literature** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

Engl **540** (s) **Studies in Restoration and 18th Century British Literature** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

Engl **WS543 Topics in English Linguistics** (3 cr, max 6). WSU Engl 543.

Engl **550** (s) **Studies in 19th-Century British Literature** (3 cr, max 12). Normally offered in survey of Romantic literature, survey of Victorian literature, genre studies, and major author(s).

Engl **560** (s) **Studies in American Literature Before 1900** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

Engl **570** (s) **Studies in 20th-Century British and American Literature** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

Engl **591 Advanced Poetry Writing** (3 cr, max 9). Advanced poetry writing workshop. Prereq: graduate level only; perm by manuscript screening.

Engl **592 Advanced Fiction Writing** (3 cr, max 9). Advanced fiction writing workshop. Prereq: graduate level only; perm by manuscript screening.

Engl **593 Writing Literary Non-fiction** (3 cr, max 9). Seminar on the evolving genre of "literary non-fiction": using modes of fiction, drama, and poetry for nonfictive aims, such as memoirs or autobiography, travel narrative, and character sketch; workshop on participants' writing in the genre. Prereq: graduate level only; perm by manuscript screening.

Engl **594 Editing and Publishing** (3 cr). Required of all MFA candidates. Workshop on preparing creative, scholarly, and popular manuscripts for publication; emphasis on practical experience in designing, editing, and producing literary magazines.

Engl **597** (s) **Practicum** (3 cr, max 6). Prereq: perm.

Engl **598** (s) **Internship** (1-3 cr). See Engl J498/J598.

Engl **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Entomology

Lawrence E. O'Keeffe, Head, Dept. of Plant, Soil, and Entomological Sciences (242 Iddings Wing, Ag. Sc. Bldg. 83844-2339; phone 208/885-6274).

Ent **211 General Entomology** (4 cr). Satisfies core requirement J-3-b. Same as Biol 211. Structure, development, classification, habits, and ecology of insects. Three lec and one 3-hr lab a wk.

Ent **322 Economic Entomology** (3 cr). Identification, biology, and importance of insects and related arthropods to humans and agriculture; basic principles of arthropod pest management. Two lec and one 3-hr lab a wk.

Ent **398 Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

Ent **400** (s) **Seminar** (cr arr). Prereq: perm.

Ent **404** (s) **Special Topics** (cr arr). Prereq: perm.

Ent **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Ent **438 Pesticides in the Environment** (3 cr). See Soil 438.

Ent **WS-J439/WS-J539 Insect-Plant Interactions: Community Dynamics** (1 cr). WSU Entom 441.

Ent **J440/J540 Insect Identification** (4 cr). Alt/yrs. Survey of approximately 200 major families; collecting and preservation techniques. For grad cr, an additional 50 families and selected subfamilies and genera will be covered and a term paper is reqd. Two lec and two 2-hr labs a wk; two 1-day field trips. Prereq: Ent 211 or perm.

Ent **WS443 Natural History and Population Management of Insects** (1 cr). WSU Entom 443. Alt/yrs.

Ent **ID-J445/ID-J549 Insect-Plant Interactions: Mechanisms of Insect-Plant Interactions** (1 cr). WSU Entom 445. Alt/yrs. Principles and methodologies involved in insect-plant interactions, i.e., biochemical, ecological, evolutionary; bioassays for measuring insect-plant interactions. Requirements for grad cr include paper. Prereq: Ent 211 or perm.

Ent **ID-J446/ID-J546 Insect-Plant Interactions: Host Plant Resistance** (1 cr). WSU Entom 445. Alt/yrs. Principles and methodologies involved in insect-plant interactions, i.e., biochemical, ecological, evolutionary; bioassays for measuring insect-plant interactions. Requirements for grad cr include paper. Prereq: Ent 211 or perm.

Ent **J447/ID-J547 Fundamentals of Biological Control** (3 cr). WSU Entom 547. Alt/yrs. Intro to history and development of biological control and biological and ecological factors involved; emphasis on entomophagous and phytophagous insects. For grad cr, a "grant proposal" for presentation and critique and a semester project reqd. Prereq: Ent 211 and general ecology or perm.

Ent **WS448 Medical Entomology** (4 cr). WSU Entom 448. Alt/yrs.

Ent **J451/ID-J551 Applied Biological Control: Weeds** (1 cr). WSU Entom 551. Alt/yrs. Principles and methodologies in biological control of weeds. Requirements for graduate credit include leading a classroom presentation and discussion session. Prereq: one ecology course, Principles of Biological Control or perm.

Ent **J452/ID-J552 Applied Biological Control: Arthropod Pests** (1 cr). WSU Entom 552. Alt/yrs. Principles and methodologies in biological control of insect and mite pests. Requirements for graduate credit include paper. Prereq: one ecology course, Principles of Biological Control or perm.

Ent **J453/ID-J553 Applied Biological Control: Microbial Control** (1 cr). WSU Entom 553. Alt/yrs. Principles and methodologies of microbial control of insect pests, weeds, and plant pathogens in agriculture and forestry. . Requirements for graduate credit include leading a class presentation and discussion session. Prereq: one course in microbiology, plant pathology, or entomology, and Principles of Biological Control or perm.

Ent **ID472 Aquatic Entomology** (1 cr). WSU Entom 472. Identification and biology of insects associated with aquatic and subaquatic environments. Prereq: perm.

Ent **ID474 Aquatic Entomology Lab** (2 cr). WSU Entom 474. Lab to accompany Ent 472. Two 3-hr labs a wk; two 1-day field trips. Coreq: Ent 472.

Ent **WS480 Urban Entomology** (3 cr). WSU Entom 480.

Ent **J484/J584 Insect Anatomy and Physiology** (4 cr). Same as Zool 494. Alt/yrs. Organ systems of insects and their functions. A comprehensive term paper and research project reqd for grad cr. Three lec and one 3-hr lab a wk. Prereq: Ent 211.

Ent **J491/J591 Principles of Insect Pest Management** (3 cr). Alt/yrs. Quantitative analyses, ecological theory, and pest control tactics required to design and conduct integrated pest management programs for insects. Two written papers and one classroom seminar reqd for grad cr. Prereq: one course in statistics or perm.

Ent **499** (s) **Directed Study** (cr arr). Prereq: perm.

Ent **500 Master's Research and Thesis** (cr arr).

Ent **501** (s) **Seminar** (cr arr). Prereq: perm.

Ent **502** (s) **Directed Study** (cr arr). Prereq: perm.

Ent **504** (s) **Special Topics** (cr arr). Prereq: perm.

Ent **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Ent **WS539 Insect-Plant Interactions: Community Dynamics** (1 cr). See Ent J439/J539.

Ent **540 Insect Identification** (4 cr). See Ent J440/J540.

Ent **ID541 Advanced Insect Ecology** (3 cr). WSU Entom 541. Alt/yrs. Population and community dynamics set in a systems framework; theory and applications in natural and altered systems. Two lec and one 3-hr lab a wk; two 1-day field trips. Prereq: Ent 211 and general ecology or perm.

Ent **WS542 Insect Behavior** (4 cr). WSU Entom 542. Alt/yrs.

Ent **WS543 Predator-Prey Dynamics** (1 cr). WSU Entom/Zool 543. Dynamic consequences of interactions between predators and their prey at the population, community, and ecosystem level. Prereq: general ecology.

Ent **544 Systematic Entomology** (3 cr). Alt/yrs. Principles and concepts of insect classification; taxonomic procedures, rules of zoological nomenclature, and intro to evolution, speciation, and biogeography.

Ent **ID546 Insect-Plant Interactions: Host Plant Resistance** (1 cr). See Ent J446/J546.

Ent **ID547 Fundamentals of Biological Control** (3 cr). See Ent J447/J547.

Ent **ID549 Insect-Plant Interactions: Mechanisms of Insect-Plant Interactions** (1 cr). See Ent J445/J549.

Ent **ID551 Applied Biological Control: Weeds** (1 cr). See Ent J451/J551.

Ent **ID552 Applied Biological Control: Arthropod Pests** (1 cr). See Ent J452/J552.

Ent **ID553 Applied Biological Control: Microbial Control** (1 cr). See Ent J453/J553.

Ent **WS556 Insecticides: Toxicology and Mode of Action** (1 cr). WSU Entom 556. Alt/yrs. Insecticides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism. Prereq: organic chemistry, biochemistry, and insect physiology.

Ent **WS558 Pesticide Topics** (1 cr). WSU Entom 558. Alt/yrs. Current issues concerning pesticides in terms of toxicity, mode of action, and metabolism. Prereq: organic chemistry, biochemistry, and plant, insect, or animal physiology.

Ent **WS583 Physiological Interactions in Predator/Prey Relationships** (1 cr). WSU Entom/Zool 583. Physiological, behavioral, and ecological aspects of host/parasitoid and prey-predator interactions. Prereq: general physiology, behavior, and ecology.

Ent **584 Insect Anatomy and Physiology** (4 cr). See Ent J484/J584.

Ent **591 Principles of Integrated Pest Management** (3 cr). See Ent J491/J591.

Ent **WS595 Noncropland Weed Biological Control Internship** (1-3 cr, max 6). WSU Entom 595. Prereq: graduate standing; by interview only.

Ent **597** (s) **Practicum** (cr arr). Prereq: perm.

Ent **598** (s) **Internship** (cr arr). Prereq: perm.

Ent **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Ent **600 Doctoral Research and Dissertation** (cr arr).

Environmental Science

Margrit von Braun, Program Coordinator (315 Buchanan Engr. Lab. 83844-1025; phone 208/885-6113; e-mail cdixon@uidaho.edu).

Note: Most of the courses in this interdisciplinary program are in other academic departments and are not listed below. Please refer to the curricular requirements in part 5 for a complete list of classes.

EnvS **101 Introduction to Environmental Science** (3 cr). Introduction to basic principles in the biological, physical, and social science areas of environmental science.

EnvS **102 Field Activities in Environmental Sciences** (1 cr). Field studies for EnvS 101. Field demonstrations on waste management, water, air pollution, and the ecosystem. Field trips required. Prereq or coreq: EnvS 101.

EnvS **400** (s) **Seminar** (1 cr). Prereq: senior standing.

EnvS **WS428 Pollution Prevention** (3 cr). WSU ES/RP 428. Introduction to practical tools necessary for completing on-site waste audits.

EnvS **R429 Environmental Audit** (3 cr). Details on a variety of equipment and processes used by business in order to decrease generation of solid and hazardous waste.

EnvS **WS-J445/WS-J545 Hazardous Waste Management** (3 cr). WSU ES/RP 445/545.

EnvS **R470 Survey of Hazardous Waste Management Problems** (3 cr). Cr not granted for both ChE J470/J570 and EnvS R470. Not applicable toward any engineering degree. Environmental, technical, political, and economic aspects of hazardous waste management. Prereq: sr standing and perm.

EnvS **R471 Waste Treatment Technologies** (3 cr). Not applicable toward any engineering degree. Procedures for characterization of hazardous waste sites, identification and application of physical, chemical, biological, and thermal treatment. Prereq: Math 143 and Chem 112.

EnvS **R472 Remediation Technologies and Project Implementation** (3 cr). Not applicable toward any engineering degree. Waste site remediation and restoration technologies and project development; includes alternative technologies, containment, storage and disposal; emphasis on project development, organization, and practices for dealing with hazardous chemical, radioactive, and mixed wastes and for successful site remediation operations including administrative, legal, economic, and political considerations. Prereq: sr standing and perm.

EnvS **R-J479/R-J579 Introduction to Environmental Regulations** (3 cr). Interpretation and implementation of local, state, and federal environmental rules; introduction to environmental regulatory process; topics include regulatory aspects of environmental impact assessment, water pollution control, air pollution control, solid and hazardous waste, resource recovery and reuse, toxic substances, pesticides, occupational safety and health, radiation, facility siting, environmental auditing and liability. Additional projects/assignments reqd for grad cr.

EnvS **497** (s) **Practicum in Environmental Science** (3 cr). Problem solving in the environmental sciences using laboratory, field, or library techniques. Prereq: senior standing.

EnvS **499** (s) **Directed Study** (cr arr). Prereq: perm.

EnvS **500 Master's Research and Thesis** (cr arr).

EnvS **501** (s) **Seminar** (cr arr).

EnvS **502** (s) **Directed Study** (cr arr). Prereq: perm.

EnvS **504** (s) **Special Topics** (3 cr). Prereq: perm.

EnvS **R531 Environmental Modeling** (3 cr). Description of chemical environmental fate and transport processes mathematically; transformation of mathematical concepts to computer programs; art of model calibration and verification, and techniques in uncertainty analysis.

EnvS **R541 Sampling and Analysis of Environmental Contaminants** (3 cr). Monitoring system design, sampling procedures, RCRA/CERCLA sampling, quality assurance data quality objectives. Prereq: Chem 112, Stat 301.

EnvS **WS545 Hazardous Waste Management** (3 cr). See EnvS WS-J445/WS-J545.

EnvS **R580 Environmental Law and Regulation** (3 cr). Emphasis on cases, legislation, and policies behind environmental laws and regulations to enhance understanding of judicial construction and interpretation of environmental laws. Prereq: EnvS R479/R579 or perm.

EnvS **R581 Applications of Environmental Regulations** (3 cr). Details of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); interpretation and application of environmental regulations to remediation of hazardous waste treatment, storage, and disposal sites; detailed coverage of environmental regulatory affairs of concern in Idaho; interrelationships between RCRA, CERCLA, and other environmental laws. Prereq: EnvS R479/R579 or perm.

EnvS **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Family and Consumer Sciences

Suzanne Loker, Director, Margaret Ritchie School of Family and Consumer Sciences (105 Mary Hall Niccolls Family and Consumer Sciences Bldg. 83844-3183; phone 208/885-6545; e-mail famcon@novell.uidaho.edu).

FCS **105 Individual and Family Development** (3 cr). Basic principles and sequences in individual and family development; family structure and functions as they support human development.

FCS **WS108 Merchandising Options** (2 cr). WSU AMT 108.

FCS **123 Textiles** (3 cr). Fiber, yarn, and fabric properties, color and finishes as they relate to performance, care, and consumer satisfaction. Two lec and one 2-hr lab a wk.

FCS **129 Dress and Culture** (3 cr). Social, psychological, and cultural aspects of clothing, including the relationship of clothing to physical and social environments, aesthetic and personal expression, and cultural ideals and values. Field trip.

FCS **170 Introductory Foods** (3 cr). Fundamental processes underlying food preparation with emphasis on physical and chemical aspects. Two lec and one 3-hr lab a wk. Prereq: 3 cr of Chem 101 or 111.

FCS **200** (s) **Seminar** (cr arr). Prereq: perm.

FCS **203** (s) **Workshop** (cr arr). Prereq: perm.

FCS **204** (s) **Special Topics** (cr arr). Prereq: perm.

FCS **205 Concepts in Human Nutrition** (3 cr). Nutrition principles with their application to nutrition in life cycle; nutrition problems and controversies such as weight control and nutrition for athletes; individual computerized study of student's dietary intake.

FCS **ID223 Evaluation of Apparel and Textiles** (3 cr). WSU AMT 216. Analysis of textile and apparel products relative to production methods, product performance, and consumer value. Three lec and 2 hrs of lab a wk; field trips. Prereq: FCS 123 or perm.

FCS **ID224 Apparel Design I** (3 cr). WSU AMT 218. Design conception, fabric characteristics, garment assembling, principles of fitting, quality control for the apparel industry. One lec and five hrs of lab a wk.

FCS **234 Infancy and Early Childhood** (3 cr). Influences on development before birth through the preschool years; factors that determine physical, emotional, cognitive, social, and creative development.

FCS **235 Principles and Methods of Child Observation** (3 cr). Development of skills necessary to observe, record, and interpret child behavior; observations to be arranged. Prereq: FCS 234 or perm.

FCS **240 Intimate Relationships** (3 cr). Dynamics of intimate relationships from early adulthood through the adult lifespan.

FCS **270 Intermediate Foods** (3 cr). Sensory evaluation, meal planning, consumer issues, cultural influences on food choices. Two lec and one 2-hr lab a wk. Prereq: FCS 170.

FCS **299** (s) **Directed Study** (cr arr). Prereq: perm.

FCS **ID305 Nutrition Related to Fitness and Sport** (2 cr). WSU Ath T 305. Identification of energy, macro/micro nutrient and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight maintenance, and wellness. Prereq: FCS 205.

FCS **WS306 Gerontology** (3 cr). WSU H D 305.

FCS **ID324 Apparel Design II** (3 cr). WSU AMT 311. Methods and principles of flat pattern design; use of pattern making skills to create original designs; development and application of computer skills in designing apparel for the industry. One lec and five hrs of lab a wk. Prereq: FCS 224 or perm.

FCS **329 Historic Costume** (3 cr). Costume as an expression of the times; includes social and psychological aspects of clothing and historical overview of costume.

FCS **333 Developmental Curriculum for Young Children** (3 cr). Principles and practices of a developmentally based curriculum, assessment, intervention, and evaluation. Two lec and two hrs of lab a wk. Prereq: FCS 235 or perm.

FCS **334 Middle Childhood-Adolescence** (3 cr). Behavior, development, and guidance of children and youth from entrance in school until they are launched into adulthood; influences of family, school, peer group, and larger community. Prereq: Psyc 101, Soc 101, or perm.

FCS **340 Parent-Child Relationships in Family and Community** (3 cr). May be taken by nonmajors. Dynamics of parent-child interactions and models for parent education programs in community and school settings. Prereq: FCS 234 or 334.

FCS **346 Personal and Family Finance and Management** (4 cr). Principles and procedures of individual and family management and their relationship to human and economic resources; applications of management principles to spending, saving, borrowing, and investing decisions.

FCS **361 Advanced Nutrition** (4 cr). Principles of nutrition; physiology of digestion, absorption and metabolism of nutrients. Three lec and 2 hrs of lab a wk. Prereq: FCS 205, MMBB 380, Zool 120 and 121.

FCS **362 Introduction to Clinical Dietetics** (4 cr). Dietetics, role of the dietitian; dietary departments in health care facilities. Three lec and 3 hrs of supervised practice a wk. Prereq: jr standing in CPD.

FCS **363 Diet Therapy** (4 cr). Diet modification for adult and child needs in disease and convalescence. Clinical experience in Spokane hospitals. Prereq: sr standing in CPD.

FCS **364 Clinical Dietetics I** (4 cr). Clinical experience in Spokane hospitals. Prereq: sr standing in CPD.

FCS **384 Quantity Food Production and Equipment** (5 cr). Food production in large volume; use and selection of institutional equipment and food; supervised practice in food service. Three hrs of lec, 1 hr of recitation, and 5 hrs of supervised practice a wk. Prereq: FCS 270 or perm.

FCS **387 Food Systems Management** (3 cr). Institutional organization and management; supervised practice in food service. Two lec and 3 hrs of supervised practice a wk. Prereq: FCS 384 or perm.

FCS **400** (s) **Seminar** (cr arr). Prereq: perm.

FCS **403** (s) **Workshop** (cr arr). Prereq: perm.

FCS **404** (s) **Special Topics** (cr arr). Prereq: perm.

FCS **ID405 Eating Disorders** (2 cr). WSU FSHN 405. Examination of anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; discussion of cultural and nutritional factors, family issues, and psychological consequences, as well as preventative and therapeutic interventions.

FCS **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

FCS **WS-J417/WS-J517 Social and Psychological Aspects of Dress** (3 cr). WSU AMT 417/517.

FCS **ID&WS424 Apparel Design III** (3 cr). WSU AMT 412. Pattern creation through draping method; application of computer skills in designing apparel for target groups. One lec and 5 hrs of lab a wk. Prereq: FCS 324 or perm.

FCS **WS426 Fashion Merchandising** (3 cr). WSU AMT 318. Apparel merchandising planning, including merchandise selection, buying, and promotion; emphasis on merchandising mathematics. Prereq: Bus 321 or perm.

FCS **428 Family Housing** (2 cr). Housing and families as affected by consumer issues, public policy, housing history, and social, economic, political, and technical factors.

FCS **ID429 Current Issues in Clothing and Textiles** (3 cr). WSU AMT 314. Discussion of major topics of current interest in clothing and textiles including theory, research, and application in today's world. Prereq: FCS 129, 329 or perm.

FCS **436 Theories of Child and Family Development** (3 cr). Identification, interpretation, and evaluation of individual and family developmental theories.

FCS **440 Contemporary Family Relationships** (3 cr) (C). Dynamics of the major types of family relationships; marital, parent-child, sibling, and extended-family interaction in contemporary society. Prereq: Psyc 101, Soc 101, or perm.

FCS **444 Diverse Populations and Individual Differences** (2-3 cr). See VoEd 444.

FCS **J445/J545 Issues in Work and Family Life** (3 cr). Alt/yrs. Study of theories, trends, policies, and issues related to work and family; examination of assessment instruments; development of proposals. Additional projects/assignments reqd for grad cr. Prereq: FCS 105 and 346, or perm.

FCS **448 Consumer Education** (3 cr). Consumer economic issues, including consumers in the marketplace, the consumer movement, rights and remedies, advocacy, public policy, decision making, buying, credit, banking, insurance, clothing, health care, food, housing, and investments. Prereq: Econ 201 or 202 or perm.

FCS **450 Curriculum Development in Family Life Education** (3 cr). Analysis of curricular models and content; development of curricular units for family life. Prereq: admission to teacher education program.

FCS **451 Professional Development** (3 cr). Ethics, public policy, and communication related to family and consumer issues. Prereq: senior standing.

FCS **460 Family as an Ecosystem** (3 cr). Survey of the literature and discussion of the interaction between ecological factors (political, social, and economic) and contemporary families; analysis of the interrelationship of social change and family values, structure, and roles.

FCS **470 Trends in Nutrition Research** (3 cr) (C). Nutrition research methodology, literature critique, and recent advances in nutrition and dietetics. Prereq: FCS 205.

FCS **471 Student Teaching in Family Life Education** (10 cr). Ten weeks of practical experience in secondary family and consumer sciences program; one week of field-based experience at assigned student teaching center before beginning of semester is required. Prereq: admission to teacher education program, FCS 450.

FCS **472 Clinical Dietetics II** (6 cr). Continuation of FCS 364. Supervised practice in Washington/Idaho hospitals. Prereq: FCS 364, sr standing in CPD.

FCS **473 Community Nutrition** (4 cr). Nutrition program; nutrition problems of special groups. Clinical experience in Spokane school lunch program, public health, etc. Two lec and six hrs of supervised practice a wk. Prereq: sr standing in CPD.

FCS **474 Food Research and Development** (3 cr). Same as FST 474. Independent and team research on foods and food products; sensory and objective testing of food; research writing and presentation. Two lec and 3 hrs of lab a wk. Prereq: FST 101 or FCS 270, MMBB 380 or perm.

FCS **485 Computer Applications in Food Administration** (2 cr). Nutrient analysis and management of ingredients, recipes, menus, and related functions. One hr of lec and 2 hrs of lab a wk. Prereq or coreq: FCS 384 or perm.

FCS **ID&WS486 Nutrition in the Life Cycle** (4 cr). WSU FSHN 331. Maternal nutrition and fetal development; lactation; nutritional needs and dietary patterns from infancy through old age. Three lec and 2 hrs of lab a wk. Prereq: sr standing in CPD.

FCS **487 Management Supervised Practice** (2 cr). Food service management; program organization, analysis, and evaluation of food service facilities and resources; equipment/purchasing tours; pre-practicum experience. One lec and 3 hrs of supervised practice a wk. Prereq: FCS 387.

FCS **488 Food Service Management Practicum** (6 cr). Supervised practice with dietitians and employees in school and hospital food service settings in Idaho or Washington. Prereq: FCS 487.

FCS **496 Internship: Fashion Business** (3-9 cr). Supervised experience in fashion business: fashion design, textile/apparel manufacturing, retailing, merchandising; geared to career goals of student. Graded P/F. Prereq: perm.

FCS **497** (s) **Practicum** (cr arr). On- or off-campus supervised applied experience in family and consumer sciences major areas: child development and family relations; clothing, textiles, and home design; food and nutrition; consumer education; and cooperative extension. Prereq: perm.

FCS **498** (s) **Internship** (3-9 cr). Supervised internship in education institutions, governmental/social agencies, hospitals, business, or industry; geared to the professional goals of students. Prereq: perm.

FCS **499** (s) **Directed Study** (cr arr). Prereq: perm.

FCS **500 Master's Research and Thesis** (cr arr).

FCS **501** (s) **Seminar** (cr arr). Prereq: perm.

FCS **502** (s) **Directed Study** (cr arr). Prereq: perm.

FCS **503** (s) **Workshop** (cr arr). Prereq: perm.

FCS **504** (s) **Special Topics** (cr arr). Prereq: perm.

FCS **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

FCS **507 Research Methodology** (3 cr). See AgEc 507.

FCS **WS511 Research Methods I** (3 cr). WSU HD 513.

FCS **WS513 Mineral Vitamin Metabolism** (4 cr). WSU FSHN 513.

FCS **WS514 Advanced Nutrition** (3 cr). WSU FSHN 504.

FCS **WS517 Social and Psychological Aspects of Dress** (3 cr). See FCS J417/J517.

FCS **WS520 Research Methods in Behavioral Nutrition** (3 cr). WSU FSHN 520.

FCS **WS521 Research Methods in Human Development I** (3 cr). WSU HD 521. Introduction to process of research and methods in human development; includes techniques of research, data collection, and data analysis procedures. Prereq: perm.

FCS **WS522 Research Methods in Human Development II** (3 cr). WSU HD 522. Integration of formal decision making into the social science research process; includes procedures appropriate for experimental, quasi-experimental, and field research. Prereq: perm.

FCS **WS526 Advanced Community Nutrition** (3 cr). WSU FSHN 526.

FCS **ID540 Parent-Child Relationships** (3 cr). WSU HD 555. Open to nonmajors. The developing family; patterns of child rearing. Prereq: FCS 234 or 334, 440, and 6 cr in psychology and/or sociology or equivalent.

FCS **545 Issues in Work and Family Life** (3 cr). See FCS J445/J545.

FCS **551 Techniques of Supervision** (2 cr).

FCS **ID554 Program Development in Child, Family, and Consumer Studies** (3 cr). WSU HD 535. Analysis and development of program delivery systems, curricula, and evaluation models.

FCS **ID560 Family Resource Management** (3 cr). WSU HD 575. Management of economic and human resources with focus on family structures in all socioeconomic and age groups. Prereq: FCS 346 or equivalent or perm.

FCS **ID561 Sports Nutrition** (3 cr). WSU FSHN 561. Macronutrient and selected micronutrient utilization during exercise and restoration after feeding, dietary surveys of athletes, dietary ergogenic aids, and discussion of the origins of dietary recommendations for athletes. Prereq: perm.

FCS **WS580 Family Policy** (3 cr). WSU HD 580. Analysis of family policy research; role of family policy research in public policy and knowledge building processes. Prereq: approved graduate research methods course.

FCS **ID590 Intellectual Foundations in Family and Consumer Sciences** (3 cr). WSU AMT 598. Overview of historical perspectives of family and consumer sciences profession; explanation and application of alternative modes of inquiry in family and consumer sciences research.

FCS **597** (s) **Practicum** (cr arr). Prereq: perm.

FCS **598** (s) **Internship** (cr arr). Supervised internship in educational institutions, governmental/social agencies, hospitals, or industry; geared to the educational and vocational goals of students. Prereq: perm.

FCS **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Fishery Resources

George W. LaBar, Head, Dept. of Fish and Wildlife Resources (105 FWR Bldg. 83844-1136; phone 208/885-6434).

PREREQUISITE: Courses in this subject field numbered above 299 are not open to any undergraduate student who is on academic probation.

Fish **102 The Fishery Resources Profession** (1 cr). Orientation of students to the profession of fishery resources; career opportunities, employment, duties of a fishery biologist, job preparation, management challenges in the Pacific Northwest. Graded P/F.

Fish **200** (s) **Seminar** (cr arr). Prereq: perm.

Fish **203** (s) **Workshop** (cr arr). Prereq: perm.

Fish **204** (s) **Special Topics** (cr arr). Prereq: perm.

Fish **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Fish **290 Principles of Fish Biology and Management** (2 cr). Application of biological and ecological principles and concepts to management of fish populations and their habitats; interrelationships of fisheries with other natural resources, current issues and challenges in fisheries management.

Fish **299** (s) **Directed Study** (cr arr). Prereq: perm.

Fish **301 Wildland Field Ecology I** (1 cr). Introduction to field ecology; the rationale for and importance of studying terrestrial, aquatic, and human ecosystems; practical experience with tools and skills used to measure wildland ecosystem processes. One 5-hr lab a wk. Prereq or coreq: For/RRT/Soc 235 and For/Rnge/WLF 221.

Fish **302 Wildland Field Ecology II** (2 cr). Field studies of ecological and socio-political processes in terrestrial, aquatic, and human ecosystems at individual, population, community, landscape, regional, and global scales; application of ecological principles to integrated natural resource management. Two weeks all-day lec/lab immediately following spring semester; overnight field excursions required.

Fish **398** (s) **Renewable Natural Resources Internship** (cr arr). Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F. Prereq: perm of dept.

Fish **400** (s) **Seminar** (cr arr). Prereq: perm.

Fish **401** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Fish **403** (s) **Workshop** (cr arr). Prereq: perm.

Fish **404** (s) **Special Topics** (cr arr). Prereq: perm.

Fish **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Fish **411 Ichthyology** (4 cr). See Zool 481.

Fish **ID413 Fish Ecology** (2 cr). WSU Zool 414. Principles regulating density of fishes; interrelationships of fishes; response of fishes to environmental stress.

Fish **ID415 Limnology** (4 cr). WSU Zool 411. Same as Zool 435. Physical, chemical, and biological features of lakes and streams. Four 1-day field trips. Prereq: general ecology.

Fish **417 Aquaculture** (3 cr). Concepts and methods of extensive and intensive aquaculture in warmwater, coldwater, and marine systems. One 1-day field trip. Prereq: Fish 411.

Fish **ID&WS418 Fisheries Management** (4 cr). WSU NATRS 416. Techniques employed in sampling and application of principles toward managing recreational and commercial aquatic resources. Three lec and one 3-hr lab a wk; two weekend field trips. Prereq: Fish 290 and 411, Stat 251.

Fish **ID&WS420 Fish Diseases** (3 cr). WSU NATRS 421. Epidemiology, diagnostics, prevention, and treatment of infectious and noninfectious diseases of free-living and confined finfish. Prereq: MMBB 250.

Fish **430 Riparian Ecology and Management** (2 cr). Structure, function, and management of riparian ecosystems; interrelationships of terrestrial and aquatic components of riparian areas. Prereq: WLF/For/Range 221.

Fish **446 Diseases of Wild Birds and Mammals** (2 cr). See WLF 446.

Fish **470 Interdisciplinary Natural Resource Planning** (3 cr). Land use planning and decision-making theories, legislation and techniques applied to natural resource case studies from public and private sector, including impact assessment, creation and valuation of alternatives, and public involvement. Two hrs of lec, 3 hrs of lab, and 1 hr of recitation a wk; one 1-day field trip. Prereq: senior standing; For/RRT/Soc 235; For/Rnge/WLF 221; For/Rnge/ForP/RRT/WLF/Fish 302, and four of the following: ForP 250, Rnge 251, For 270, WLF 290, Fish 290, RRT 287.

Fish **495 Seminar** (1 cr). Discuss integrating biological, social, political, economic, and philosophic aspects of problems in managing fishery resources.

Fish **497 Senior Thesis** (1-3 cr, max 6). Open only to majors in fishery resources. Preparation of thesis, exhibition, video, computer program, multimedia program, or other creative presentation based on research conducted under the guidance of a faculty mentor. Prereq: cumulative GPA of at least 3.5 in all college courses, completion of at least 90 credits, and permission of a faculty mentor.

Fish **499** (s) **Directed Study** (cr arr). For the individual student; conferences, library, field, or lab work. Prereq: senior standing, GPA 2.5, and perm.

Fish **500** **Master's Research and Thesis** (cr arr).

Fish **501** (s) **Seminar** (cr arr). Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Prereq: perm.

Fish **502** (s) **Directed Study** (cr arr). Prereq: perm.

Fish **503** (s) **Workshop** (cr arr). Selected topics in the conservation and management of natural resources. Prereq: perm.

Fish **504** (s) **Special Topics** (cr arr). Prereq: perm.

Fish **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Fish **ID510** **Advanced Fishery Management** (3 cr). WSU Zool 513. Alt/yrs. Compensation as a phenomenon basic to exploitation; yield in numbers and weight; models of yield; stock-recruitment functions; economic yield; application of theory of physical and economic yield to empirical examples in commercial and sport exploitation. One 5-day field trip.

Fish **ID511** **Fish Physiology** (4 cr). WSU Zool 515. Alt/yrs. Principles and methods used to study vital organs, organ systems, growth, and reproduction of fishes; emphasis on osmoregulation, metabolism, endocrinology, and respiration. Prereq: Fish 411 and perm.

Fish **ID512** **Aquatic Pollution Ecology** (3 cr). Alt/yrs. Principles and working examples of the ecology of polluted aquatic stream and lake habitats. Two 1-day field trips. Prereq: Fish 415 or perm.

Fish **514** **Fish Population Ecology** (2 cr). Review of abiotic and biotic factors controlling or regulating fish population densities and critical review of relevant literature.

Fish **WS519** **Fish Genetics** (2 cr). WSU GenCB 516.

Fish **530** **Stream Ecology** (2 cr). Alt/yrs. Structure and function of running water ecosystems; principles of population, community, and ecosystem ecology in streams and rivers.

Fish **589** **Water Resources Seminar** (1 cr). See Intr 589.

Fish **597** (s) **Practicum** (cr arr). Prereq: perm.

Fish **598** (s) **Internship** (cr arr). Prereq: perm.

Fish **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Fish **600** **Doctoral Research and Dissertation** (cr arr). Prereq: admission to the doctoral program in "forestry, wildlife and range sciences" and perm of dept.

Food Science and Toxicology

Jerry H. Exon, Head, Dept. of Food Science and Toxicology (22 Glen C. Holm Bldg. 83844-2201; phone 208/885-7081).

FST **101** **Introduction to Food Science** (3 cr). Introduction to chemistry, microbiology, and processing of food and food products; concepts of food preservation, packaging and marketing of foods; food additives and regulations; world food problems.

FST **ID&WS201** **Food Quality Assurance** (3 cr). WSU FSHN 200. Regulations that govern safety and wholesomeness of processed food products; microbiological and chemical hazards and physical factors that influence food quality; methods for analyzing microbiological, chemical, physical, and sensory qualities of food products and packaging; design of programs, problem management associated with food quality assurance.

FST **204** (s) **Special Topics** (cr arr). Prereq: perm.

FST **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

FST **ID210** **The Science of Viticulture and Enology** (2 cr). WSU FSHN 210. Aspects of grapes and wines including fermentation and processing, physiology of alcohol and other components, history, general survey of wines of the U.S. and the world, and evaluation methods; guest lecturers from the industry.

FST **263** **Introduction to Meat Science** (3 cr). See AVS 263.

FST **264** **Consumer Meats** (3 cr). See AVS 264.

FST **WS301** **Dairy Products** (3 cr). WSU FSHN 301. Specialized techniques and practices of dairy product manufacturing and marketing. Field trip. Prereq: MMBB 250, Chem 275, 276.

FST **WS302** **Meat and Poultry Products** (3 cr). WSU FSHN 302. Specialized techniques and practices of meat, poultry, and egg processing and marketing. Prereq: MMBB 250, Chem 275, 276.

FST **WS303** **Food Processing** (3 cr). WSU FSHN 303. Specialized techniques and practices of fruit and vegetable processing and marketing. Field trip. Prereq: MMBB 250, Chem 275, 276.

FST **WS304** **Cereal Products** (2 cr). WSU FSHN 304. Technical principles related to production and commercial processing of legume and cereal foods. Field trip reqd. Prereq: Chem 275, 276.

FST **400** (s) **Seminar** (cr arr). Prereq: perm.

FST **404** (s) **Special Topics** (cr arr). Prereq: perm.

FST **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

FST **WS407** **Food Product Development** (2 cr). WSU FSHN 404. Development of food products from concept to marketplace.

FST **ID416** **Food Microbiology** (2 cr). See MMBB 416.

FST **ID417** **Food Microbiology Laboratory** (2 cr). See MMBB 417.

FST **ID&WS422** **Food Quality Evaluation** (3 cr). WSU FSHN 422. Techniques in evaluation of quality of foods by sensory and instrumental methods.

FST **J427/J527** **Transmission Electron Microscopy** (3 cr). Discussion and application of basic skills reqd in use of transmission electron microscope, including simple specimen preparation techniques and photographic darkroom skills. Additional projects/assignments reqd for grad cr.

FST **ID&WS433** **Agricultural Processing Systems** (3 cr). See ASM 433.

FST **WS434** **Food Engineering Laboratory** (1 cr). WSU FSHN 434. Experiments in heat transfer, fluid flow, and dehydration.

FST **J440/J540** **Biological Electron Microscopy** (4 cr). Application of biological specimen preparation techniques in EM, including ultramicrotomy and use of specific stains. Registration for FST 540 requires completion of a written report. Prereq: FST J427/J527.

FST **J441/J541** **Scanning Electron Microscopy** (3 cr). Theory and principles of scanning electron microscopy as investigative tool; includes operation and maintenance of electron microscope, specimen preparation, and photographic darkroom procedure. Students registering for FST 541 are reqd to complete an additional research paper.

FST **WS-J450/WS-J550** **Food Fermentations** (3 cr). WSU FSHN 450/550. Alt/yrs. Cr not granted for both FST 450 and 550. Principles and procedures of fermentation of fruits and vegetables, meat products, and dairy products. Additional projects/assignments reqd for grad cr. Prereq: MMBB 250, Chem 275, 276.

FST **ID&WS460** **Food Chemistry** (3 cr). WSU FSHN 460. Fundamentals of food chemistry; composition of foods and the changes that occur during processing. Prereq: Chem 275, 276, MMBB 380.

FST **ID&WS461** **Food Chemistry Laboratory** (1 cr). WSU FSHN 461. Experiments related to properties, reactions, and interactions of chemical components of foods.

FST **WS462** **Food Analysis** (4 cr). WSU FSHN 462. Introductory food analysis; methods common to many food commodities. Prereq: Chem 275, 276, MMBB 250.

FST **WS-J470/WS-J570** **Advanced Food Technology** (3 cr). WSU FSHN 470/570. Cr not granted for both FST 470 and 570. Physical principles of food preservation and recent advances in food technology. Additional projects/assignments reqd for grad cr. Prereq: FST 416, 433 or perm.

FST **474** **Food Research and Development** (3 cr). See FCS 474.

FST **WS-J487/WS-J587** **Food Process Engineering Design** (3 cr). WSU BSysE 482/582. Fundamentals for design of food processing systems; food properties; thermal and physical processes. Prereq: FST 433.

FST **499** (s) **Directed Study** (cr arr). Prereq: perm.

FST **500** **Master's Research and Thesis** (cr arr).

FST **501** (s) **Seminar** (cr arr). Prereq: perm.

FST **502** (s) **Directed Study** (cr arr). Prereq: perm.

FST **503** (s) **Workshop** (cr arr). Prereq: perm.

FST **504** (s) **Special Topics** (cr arr). Prereq: perm.

FST **WS505** **Principles of Molecular Toxicology** (3 cr). WSU P/T 505. Principles of modern, predictive toxicology; actions, biological disposition and environmental fate of natural products, drugs, pesticides, food chemicals, and pollutants.

FST **WS506** **Principles of Pharmacology I** (3 cr). WSU P/T 506. Fundamental mechanisms of drug action and the factors that modify drug responses; autonomic and cardiovascular pharmacology.

FST **WS507** **Principles of Pharmacology II** (3 cr). WSU P/T 507.

FST **WS508** **Philosophy of Pharmacology and Toxicology** (1 cr). WSU P/T 501.

FST **WS510** **Advanced Food Chemistry** (3 cr). WSU FSHN 510. Alt/yrs. Chemical, physical, and toxicological properties of water, vitamins, pigments, synthetic colors, minerals, miscellaneous food additives, and natural toxicants. Prereq: MMBB 380.

FST **WS511** (s) **Topics in Toxicology** (1-4 cr). WSU P/T 511. Topics of current interest in toxicology and closely related areas.

FST **WS512** **Food Lipids and Carbohydrates** (3 cr). WSU FSHN 511. Alt/yrs. Occurrence, structure, properties and functions of carbohydrates, lipids and proteins in foods. Prereq: MMBB 380.

FST **WS513** **Food Proteins and Enzymes** (2 cr). WSU FSHN 512. Chemistry/biochemistry of proteins/enzymes applied to food research and industry; protein functionality/enzyme technology application to food industry.

FST **ID522 Advanced Sensory Evaluation** (3 cr). Advanced studies of psychological testing, sensory evaluation, and instrumental analysis, with emphasis on signal-detection and time-intensity methodologies; salivary effects; basic principles of color, texture, and flavor, and their respective evaluation by sensory and instrumental methods; and experimental design and multivariate statistical correlation procedures. Two lec and 3 hrs of lab a wk.

FST **WS525 Instrumental Methods in Pharmacology/Toxicology** (3 cr). WSU P/T 525. Alt/yrs. Procedures and instruments used in analytical and separation methods.

FST **527 Transmission Electron Microscopy** (3 cr). See FST J427/J527.

FST **WS532 Metabolism of Drugs and Toxins** (2 cr). WSU P/T 532. Alt/yrs. Pathways, enzymology and mechanisms of metabolism of drugs, environmental contaminants and other xenobiotics; pharmacological and toxicological impact of metabolism.

FST **540 Biological Electron Microscopy** (4 cr). See FST J440/J540.

FST **541 Scanning Electron Microscopy** (3 cr). See FST J441/J541.

FST **WS545 Toxicology of Pesticides** (3 cr). WSU Entom 545. Alt/yrs. General principles of pesticide toxicology; classification, mode of action and metabolism of each group of farm pesticide chemicals.

FST **WS550 Food Fermentations** (3 cr). See FST J450/J550.

FST **WS565 Fundamentals of Oncology** (3 cr). WSU P/T 572. Alt/yrs. Thorough overview of cancer biology encompassing basic cellular and molecular mechanisms of carcinogenesis and tumor progression, treatment and prevention.

FST **WS566 Molecular Mechanisms of Target Organ Toxicity** (2 cr). WSU P/T 566. Alt/yrs. Chemical toxicity manifested in damage to structure and function of liver, kidney, lung, nerve, cardiac, and skin tissue.

FST **WS570 Advanced Food Technology** (3 cr). See FST J470/J570.

FST **WS587 Food Process Engineering Design** (3 cr). See FST J487/J587.

FST **WS597 Pharmacology and Toxicology Seminar** (1 cr, max 4). WSU P/T 597. Graded P/F.

Foreign Languages and Literatures

James R. Reece, Chair, Dept. of Foreign Languages and Literatures (302 Admin. Bldg. 83844-3174; phone 208/885-6179; fax 208/885-8964; email forlang@uidaho.edu).

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: Chin 101-102; Fren 101-102 (or 104)-201-202; Germ 101-102-201-202; Grek 341-342-441-442; Japn 101-102-203-304; Latn 101-102; Russ 101-102-203-304; Span 101-102-201-202. In appropriate cases, with the approval of the chair of the Department of Foreign Languages and Literatures, any one of the following courses may be considered the terminal course in the vertical sequence for advanced placement: Fren 301-302; Germ 321-322; Span 381-382. Any upper-division Latin literature course may be used to receive advanced placement credit for Latn 101-102.

PREREQUISITE: Each successive course in the vertical sequences of the elementary and intermediate language courses listed above has as prerequisite the successful completion of the previous course in the sequence with a grade of C or better. Prerequisite for upper-division language courses is the appropriate intermediate course with a grade of C or better or equivalent.

COURSES OFFERED IN ENGLISH

No knowledge of foreign language required. May be used to fulfill the L & S humanities requirement.

FLEN **200** (s) **Seminar** (cr arr). Prereq: perm.

FLEN **204** (s) **Special Topics** (cr arr). Prereq: perm.

FLEN **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

FLEN **211 Classical Mythology (Gods)** (2 cr). Intro to classical myths and legends and their survival in western literature and art.

FLEN **212 Classical Mythology (Heroes)** (2 cr). Intro to classical myths and legends and their survival in western literature and art.

FLEN **243 English Word Origins** (2 cr). Fundamental Latin and Greek words used in the humanities and natural science; emphasis on terminology of fields in which students are interested; knowledge of Greek or Latin is not required.

FLEN **299** (s) **Directed Study** (cr arr). Prereq: perm.

FLEN **307 The European Union** (3 cr). A cross-cultural examination of the European Union, its history, evolution, and current functioning; social, cultural, and political differences among union partners; economic structure and demographics; business culture.

FLEN **313-314 Modern French Literature in Translation** (3 cr). A maximum of 3 cr of FLEN 313-314 may be counted toward a major in French. Major modern French authors in English translation; knowledge of French is not required.

FLEN **323-324 German Literature in Translation** (3 cr). A maximum of 3 cr in FLEN 323-324 may be counted toward a major in German. Major German-language authors in English translation; knowledge of German is not required.

FLEN **ID363-ID364 Literature of Ancient Greece and Rome** (3 cr). WSU Clas 363/64. FLEN 363: Greece. FLEN 364: Rome. Ancient culture primarily through writings of Greek and Roman poets, playwrights, thinkers, and historians in English translation; may take the form of a survey or center on a theme or genre; lec, disc, and writing.

FLEN **391 Hispanic Film** (3 cr). Open to all students. Genre, structure, and style of representative fiction and nonfiction films of Spain and Latin America. May not be taken concurrently with Span 391.

FLEN **393 Spanish Literature in Translation** (3 cr). A maximum of 3 cr in FLEN 393 and 394 may be counted toward a major in Spanish. Major Spanish-language authors in English translation; knowledge of Spanish is not required.

FLEN **394 Latin American Literature in Translation** (3 cr). Alt/yrs. A maximum of 3 cr in FLEN 393 and 394 may be counted toward a major in Spanish. Major Spanish-language authors in English translation; knowledge of Spanish is not required.

FLEN **400** (s) **Seminar** (cr arr). Prereq: perm.

FLEN **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

FLEN **441 Ancient Greek Civilization** (3 cr). Survey of development of Greek civilization, BC 2000-BC 300.

FLEN **442 Civilization of Ancient Rome** (3 cr). Survey of development of Roman civilization, BC 800-AD 500.

FLEN **449** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

FLEN **496** (s) **Proseminar** (1-3 cr, max 12). May be graded P/F when grading system is uniform for all students in the class. Prereq: perm.

FLEN **499** (s) **Directed Study** (cr arr). Prereq: perm.

CHINESE

Chin **WS101 Chinese First Semester** (4 cr). WSU Chin 101. Satisfies core requirement J-3-a.

Chin **WS102 Chinese Second Semester** (4 cr). WSU Chin 102.

FRENCH

Fren **101-102 Elementary French I-II** (4 cr) (C, 101 only). Fren 101 satisfies core requirement J-3-a. Credit not given for both Fren 101-102 and 104. Pronunciation, vocabulary, reading, spoken French, and functional grammar. Students with two or more years of high school French may not enroll in Fren 101, but may earn credit for Fren 101 by advanced placement, i.e., by successfully completing a higher vertically related course.

Fren **103** (s) **French Language Lab** (1 cr, max 4). Practice in listening comprehension, pronunciation, and grammatical structures. Graded P/F. Coreq: elementary or intermediate French (Fren 101-102, 104, 201-202).

Fren **104 Elementary French Reviewed** (4 cr). Not open for credit to students who have taken FL/FR 101 or equivalent in college. Review of subject matter covered in Fren 101-102. Prereq: two years of high school French or perm.

Fren **200** (s) **Seminar** (cr arr). Prereq: perm.

Fren **201-202 Intermediate French I-II** (4 cr). Reading, grammar review, speaking, and writing. Prereq: Fren 102.

Fren **204** (s) **Special Topics** (cr arr). Prereq: perm.

Fren **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Fren **299** (s) **Directed Study** (cr arr). Prereq: perm.

Fren **301 Advanced French Grammar** (3 cr).

Fren **302 Advanced French Writing Skills** (3 cr). Recommended for students who wish to continue in upper-division French courses.

Fren **303 French Civilization: Institutions** (3 cr).

Fren **304 French Culture** (3 cr).

Fren **305 Survey of French Fiction and Drama** (3 cr). Middle Ages to the present.

Fren **306 Survey of French Essay and Poetry** (3 cr). Middle Ages to the present.

Fren **400** (s) **Seminar** (cr arr). Prereq: perm.

Fren **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Fren **407** (s) **French Literary Themes** (3 cr, max 9). Prereq: Fren 305 or 306.

Fren **409 French Phonetics** (1-3 cr, max 6). Phonetic description and phonemic analysis; stress, its nature and place; intonation patterns in conversation; reading of prose and poetry.

Fren **411 French Conversation** (3 cr).

Fren **415** (s) **Special Topics** (cr arr).

Fren **416 French Business** (3 cr).

Fren **449** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

Fren **496** (s) **Proseminar** (1-3 cr, max 12). May be graded P/F when grading system is uniform for all students in the class. Prereq: perm.

Fren **499** (s) **Directed Study** (cr arr). Prereq: perm.

Fren **501** (s) **Seminar** (cr arr). Prereq: perm.

Fren **502** (s) **Directed Study** (cr arr). Prereq: perm.

Fren **504** (s) **Special Topics** (cr arr). Prereq: perm.

GERMAN

Germ **101-102 Elementary German I-II** (4 cr) (FLGN 121-122). Germ 101 satisfies core requirement J-3-a. Pronunciation, vocabulary, reading, spoken German, and functional grammar.

Germ **103** (s) **German Language Lab** (1 cr, max 4) (FLGN 123). Practice in listening comprehension and conversational skills. Graded P/F. Coreq: elementary or intermediate German (Germ 101-102, 201-202).

Germ **200** (s) **Seminar** (cr arr). Prereq: perm.

Germ **201-202 Intermediate German I-II** (4 cr) (FLGN 221-222). Review and practice of basic language skills; increased emphasis on reading and free discussion. Appropriate starting point for students with two or three yrs of high school German. Prereq: Germ 102 or equiv.

Germ **204** (s) **Special Topics** (cr arr). Prereq: perm.

Germ **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Germ **299** (s) **Directed Study** (cr arr). Prereq: perm.

Germ **321 German Conversation** (3 cr). Emphasis on developing proficiency in speaking and writing; discussion on topics of cultural interest. Prereq: Germ 202.

Germ **322 German Grammar and Composition** (3 cr). Emphasis on writing skills and various kinds of writing; selective review of German grammar and usage. Prereq: Germ 202.

Germ **325-326 German Culture and Institutions** (3 cr). May be taken in either order; survey of German cultural heritage from the earliest times to the present. Germ 325: development in the arts, philosophy, science, political and social thought through end of 19th century; history and political development of German nation. Germ 326: German society and political culture in 20th century; contemporary social and political institutions. Prereq or coreq: Germ 202.

Germ **327-328 Survey of German Literature** (3 cr). May be taken in either order; intro course in study of German literature. Germ 327: chronological survey of literature from earliest times to beginning of 19th century. Germ 328: representative works of modern literature from 19th and 20th centuries. Prereq: Germ 202.

Germ **329** (s) **German Language Lab** (1 cr, max 2). Advanced aural comprehension; everyday conversational situations, radio and TV programming. Graded P/F. Prereq: perm.

Germ **400** (s) **Seminar** (cr arr). Prereq: perm.

Germ **404** (s) **Special Topics** (cr arr). Prereq: perm.

Germ **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Germ **420** (s) **Readings in German Literature** (3 cr, max 9). For advanced students; focus on literary period, theme, genre, or work of a single author. Prereq: Germ 327 or 328, or perm.

Germ **449** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

Germ **496** (s) **Proseminar** (1-3 cr, max 12). May be graded P/F when grading system is uniform for all students in the class. Prereq: perm.

Germ **499** (s) **Directed Study** (cr arr). Prereq: perm.

Germ **501** (s) **Seminar** (cr arr). Prereq: perm.

Germ **502** (s) **Directed Study** (cr arr). Prereq: perm.

Germ **504** (s) **Special Topics** (cr arr). Prereq: perm.

ANCIENT GREEK

Grek **200** (s) **Seminar** (cr arr). Prereq: perm.

Grek **204** (s) **Special Topics** (cr arr). Prereq: perm.

Grek **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Grek **299** (s) **Directed Study** (cr arr). Prereq: perm.

Grek **ID341-ID342 Elementary Greek** (4 cr). WSU Clas 341-342. Grek 341 satisfies core requirement J-3-a. Pronunciation, vocabulary, reading, and functional grammar.

Grek **ID349** (s) **Greek Language Lab** (1 cr, max arr). WSU Clas 349. A maximum of two credits may be earned in basic skills. Graded P/F. Prereq: perm.

Grek **400** (s) **Seminar** (cr arr). Prereq: perm.

Grek **404** (s) **Special Topics** (cr arr). Prereq: perm.

Grek **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Grek **ID441-ID442** (s) **Intermediate Greek** (4 cr, max arr). WSU Clas 441-442. Readings in classical Greek prose and poetry.

Grek **449** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

Grek **496** (s) **Proseminar** (1-3 cr, max 12). May be graded P/F when grading system is uniform for all students in the class. Prereq: perm.

Grek **499** (s) **Directed Study** (cr arr). Prereq: perm.

JAPANESE

Japn **ID&WS101-ID&WS102 Elementary Japanese I-II** (4 cr). WSU Japn 101-102. Japn 101 satisfies core requirement J-3-a.

Japn **103** (s) **Japanese Language Lab** (1 cr, max 4). Practice in listening comprehension and conversational skills. Graded P/F. Coreq: Japn 101, 102, 203, or 304.

Japn **ID&WS201 Intermediate Japanese I** (4 cr) (FLJP 203). WSU Japn 203.

Japn **ID&WS202 Intermediate Japanese II** (4 cr) (FLJP 304). WSU Japn 304.

LATIN

Latn **101-102 Elementary Latin I-II** (4 cr) (FLLA 161-162). Latn 161 satisfies core requirement J-3-a. Pronunciation, vocabulary, reading, composition, and functional grammar.

Latn **103 Latin Language Lab** (1 cr, max 4). Elementary- and intermediate-level skills. Graded P/F. Prereq: perm.

Latn **200** (s) **Seminar** (cr arr). Prereq: perm.

Latn **204** (s) **Special Topics** (cr arr). Prereq: perm.

Latn **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Latn **299** (s) **Directed Study** (cr arr). Prereq: perm.

Latn **ID365-ID366 Survey of Latin Literature** (3 cr). WSU Clas 365-366. From early Latin to the Middle Ages.

Latn **ID369** (s) **Latin Language Lab** (1 cr, max arr). WSU Clas 369. Advanced-level expressive skills. Graded P/F. Prereq: perm.

Latn **400** (s) **Seminar** (cr arr). Prereq: perm.

Latn **404** (s) **Special Topics** (cr arr). Prereq: perm.

Latn **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Latn **449** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

Latn **ID461-ID462** (s) **Latin Literature of the Empire** (3 cr, max 9). WSU Clas 461-462.

Latn **ID463-ID464** (s) **Latin Literature of the Republic** (3 cr, max 9). WSU Clas 463-464.

Latn **496** (s) **Proseminar** (1-3 cr, max 12). May be graded P/F when grading system is uniform for all students in the class. Prereq: perm.

Latn **499** (s) **Directed Study** (cr arr). Prereq: perm.

RUSSIAN

Russ **WS101 First Semester Russian** (4 cr). WSU Rus 101. Satisfies core requirement J-3-a.

Russ **WS102 Second Semester Russian** (4 cr). WSU Rus 102.

Russ **WS203 Third Semester Russian** (4 cr). WSU Rus 203.

Russ **WS304 Intermediate Russian** (4 cr). WSU Rus 304.

Russ **WS305 Russian Conversation** (1 cr). WSU Rus 305.

SPANISH

Span **101-102 Elementary Spanish I-II** (4 cr) (FLSP 181-182). Span 101 satisfies core requirement J-3-a. Pronunciation, vocabulary, reading, spoken Spanish, and functional grammar.

Span **103** (s) **Spanish Language Lab** (1 cr, max 4) (FLSP 183). Practice in listening comprehension and conversational skills. Graded P/F. Coreq: elementary or intermediate Spanish (Span 101-102 or 201-202).

Span **200** (s) **Seminar** (cr arr). Prereq: perm.

Span **201-202 Intermediate Spanish I-II** (4 cr) (FLSP 281-282). Reading, grammar review, speaking, and writing. Prereq: Span 102.

Span **204** (s) **Special Topics** (cr arr). Prereq: perm.

Span **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Span **299** (s) **Directed Study** (cr arr). Prereq: perm.

Span **381-382 Advanced Spanish Grammar and Composition** (3 cr). Recommended for prospective teachers of Spanish. Prereq for Span 382: Span 381.

Span **383-384 Hispanic Culture and Institutions** (3 cr). Topics in Spanish and Latin American civilizations. Prereq: Span 381 or 382, or perm.

Span **385-386 Survey of Spanish Literature** (3 cr). Prereq: Span 381 or 382, or perm.

Span **387-388 Survey of Spanish-American Literature** (3 cr). Prereq: Span 381 or 382, or perm.

Span **389 Spanish Language Lab** (1 cr, max arr). Advanced conversational skills. Graded P/F. Prereq: perm.

Span **390 Spanish Phonetics** (3 cr). Phonetic description and phonemic analysis; stress, its nature and place; intonation patterns in conversation; transcription of prose and poetry. Prereq: Span 202 or equiv.

Span **ID391 Hispanic Film** (3 cr). WSU Span 391. Genre, structure, and style of representative fiction and nonfiction films of Spain and Latin America. May be taken concurrently with Span 202 with perm of instructor; may not be taken concurrently with FLEN 391.

Span **393 Spanish Conversation** (3 cr). Further development of speaking skills for advanced students; discussion on topics of current cultural interest. Prereq: Span 381 or perm.

Span **400** (s) **Seminar** (cr arr). Prereq: Span 381 or 382, or perm.

Span **404** (s) **Special Topics** (cr arr). Prereq: Span 381 or 382, or perm.

Span **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Span **449** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

Span **493 Spanish for Teachers** (2 cr). Language and culture; pronunciation and diction.

Span **496** (s) **Proseminar** (1-3 cr, max 12). May be graded P/F when grading system is uniform for all students in the class. Prereq: perm.

Span **499** (s) **Directed Study** (cr arr). Prereq: perm.

Span **501** (s) **Seminar** (cr arr). Prereq: perm.

Span **502** (s) **Directed Study** (cr arr). Prereq: perm.

Span **504** (s) **Special Topics** (cr arr). Prereq: perm.

GENERAL COURSES

FL **200** (s) **Seminar** (cr arr). Prereq: perm.

FL **204** (s) **Special Topics** (cr arr). Prereq: perm.

FL **299** (s) **Directed Study** (cr arr). Prereq: perm.

FL **400** (s) **Seminar** (cr arr). Prereq: perm.

FL **404** (s) **Special Topics** (cr arr). Prereq: perm.

FL **499** (s) **Directed Study** (cr arr). Prereq: perm.

Forest Products

Leonard R. Johnson, Head, Dept. of Forest Products (102 FWR Bldg. 83844-1132; phone 208/885-6126).

PREREQUISITE: Courses in this subject field above 299 are not open to any undergraduate student who is on academic probation.

Note: Courses numbered ForP 460-472 (except 470) are taught at the University of Minnesota. UM is on the quarter system; however, credits are listed in this catalog in equivalent semester hours.

ForP **WS201 Introduction to Construction** (2 cr). WSU Cst M 201.

ForP **203** (s) **Workshop** (cr arr). Prereq: perm.

ForP **204** (s) **Special Topics** (cr arr). Prereq: perm.

ForP **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

ForP **230 Forest Land Measurements I** (1 cr). Distance, precision, and allowable error; slope and horizontal distance concepts; field book; pacing, chaining, and taping; direction measurements with hand-held and staff compasses; declination and area calculation; traversing and traverse closure. Two lec and one 3-hr lab a wk for 5 wks. Prereq: Math 143 or equiv.

ForP **231 Forest Land Measurements II** (1 cr). Vertical distance concepts; traverse closure software; contour mapping and mapping software; triangulation applications; public land surveying and the application and use of levels, theodolites, transits, and other tripod instruments. Two lec and one 3-hr lab a wk for 5 wks. Prereq: ForP 230.

ForP **232 Forest Land Measurements III** (1 cr). Advanced use and application of instruments including electronic distance measurement and global positioning systems; stadia; curve geometry and layout; coordinate system; road plan and profile. Two lec and one 3-hr lab a wk for 5 wks. Prereq: ForP 231.

ForP **250 Principles of Forest Products** (2 cr). Wood in our society, effect of silviculture on wood properties, harvesting and transportation, wood manufacturing technologies, wood products and applications, and future directions in the wood industry. One or two optional half-day field trips.

ForP **ID277 Wood Structure and Identification** (3 cr). WSU NATRS 321. Anatomy and chemical composition of commercial wood species; gross and minute structural characteristics of wood leading to identification.

ForP **299** (s) **Directed Study** (cr arr). Prereq: perm.

ForP **301 Wildland Field Ecology I** (1 cr). Introduction to field ecology; the rationale for and importance of studying terrestrial, aquatic, and human ecosystems; practical experience with tools and skills used to measure wildland ecosystem processes. One 5-hr lab a wk. Prereq or coreq: For/RRT/Soc 235 and For/Rnge/WLF 221.

ForP **302 Wildland Field Ecology II** (2 cr). Field studies of ecological and socio-political processes in terrestrial, aquatic, and human ecosystems at individual, population, community, landscape, regional, and global scales; application of ecological principles to integrated natural resource management. Two weeks all-day lec/lab immediately following spring semester; overnight field excursions required. Prereq: For/ForP/Rnge/WLF/RRT/Fish 301.

ForP **336 Introduction to the Pulp and Paper Industry** (1 cr). Chip supply, quality, and handling; pulping and bleaching; pollution abatement; papermaking; and paper characteristics and utilization. Three half-day field trips.

ForP **337 Physical and Mechanical Properties of Wood** (3 cr). Properties of wood as they relate to physical behavior and product application; other related topics include biodeterioration, machining and adhesive technology, and strength considerations. Prereq: ForP 277 or perm.

ForP **365 Wood Building Technology** (3 cr). Basic structural design including elementary statics and principles and technology of wood structural design. Prereq: Phys 100, Phys 111 or perm.

ForP **397-398 Renewable Natural Resources Internship I-II** (cr arr). Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F. Prereq: perm of dept.

ForP **400** (s) **Seminar** (cr arr). Prereq: perm.

ForP **401** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

ForP **403** (s) **Workshop** (cr arr). Prereq: perm.

ForP **404** (s) **Special Topics** (cr arr). Prereq: perm.

ForP **405** (s) **Professional Development** (cr arr). Cr earned in this course will not be accepted toward grad degree programs. Prereq: perm.

ForP **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

ForP **420 Pulp and Paper Technology** (3 cr). Technological overview of chemical and physical processes involved in conversion of wood into paper. Two or three optional half-day field trips. Prereq: organic chemistry or perm.

ForP **WS425 Forest Products Marketing** (2 cr). WSU NATRS 420/520. Alt/yrs. Domestic and international markets for forest products; overview of forest products market research marketing techniques; accessing and developing forest products markets. Prereq: ForP 250.

ForP **426 Quality Control in Wood Products Manufacture** (2 cr). Quality control in the wood products industry; statistical process control in wood products processing; field and mill applications of forest products measurement tools and diagnostic software related to log breakdown, lumber recovery, lumber size variability, and green lumber target sizes. Two days of field trips. Prereq: Stat 251, ForP 277.

ForP **ID430 Forest Engineering and Harvesting** (3 cr). WSU NATRS 320. Survey of logging equipment capabilities; intro to cable logging systems, road layout, and design; cost analysis of logging systems; development of road and logging plans. Three days of field trips. Prereq: ForP 230 or perm; CS 105 or equiv.

ForP **431 Production and Cost Control in Forest Industry** (3 cr). Alt/yrs. Intro to production planning and cost control for timber harvesting and forest products processing operations; development and application of machine rates and system production rates; breakeven analysis; machine replacement; cash flow in investment decisions; use of microcomputers in analysis. Prereq: ForP 250 or equivalent or perm.

ForP **ID432 Low Volume Forest Roads** (3 cr). WSU NATRS 432. Road classification; design of forest roads; construction techniques; costing, environmental considerations, design project. Three days of field trips. Coreq: ForP 430.

ForP **ID433 Forest Tractor System Analysis** (3 cr). WSU NATRS 433. Planning, layout, and cost analysis of forest tractor systems, production estimating, machine capabilities, and options; layout project. Three days of field trips. Prereq: ForP 430 or equiv.

ForP **ID434 Cable Systems Analysis** (3 cr). WSU NATRS 434. Alt/yrs. Layout, planning, and design for cable logging systems; analysis of forces involved in cable logging; crew and terrain requirements; layout and design project; cost and equipment analysis. Three 1-day field trips. Prereq: ForP 430 or equiv.

ForP **435 Wood-Moisture Relationships and Drying** (3 cr). Alt/yrs. Wood moisture content, shrinking and swelling, dimensional stabilization; theory and practice of drying lumber, veneer, particles, and fibers. Two to three half-day field trips. Prereq: ForP 277, 337 or perm.

ForP **436 Wood Composites** (3 cr). Alt/yrs. Raw material, processes, properties, and markets for a number of wood composites made of particles and fibers. One full-day field trip. Prereq: ForP 277.

ForP **437 Wood as a Structural Material** (2 cr). Applications of mechanical behavior to wood and wood composites; structural consideration and computer analysis of wood materials, including engineered products, panels, trusses. Prereq: ForP 337 or 365.

ForP **438 Wood Chemistry** (3 cr). Alt/yrs. Aspects of wood chemistry in relation to its application, including utilization of wood, wood residues, and pulping by-products; pulping chemistry, pulp bleaching, and cellulose derivatives. One or two optional half-day field trips. Prereq: organic chemistry.

ForP **440 Topics in Wood Energy** (1 cr). Alt/yrs. Status and potential of wood as renewable energy resource; wood energy generating technologies used in the forest products industry and the residential home; environmental aspects of wood utilization for energy. Offered as accelerated course.

ForP **444 Lumber Manufacturing** (2 cr). Raw materials, production methods, and product specifications for sawn wood products; machinery, plant layout, process control, and systems analysis; sawmill tours. One lec and 5 hrs of lab a wk.

ForP **450 Wood Deterioration and Preservation** (2 cr). Thermal, biotic, and abiotic agents that cause wood deterioration; biological control methods; design considerations; wood preservatives and preservative systems; treatability of wood; treatment mechanics; pollution control systems; preservative effectiveness; standards; environmental concerns and law. Prereq: ForP 277 or perm.

ForP **460 Wood Industry Tours** (1.3 cr; see headnote). Visits to a number of firms involved with various facets of forest products industry.

ForP **461 Wood Fluid Relationships** (2 cr; see headnote). Moisture in wood and its relationship to density and specific gravity, shrinking and swelling, electrical properties, strength properties, thermoconductivity, sorption isotherms, dimensional stabilization, permeability and diffusion.

ForP **462 Analysis of Production Systems** (2 cr; see headnote). Engineering and economic analysis of manufacturing and distribution systems for wood-based products; material balances, equipment selection, economic analysis, and presentation techniques.

ForP **463 Pulp and Paper Process Lab** (2 cr; see headnote). Chemical and mechanical pulping, pulp preparation, secondary fiber, de-inking, wet end additives; lab problems and exercises supplemented by lec. One lec and one hr of lab a wk.

ForP **464 Pulp and Paper Process Calculations** (2.7 cr; see headnote). Chemical and physical process calculations; steady and unsteady state material and energy balances applied to pulping and papermaking processes.

ForP **465 Pulp and Paper Process Operations** (2.7 cr; see headnote). Application of principles of momentum, heat, and mass transfer to unit operations in pulp and paper industry; fluid transport; filtration; sheet forming, sedimentation, heat exchange, evaporation, gas absorption and stripping; distillation, leaching extraction, crystallization, humidification, and drying.

ForP **466 Paper Engineering Lab** (1.3 cr; see headnote). Experiments designed to illustrate principles of momentum, heat, and mass transfer using the pilot-plant paper machine and coater.

ForP **467 Coated Product Development** (1.3 cr; see headnote). Coating process and products (primarily paper); theory, techniques, and procedures for formulating and applying coatings; properties and uses of coated products.

ForP **469 Surface and Colloid Chemistry of Papermaking** (2 cr; see headnote). Principles of surface and colloid chemistry applied to basic problems in pulp and paper manufacturing operations and products uses.

ForP **470 Interdisciplinary Natural Resource Planning** (3 cr). Land use planning and decision-making theories, legislation and techniques applied to natural resource case studies from public and private sector, including impact assessment, creation and valuation of alternatives, and public involvement. Two hrs of lec, 3 hrs of lab, and 1 hr of recitation a wk; one 1-day field trip. Prereq: senior standing; For/RRT/Soc 235; For/Rnge/WLF 221; For/Rnge/ForP/RRT/WLF/Fish 302; and four of the following: ForP 250, Rnge 251, For 270, WLF 290, Fish 290, RRT 287.

ForP **471 Pulp and Paper Process Dynamics and Control** (2 cr; see headnote). Theory and practice of process control in the pulp and paper industry: sensors, control equipment and algorithms, final cost elements; applications to industrial pulp and paper manufacturing, available hardware and software.

ForP **472 Biological and Environmental Science of Pulp and Paper** (2 cr; see headnote). Biology and chemistry of the pulp and paper processes are related to their impacts on the environment; treatment of process effluents and discharges, government regulations and industry compliance; theory, design, and operation of equipment for the treatment or prevention of environmental impact.

ForP **WS475 Estimating I** (3 cr). WSU Cst M 470.

ForP **J477/J577 Forest Products Business Management** (2 cr). Business plans for primary and secondary wood products processing businesses; preliminary technical and economic modeling of wood products manufacture; process systems analysis; commercial aspects, principles and terminology of the international timber trade. Graduate students in ForP 577 serve as group leaders on field projects. One field lab. Prereq: ForP 277, 444 or perm.

ForP **494 Models for Resource Decisions** (4 cr). See For 494.

ForP **496 Forest Products Seminar** (1 cr). Contemporary problems relevant to the manufacture of wood products.

ForP **499** (s) **Directed Study** (cr arr). For the individual student; conferences, library, field, or lab work. Prereq: sr standing, GPA 2.5, or perm.

ForP **500 Master's Research and Thesis** (cr arr).

ForP **501** (s) **Seminar** (cr arr). Major philosophy, management, and research problems of forest products industries; presentation of individual studies on assigned topics. Prereq: perm.

ForP **502** (s) **Directed Study** (cr arr). Prereq: perm.

ForP **503** (s) **Workshop** (cr arr). Selected topics in the conservation and management of natural resources. Prereq: perm.

ForP **504** (s) **Special Topics** (cr arr). Prereq: perm.

ForP **505** (s) **Professional Development** (cr arr). Cr earned in this course will not be accepted toward grad degree programs. Prereq: perm.

ForP **522 Advanced Forest Roads** (3 cr). Alt/yrs. Field layout of L-line in a forest setting; curves; slope staking and clearing limits; lab analysis of soil for subgrade; lab analysis of gravel for surfacing; stability analysis; costing of alternatives. Prereq: ForP 430.

ForP **534 Advanced Techniques of Timber Harvesting Analysis** (3 cr). Alt/yrs. Layout, planning, and cost analysis of timber harvesting systems using available computer analysis techniques and program; analysis of road cost and stability problems; cost control of logging operations. Two lec and one 3-hr lab a wk; three 1-day field trips. Prereq: ForP 430 or equivalent or perm.

ForP **WS535 Nondestructive Testing of Wood-Base Materials** (3 cr). WSU C E 536.

ForP **538 Advanced Wood Chemistry** (3 cr). Chemistry of woody tissues, including lignin, cellulose, hermicelluloses, and other polysaccharides. One or two optional half-day field trips. Prereq: organic chemistry or perm.

ForP **541 Issues in Renewable Natural Resource Industries** (2). Overview of renewable natural resource base industries with focus on forest products, range livestock, and tourism; review of historical and economic base for industries and current social, biological, and economic issues of importance.

ForP **545 Forest Ecosystem Management: Practices and Issues** (2 cr). Issues associated with integrated forest practices that can sustain forest products, restore damaged ecosystems, and maintain natural processes, including the silvicultural systems, harvest methods, and prescribed fire applications suitable for low-impact management in forest ecosystems.

ForP **550** (s) **Advanced Wood Technology** (1-3 cr, max 6). Advanced wood utilization and technology to include topics such as wood protection and preservation, advanced drying and moisture movement, gluing and finishing, engineered and composite wood products, energy; specific topics change yearly. May be repeated for cr to a maximum of 6 cr with perm and different topic. One to three days of field trips. Prereq: ForP 337 or perm.

ForP **577 Forest Products Business Management** (3 cr). See ForP J477/J577.

ForP **597** (s) **Practicum** (cr arr). Prereq: perm.

ForP **598** (s) **Internship** (cr arr). Prereq: perm.

ForP **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

ForP **600 Doctoral Research and Dissertation** (cr arr). Prereq: admission to the doctoral program in "forestry, wildlife and range sciences" and perm of dept.

Forest Resources

Jo Ellen Force, Interim Head, Dept. of Forest Resources (204 FWR Bldg. 83844-1133; phone 208/885-7952; e-mail fores@uidaho.edu).

PREREQUISITE: Courses in this subject field numbered above 299 are not open to any undergraduate student who is on academic probation.

For **102 Introduction to Forest Management** (1 cr). Intro to forestry, current management issues, timber and non-timber resources, educational and professional opportunities.

For **205 Wildland Resource Conservation** (3 cr). Not open to majors in the dept. Concepts of forest and rangeland ecology; major resources of wildlands, principles of conservation and management application to wildlands.

For **206 Wildland Resource Conservation Lab** (1 cr). Descriptive survey of renewable natural resources; emphasis on Idaho's flora and fauna. Two hrs of lab a wk; three days of field trips. Coreq: For 205.

For **208 Community and Urban Forestry** (2 cr). Community or urban environment as affected by its included forest; forest components, benefits, liabilities, values, ordinances, and issues; management by selection, design, planting, care, and maintenance.

For **221 Natural Resources Ecology** (3 cr). Principles of plant and animal ecology with emphasis on concepts applied in natural resources, including interactions between organisms and their physical environment, evolutionary processes, populations, communities, energy flow and ecosystems, and conservation biology. Recommended preparation: Biol 202 and 203. Prereq: Biol 100 or 201, or perm.

For **235 Society and Natural Resources** (3 cr). Same as RRT and Soc 235. The social sciences applied to natural resources management; relationship between natural resources and human socioeconomic systems; analysis of resource issues.

For **270 Principles of Forest Ecosystem Management** (2 cr). Forest resources, regions, and management objectives; silvicultural principles and practices employed in management of forest ecosystems; interrelations between uses of forest land. Two 1-day field trips.

For **274 Forest Measurement Techniques** (1-2 cr, max 2). Students who have completed For 375 may only receive 1 credit for section 1 of this course. Practical techniques in mapping and measuring forest land and in measuring and inventorying forest resources. Two hrs of lec and one 3-hr lab a wk for last 10 wks of semester. Prereq: course in trigonometry and college algebra.

For **294 Quantitative Resource Analysis** (3 cr). Application of mathematical and statistical concepts to resource management problems using PC-based computer skills: a programming language along with spreadsheet/database and statistical application programs. Two lec and one 2-hr lab a wk. Prereq: Math 160 or perm; prereq or coreq: Stat 251.

For **299** (s) **Directed Study** (cr arr). Prereq: perm.

For **301 Wildland Field Ecology I** (1 cr). Introduction to field ecology; rationale for and importance of studying terrestrial, aquatic, and human ecosystems; practical experience with tools and skills used to measure wildland ecosystem processes. One 5-hr lab a wk. Prereq or coreq: For/RRT/Soc 235 and For/Rnge/WLF 221.

For **302 Wildland Field Ecology II** (2 cr). Field studies of ecological and socio-political processes in terrestrial, aquatic, and human ecosystems at individual, population, community, landscape, regional, and global scales; application of ecological principles to integrated natural resource management. Two weeks of all-day lec/lab immediately following spring semester; overnight field excursions required. Prereq: For/ForP/Rnge/WLF/RRT/Fish 301.

For **320 Dendrology** (3 cr). Identification, classification, distribution, and associations of the important tree species of the U.S.; important regional shrubs. Two lec and two 2-hr labs a wk; two 1-day field trips. Prereq: general botany.

For **330 Forest Ecosystem Processes** (3 cr). Chemical, physical, and physiological processes that determine how trees and forests function; emphasis on carbon budgets, productivity, consequences of forest management, and global climate change. One field trip. Prereq: Soil 205 or perm.

For **361 Farm and Natural Resource Appraisal** (3 cr). See AgEc 361.

For **ID&WS374 Forest Mensuration** (3 cr). WSU NATRS 313. Principles of log, tree, and stand measurements; elementary sampling and inventory procedures; growth and yield. Three hrs of lec and one 1-hr recitation a wk. Prereq: For 274, 294; Stat 251; and Math 160 or 170.

For **375 Aerial Photo Interpretation of Renewable Natural Resources** (3 cr). Methods and techniques of obtaining quantitative and qualitative spatial information from aerial photographs, maps, and the Global Positioning System for input into geographic information systems and planning processes for natural resources land management. Two lec and one 2-hr lab a wk. Prereq: college algebra.

For **383 Economics for Natural Resource Managers** (3 cr). Same as AgEc 383. Role of economic forces in resource analysis and conservation; planning of forest resource use by the firm and society. Prereq: Econ 202; Math 160; For 235, or perm.

For **398** (s) **Renewable Natural Resources Internship** (cr arr). Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F. Prereq: perm of dept.

For **400** (s) **Seminar** (cr arr). Prereq: perm.

For **401** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

For **403** (s) **Workshop** (cr arr). Prereq: perm.

For **404** (s) **Special Topics** (cr arr). Prereq: perm.

For **405** (s) **Professional Development** (cr arr). Professional education and enrichment of forestry personnel. Credit earned in this course will not be accepted toward graduate degree programs but may be used for undergraduate programs. Prereq: perm.

For **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

For **J412/J512 Artificial Regeneration** (2 cr). Alt/yrs. Methods of cone collection, seed extraction, and storage; seedling procurement contracts; seedling handling and storage; planting contracts; regeneration surveys; plantation failure diagnosis. Cr earned in For 512 by preparation of paper on approved regeneration topic. One lec and one 3-hr lab a wk. Prereq: perm.

For **ID-J413/ID-J513 Forest Nursery Management** (2 cr). WSU NATRS 413/513. Alt/yrs. Forest nursery design considerations; seed processing and quality; nursery equipment and cultural practices; seedling quality. Cr earned in For 513 by preparation of paper on nursery design and growing regimes for assigned species. Two 1-day field trips.

For **WS415 Remote Sensing Applied to Terrain Evaluation** (3 cr). WSU Soils 474.

For **ID-J420/ID-J520 Tropical Dendrology/Ecology** (3 cr). WSU NATRS 422/522. Alt/yrs. Distribution, physiognomy, and climate of world tropical and subtropical vegetation types; identification, ecology, and uses of major pantropical trees and associated vegetation. Cr earned in For 520 by preparation of paper on a specific genus or species. Two lec and 4 hrs of lab a wk. Prereq: perm.

For **423 Forest Community Ecology** (1 cr). Principles of synecology related to vegetation classification and interpretation of structural and compositional change in communities following disturbance; practice in plant association/habitat type delineation as applied in western U.S. Accelerated first nine wks; eight lec periods and four 8-hr field trips. Prereq: For 221, Bot 241.

For **424 Silviculture** (3 cr). Methods and techniques for manipulation of forest ecosystems to meet management objectives; artificial and natural regeneration, site preparation; silviculture and the gene pool, intermediate stand tending; forest health, landscape silviculture, and prescription writing. Two lec and one 4-hr lab a wk; two or three 1-day field trips. Prereq: For 270, senior standing.

For **426 Wildland Fire Management and Ecology** (3 cr). Integrated fire-related biological, ecological, physical, and economic information for land managers; autecology and synecology of plant and animal species in wildlands; natural role of fire; fire as a management tool; application to current issues. Two days of field trips. Prereq: For/Rnge/WLF 221.

For **427 Prescribed Burning Lab** (2 cr). Alt/yrs. Fire use planning with emphasis on preparation, execution, and evaluation. Eight days of field trips. Prereq: For 426, sr standing, and perm.

For **ID-J428/ID-J528 Forest Gene Resource Management** (3 cr). Same as Gene J428/J528. WSU NATRS and GenCB 427/527. Application of genetic principles to management of forest trees: the origins and function of genetic diversity, heritability and genetic change, genetic implications of silvicultural practices and ecosystem management, forest tree genetic conservation. Cr earned in For 528 by seminar preparation and presentation. Two to four days of field trips. Prereq: For 270 or perm.

For **432 Tree Physiology** (3 cr). Same as PlSc 432. Alt/yrs. Fundamental physiological processes with emphasis on those unique to woody perennial plants. Prereq: Bot 311 or perm.

For **J458/J558 Agroforestry** (3 cr). See Rnge J458/J558.

For **J462/J562 Watershed Management** (2 cr). Influence of land management practices on streamflow, water quality, and riparian habitat. Additional projects/assignments reqd for grad cr. Two days of field trips. Prereq: For/Rnge/WLF 221 or perm.

For **465 Forest Protection** (2 cr). Key abiotic and biotic disturbance factors; causal relationships, forest dynamics interactions, effects on product or amenity value yields; management considerations; hazard predictions, silvicultural preventions and controls. Two days of field trips. Prereq: For 424 or perm.

For **466 Forest Disease and Insect Problems** (3 cr). Diagnosis of major diseases and insect problems in forests; emphasis on evaluations of their impacts and practical methods of alleviation; presented in context of ecosystem interactions and dynamics. Two lec and 6 hrs of lab a wk; occasional field lab.

For **470 Interdisciplinary Natural Resource Planning** (3 cr). Land use planning and decision making theories, legislation and techniques applied to natural resource case studies from the public and private sector, including impact assessment, creation and valuation of alternatives, and public involvement. Two hrs of lec, 2 hrs of lab, and 1 hr of recitation a wk; one 1-day field trip. Prereq: senior standing; For/RRT/Soc 235; For/Rnge/WLF 221; For/Rnge/ForP/RRT/WLF/Fish 302; and four of the following: ForP 250, Rnge 251, For 270, WLF 290, Fish 290, RRT 287, or perm.

For **ID472 Remote Sensing of Environment** (3 cr). WSU Soils 472. Current systems, data acquisition on ground and from remote locations, instrumentation, imagery interpretation and analysis, applications for natural resources.

For **474 Forest Resource Inventories** (3 cr). Log scaling; defect determination in standing trees; fixed plot, variable plot, and 3-P sampling; cruise design and implementation; timber appraisal; stem analysis; regeneration, downed woody fuel, and watershed surveys. Two lec and 3 hrs of lab a wk; two 1-day field trips. Prereq: For 274, 374, and perm.

For **476 Forestry Project Evaluation** (3 cr). Applied financial and economic analyses of site-level integrated resources decisions in forested ecosystems; commodity and intangible resource valuation; optimal management regimes of timber and non-commodity resources; joint production feasibility; links to forest planning and international development; forest taxation. Three hrs of lec and 1 hr of application lab a wk. Prereq: For 270, 383, or perm.

For **ID477 Integrated Forest Management Models** (3 cr). WSU NATRS 440. Applied mathematical programming techniques for simultaneous multiple product, intertemporal and interspatial decisions in forest planning; procedures to coordinate site projects, area analysis, strategic forest plans, and regional forest resource policies. Three hrs of lec and 1 hr of applications lab a wk. Prereq: For 270, 294, 383 or perm.

For **478 Western Forestry Practices** (1 cr). Field tour of coastal and transition forests; comparative analysis of differing forest management strategies and practices. One 8-day field trip. Prereq: sr standing or perm.

For **479 Forest Contracting** (2 cr). Alt/yrs. Basic principles and practical application of contracts for a range of natural resource management activities including timber sales, site preparation, and tree planting; on-site contract inspection, bonding, and insurance. Two 1-1/2 hr lec/lab a wk; three 1/2-day field trips. Prereq: senior standing.

For **484 Forest Policy and Administration** (2 cr). Evaluation of land and forest problems and policies in the U.S.; analysis of current conditions and policies; historical development of governmental and private agencies concerned with the administration of forest conservation program.

For **494 Models for Resource Decisions** (4 cr). Same as ForP 494. Use of mathematical models of resource systems to explore management strategy; problem analysis; systems concepts and optimization of resource allocation. Prereq: Math 160 or 170 and CS 105. Prereq or coreq: Stat 251 or equivalent.

For **J495/J595 International Wildland Management** (1-3 cr, max 3). World approaches and problems. Additional projects/assignments reqd for grad cr. Prereq: sr or grad standing and perm.

For **J496/J596 Field Studies in Tropical Ecology and Dendrology** (3 cr). Extensive three-wk field course in the tropics; emphasis on primary and secondary vegetation types, land-use problems, utilization of pantropical trees. Graded P/F. Additional projects/assignments reqd for grad cr. Prereq: For J420/J520 and perm.

For **497** (s) **Senior Thesis** (2-4 cr, max 4). Independently plan and conduct a thesis project; write and defend the thesis under supervision of an adviser. Prereq: senior standing and perm.

For **498** (s) **Renewable Natural Resources Internship** (cr arr). Supervised field experience with an appropriate public or private agency. Required for cooperative education students. Prereq: perm of dept.

For **499** (s) **Directed Study** (cr arr). For the individual student; conferences, library, field, or lab work. Prereq: sr standing, GPA 2.5, and perm.

For **500 Master's Research and Thesis** (cr arr).

For **501** (s) **Seminar** (cr arr). Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Prereq: perm.

For **502** (s) **Directed Study** (cr arr). Prereq: perm.

For **503** (s) **Workshop** (cr arr). Selected topics in the conservation and management of natural resources. Prereq: perm.

For **504** (s) **Special Topics** (cr arr). Prereq: perm.

For **ID510 Fundamentals of Research** (3 cr). WSU BSysE 510. Same as CS 507. The research process and the graduate research project; objectives, techniques, and challenges; scientific method and the design process; use of the literature; creativity; writing and speaking about research; preparation of a research proposal.

For **WS511 Introduction to Population Genetics** (3 cr). WSU GenCB 511.

For **512 Artificial Regeneration** (2 cr). See For J412/J512.

For **ID513 Forest Nursery Management** (2 cr). See For J413/J513.

For **520 Tropical Dendrology/Ecology** (3 cr). See For J420/J520.

For **523 Landscape Silviculture** (3 cr). Theoretical basis for application of silvicultural systems to forested landscapes; practical exercises to develop silvicultural practices designed to change forest patterns, processes, and dynamics; linkages to sustainable, functioning forest ecosystems at the landscape level. Two days of field trips. Prereq: silviculture and forest protection courses or equiv.

For **524 Quantitative Silviculture** (2 cr). Alt/yrs. Quantifying site quality, measures of stand density, predicting forest growth and yield, simulation models, and use of simulation models in silvicultural prescriptions.

For **525 Advanced Silviculture** (3 cr). Silvicultural systems and cultural practices; design of silvicultural prescriptions. Term project, field labs, and two days of field trips. Prereq: For 424 and/or perm.

For **526 Fire Ecology** (3 cr). Same as Rnge 526. Alt/yrs. Fire-related ecology of plant and animal species in wildlands; effects of fire occurrence and suppression on physical environment, landscapes, and processes in both natural and managed ecosystems. Two days of field trips. Prereq: general ecology course.

For **527 Landscape Ecology of Forests and Rangelands** (2-3 cr). Ecological relationships of biotic communities in heterogeneous environments, spatial and temporal patterns, importance of landscapes in maintenance of ecosystem diversity and function. Independent study project and instructor perm required for 3 cr. One 2-hr discussion a week based on extensive reading of current literature. Prereq: upper-division plant or animal ecology.

For **ID528 Forest Gene Resource Management** (3 cr). See For J428/J528.

For **545 Forest Ecosystem Management: Practices and Issues** (2 cr). Issues associated with integrated forest practices that can sustain forest products, restore damaged ecosystems, and maintain natural processes, including the silvicultural systems, harvest methods, and prescribed fire applications suitable for low-impact management in forest ecosystems.

For **549 Tropical Soils** (3 cr). See Soil 549. Alt/yrs.

For **550 GIS Topics in Ecosystem Analysis** (2 cr). Evaluation and discussion of current issues regarding the techniques, instrumentation, and application of GIS technology in ecosystem analysis. Prereq: experience with ARC/INFO or other GIS and perm.

For **558 Agroforestry** (3 cr). See Range J458/J558.

For **562 Watershed Management** (2 cr). See For J462/J562.

For **566 Disease and Insect Problems** (2-4 cr) (For 564). Field and laboratory techniques used to study and work with viruses, bacteria, fungi, mites, insects, animals, etc., that affect trees; emphasis on the role of each entity in dynamic forest ecosystems. Prereq: For 466 or perm.

For **ID&WS572 Digital Remote Sensing** (3 cr). WSU Soils 574 and ES/RP 575. Alt/yrs. Digital image processing systems applied to satellite and other remote sensing systems. Two lec and four hrs of lab a wk; four days of field trips. Prereq: For 375 or 472, or perm.

For **573 Advanced Aerial Photo Interpretation** (2-3 cr). Alt/yrs. Project planning; interpretation of vegetation, landforms, land use, disease and insect infestation, pollution, sequential changes, high-altitude-satellite imagery; mapping, photo-mensurational techniques; multistage sampling, and special problems. One lec and one 2- or 4-hr lab a wk; two 1-day field trips. Prereq: For 375 or equivalent, or perm.

For **575 Advanced Forest Management** (2 cr). Alt/yrs. Forest regulation; recent development in applied forest management and important contributions in forest management.

For **577 Macro-forestry Management Analysis** (2 cr). Procedures, models, and cases integrating natural resource project decisions with area analyses, strategic forest plans, and forest sector policy. Two lec and 1 hr of lab a wk. Prereq: For 476, 477 or perm.

For **ID581 Advanced Forest Economics** (2 cr). WSU NATRS 511. Economic principles, legislation, and policies affecting forestry, particularly those bearing on the character and intensity of land use.

For **586 Social Ecology of Natural Resources** (3 cr). See RRT 586.

For **589 Water Resources Seminar** (1 cr). See Intr 589.

For **595 International Wildland Management** (1-3 cr, max 3). See For J495/J595.

For **596 Field Studies in Tropical Ecology and Dendrology** (3 cr). See For J496/J596.

For **597** (s) **Practicum** (cr arr). Prereq: perm.

For **598** (s) **Internship** (cr arr). Prereq: perm.

For **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

For **600 Doctoral Research and Dissertation** (cr arr). Prereq: admission to the doctoral program in "forestry, wildlife and range sciences" and perm of dept.

Forestry, Wildlife and Range Sciences (General)

Charles R. Hatch, Dean (202C FWR Bldg. 83844-1131; phone 208/885-6441).

PREREQUISITE: Courses in this subject field numbered above 299 are not open to any student who is on academic probation.

FWR **101 Forestry Orientation** (1 cr). Intro to forestry and related wildland management professions.

FWR **200; 400** (s) **Seminar** (cr arr). Prereq: perm.

FWR **203; 403** (s) **Workshop** (cr arr). Prereq: perm.

FWR **204; 404** (s) **Special Topics** (cr arr). Prereq: perm.

FWR **299; 502** (s) **Directed Study** (cr arr). Prereq: perm.

FWR **310 Leadership for Natural Resources Management** (1 cr). Principles and practices of leadership; topics include goal setting and reflection, interpersonal communication, group dynamics and cooperation, and basic leadership skills. One 16-hour retreat, six 2-hr class sessions, two oral presentations, and one leadership project that contributes to the College of Forestry, Wildlife and Range Sciences, the University of Idaho, or the community.

FWR **401** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

FWR **499** (s) **Directed Study** (cr arr). For the individual student; conferences, library, field, or lab work. Prereq: sr standing in the College of FWR, GPA 2.5, and perm.

FWR **501** (s) **Seminar** (cr arr). Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Prereq: perm.

FWR **503** (s) **Workshop** (cr arr). Selected topics in the conservation and management of natural resources. Prereq: perm.

FWR **504** (s) **Special Topics** (cr arr). Prereq: perm.

FWR **597** (s) **Practicum** (cr arr). Prereq: perm.

FWR **598** (s) **Internship** (cr arr). Prereq: perm.

FWR **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

FWR **600 Doctoral Research and Dissertation** (cr arr). Prereq: admission to the doctoral program in "forestry, wildlife and range sciences" and perm of dept.

Genetics

Faculty: Lauren Fins, Holly A. Wichman, Raymond J. Hoff, Geral I. McDonald, Gerald E. Rehfeldt.

Though there is no genetics degree per se at the University of Idaho, many degrees emphasize genetics. Information about research programs, specifics of courses, and academic advising is available from any member of the genetics faculty.

Gene **200** (s) **Seminar** (cr arr). Prereq: perm.

Gene **299** (s) **Directed Study** (cr arr). Prereq: perm.

Gene **314 General Genetics** (3 cr). See Biol 351.

Gene **315 Experimental Genetics** (2 cr). See Biol 352.

Gene **320 Genetics of Farm Animals** (3 cr). See AVS 330.

Gene **400** (s) **Seminar** (cr arr). Prereq: perm.

Gene **J428/J528 Forest Gene Resource Management** (3 cr). See For J428/J528.

Gene **499** (s) **Directed Study** (cr arr). Prereq: perm.

Gene **501** (s) **Seminar** (cr arr). Prereq: perm.

Gene **502** (s) **Directed Study** (cr arr). Prereq: perm.

Gene **WS505 Introduction to Population Genetics** (3 cr). WSU GenCB 511.

Gene **528 Forest Gene Resource Management** (3 cr). See For J428/J528.

Gene **WS540 Cytogenetics** (3 cr). Alt/yrs. WSU GenCB 540.

Gene **585 Prokarytic Molecular Genetics** (3 cr). See MMBB 585.

Geography

Harley E. Johansen, Head, Dept. of Geography (203 McClure Bldg. 83844-3021; phone 208/885-6216).

Geog **100 Physical Geography** (4 cr). Satisfies core requirement J-3-b. Natural environment; nature, distribution, and relationships of climate, landforms, oceans, vegetation, hydrography, and soils. Three lec and one 2-hr lab a wk; may involve evening classes.

Geog **165 Human Geography** (3 cr). Intro to geographical dimension in human behavior and how this is evident in population distribution, rural and urban land use, and social, economic, and political attributes of societies.

Geog **180 Spatial Graphics** (3 cr). An introduction to the graphic language of maps, map reading and interpretation, map use, map technology. Two lec and 1 hr of lab a wk.

Geog **200 World Regional Geography** (3 cr) (Geog 250). Satisfies core requirement J-3-d. Countries, regions, and peoples of the world; interrelationships between humans and their physical and cultural environments.

Geog **201** (s) **Seminar** (cr arr). Prereq: perm.

Geog **203** (s) **Workshop** (cr arr). Prereq: perm.

Geog **204** (s) **Special Topics** (cr arr). Prereq: perm.

Geog **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Geog **240 Economic Geography** (3 cr). Reciprocal relations between people and the earth environment within an economic framework; resource distribution, developmental alternatives, movement, processing and industrialization, local to global perspective, theories and case studies.

Geog **299** (s) **Directed Study** (cr arr). Prereq: perm.

Geog **301 Meteorology** (3 cr). Atmospheric processes that produce weather; temperature; moisture, clouds, and precipitation; synoptic-scale weather; severe storms; weather instrumentation, weather maps, and forecasting; influences of weather on humans and impacts of humans on weather. One 1/2-day field trip. Prereq: Geog 100 or Phys 100 or perm.

Geog **315 Geomorphology** (3 cr). See Geol 335.

Geog **316 Processes in Glacial and Periglacial Environments** (3-6 cr). See Geol 336.

Geog **ID325 Quantitative Geomorphology** (3 cr). WSU Geol 325. Process-oriented approach to geomorphic systems and quantitative analysis of force and resistance relationships that govern these processes. Prereq: Geog 100 or Geol 101 or perm.

Geog **330 Urban Geography** (3-4 cr). Theory and models of the functions, origin, development, structure, and distribution of cities; land-use classification; geographic aspects of city planning. One hour additional meeting per week or project for fourth credit. One 1-day field trip. Prereq: Geog 200 or perm.

Geog **340 Business Location Decisions** (3 cr). Locational decision making in primary, secondary, and tertiary industries; resulting patterns of industrial location; importance of location and impact of industries on other characteristics of communities as demonstrated by examples from each sector. One 1-day field trip. Prereq: Geog 200 or perm.

Geog **346 Transportation** (3-4 cr). Structure of transportation systems and the role of these in spatial interactions; comparative advantages of air, water, highway, rail, and pipeline transport, and current development in each mode. One hour additional meeting per week or project for fourth credit. One and one-half days of field trips. Prereq: Geog 200 or perm.

Geog **350 Geography of Development** (3-4 cr). Geographic appraisal of resource problems and development potentials of the Third World. One hour additional meeting per week or project for fourth credit. Prereq: Geog 200.

Geog **360 Population Dynamics and Distribution** (3-4 cr). Same as Soc 360. Effects of fertility, mortality, and migration on population size and distribution; demographic trends in U.S. and other societies and how these relate to economic, political, environmental, and other factors. One hour additional meeting per week or project for fourth credit. Prereq: Geog 200 or perm.

Geog **ID362 U.S. and Canada** (3 cr). WSU Hist 314. Regional and systematic geography; emphasis on contemporary problems. Two 1-day field trips.

Geog **364 Idaho and the Pacific Northwest** (3 cr). Regional and systematic geography of the Northwest; emphasis on Idaho and contemporary problems. One 2-day field trip.

Geog **365 Political Geography** (3 cr). Conceptual approach to manifestations of political activity at every organizational level; intro to basic ideas of politics, territory, and geographic environment. Prereq: Geog 200 or perm.

Geog **370 Spatial Analysis** (3 cr). Methodological need for analyses of spatial data; spatial statistics; measurement of aggregation and concentration, description of areal distributions and gradients; regionalization techniques; intro to computer applications for spatial data. Prereq: intro courses in physical science and social science and Stat 251 or equivalent.

Geog **380 Cartography and Graphic Communication** (3 cr). For the map-using professions (e.g., agriculture, engineering, forestry, geosciences, planning). Map design and construction; maps as graphic communication devices, design and drafting processes for map creation and production. Two lec and 6 hrs of lab a wk.

Geog **385 GIS Primer** (3 cr). Intro to basic concepts and applications of geographic information systems (GIS), lab exercises on PC-based GIS packages. Two lec and 2 hrs of lab a wk. Prereq: CS 112 or perm.

Geog **400** (s) **Seminar** (cr arr). Prereq: perm.

Geog **401 Climatology** (3 cr). Physical basis for climatic processes and patterns; mechanics of global atmospheric circulation; radiation balance and heat budget of the earth; models of weather patterns and climate. Prereq: Geog 100 or Phys 100.

Geog **403** (s) **Workshop** (cr arr). Prereq: perm.

Geog **404** (s) **Special Topics** (cr arr). Prereq: perm.

Geog **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Geog **ID420 Land and Resource Regulation** (3 cr). WSU ES/RP 588. Legal aspects of land-use control and resource management; methods of research in law libraries for planners and resource managers not trained as attorneys. Prereq: Geog 200 or perm.

Geog **425 Mineral Land Management** (3 cr). Same as Min 425. Acquisition of mineral rights on federal, state, and private land; emphasis on laws and regulations affecting mineral development. Prereq: Geog 200 or perm.

Geog **427 Decision-Making in Resource Management** (3 cr). Theory and applications of evaluation and optimization techniques used for planning and management of natural resource systems; focus on operational knowledge of tech, potential applicability, and limitations. Prereq: Geog 200, Math 160 or Stat 251 or Geog 370 or perm.

Geog **WS444 Environmental Assessment** (3 cr). WSU ES/RP 444.

Geog **470 Computer Mapping** (3 cr). Design, generation, and analysis of thematic and topographic maps using digital mapping software on various microcomputer platforms and output devices; emphasis on cartographic communication and spatial analysis of computer-generated maps. Two lec and 2 hrs of lab a wk. Prereq: Geog 380 or perm.

Geog **ID475 Geographic Information Systems** (3 cr). WSU ES/RP 575. Spatial analysis in raster- and vector-based systems; concepts, techniques, and applications of GIS technology using microcomputer and workstation platforms. Two lec and 2 hrs of lab a wk. Prereq: Geog 385 or perm.

Geog **478 Interactive Cartographics** (3 cr). Integration of GIS, desktop mapping, and office productivity applications; development of software applications for the MS Windows(and World Wide Web environment. One lec, 2 hrs of lab, and 6 hrs of outside work per wk. Prereq: Geog 385 and 470, or perm.

Geog **480 Advanced Cartography and Remote Sensing** (3 cr). Problems in compilation, design, and production of complex thematic maps using state-of-the-art techniques and materials; scribing, process photography, computer cartography, remotely sensed imagery, and printing and reproduction methods to produce a printed map. One lec and six hrs of lab a wk; one 2-day field trip. Prereq: Geog 380 or perm.

Geog **483 Remote Sensing/GIS Integration** (3 cr). Ideas and advanced applications on the use of remotely sensed data and its integration with GIS; topics include examination of various types of imagery, preparing that imagery for incorporation into a GIS, and how to transform that imagery so it is compatible with a GIS. Two lec and 1 hr of lab a wk. Prereq: For 472.

Geog **484 Remote Sensing in the Geosciences** (3 cr). Applications of remote sensor data for environmental problem solving. Two lec and 2 hrs of lab a wk. Prereq: Geog 483.

Geog **485 Cartographic Production Techniques** (4 cr). Theory and practice of process (copy) camera for cartographic reproduction; line and half-tone photo, tray method film processing, pin registration, contact printing including screening and color proofing, offset platemaking. One lec and 3 hrs of lab a wk. Prereq: Geog 380 or perm.

Geog **491** (s) **Field Techniques** (1-3 cr, max 6). Acquisition of data in the field, analysis, interpretation, and presentation of results of field investigations. May also be taken in conjunction with other geography courses. Prereq: perm.

Geog **492 Mineral Industry Case Studies** (3 cr). See Min 472.

Geog **497** (s) **Practicum** (1-6 cr, max 6). Practical on-the-job experience in applied geography and cartography; oral and written reports are presented in which the student reviews and constructively criticizes the experience gained. Prereq: perm.

Geog **498** (s) **Internship** (cr arr). Prereq: perm.

Geog **499** (s) **Directed Study** (cr arr). Prereq: perm.

Geog **500 Master's Research and Thesis** (cr arr).

Geog **501** (s) **Seminar** (cr arr). Prereq: perm.

Geog **502** (s) **Directed Study** (cr arr). Prereq: perm.

Geog **503** (s) **Workshop** (cr arr). Prereq: perm.

Geog **504** (s) **Special Topics** (cr arr). Prereq: perm.

Geog **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Geog **516 Advanced Field Glaciology** (6 cr). See Geol 536.

Geog **520 Land and Resource Regulation Seminar** (3-6 cr, max 6). Current legal issues in land use control and mineral resource management. Prereq: Geog 420 or 425 or perm.

Geog **527 Seminar in Resource Geography** (3 cr). Examination of spatial ramifications of resource issues; emphasis on fuel and non-fuel minerals and development of spatial models used in evaluation process.

Geog **WS544 Environmental Assessment** (3 cr). WSU ES/RP 544.

Geog **570 Techniques of Regional and Urban Analysis** (3 cr). Theory and techniques for studying regional and urban phenomena from the spatial perspective; spatial structure; data and relationships among variables; projections and forecasts; models of economic activity, population, land use and transportation. Prereq: Geog 370 or Stat 251 or Math 451-452.

Geog **580 Cartography Seminar** (3 cr, max 6). Survey of cartography as a discipline and its major areas of specialization; literature of cartography; areas of applied and theoretical research; philosophy of maps. Prereq: Geog 380 or perm.

Geog **582 Modeling and Simulation with Geographic Information Systems** (3 cr). Alt/yrs. Principles and techniques of modeling and simulation of spatial and temporal processes; map algebra modeling language; model design and implementation using map algebra and a GIS macro programming language in UNIX environment. Two lec and 2 hrs of lab a wk. Prereq: Geog 475 and 580.

Geog **WS590 Special Topics in Regional Planning** (1-3 cr). WSU ES/RP 590.

Geog **591 History and Philosophy of Geography** (3 cr). Evolution of geography as a discipline, focusing on post-scientific revolution developments and identification of major themes in contemporary geographic thought.

Geog **597** (s) **Practicum** (cr arr). Prereq: perm.

Geog **598** (s) **Internship** (cr arr). Practical, on-the-job experience with governmental agencies or commercial establishments; oral and written reports are presented in which the student reviews and constructively criticizes the experience gained; salary may be received for services performed. Prereq: perm.

Geog **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Geog **600 Doctoral Research and Dissertation** (cr arr).

Geological Engineering

John S. Oldow, Head, Dept. of Geology and Geological Engineering (320 Mines Bldg. 83844-3022; phone 208/885-6192).

GeoE **203** (s) **Workshop** (cr arr). Prereq: perm.

GeoE **204** (s) **Special Topics** (cr arr). Prereq: perm.

GeoE **299** (s) **Directed Study** (cr arr). Prereq: perm.

GeoE **301 Field Geology and Report Writing** (6 cr). See Geol 301.

GeoE **400** (s) **Seminar** (cr arr). Prereq: perm.

GeoE **403** (s) **Workshop** (cr arr). Prereq: perm.

GeoE **404** (s) **Special Topics** (cr arr). Prereq: perm.

GeoE **407 Rock Mechanics** (3 cr). See Min 401.

GeoE **409 Ground Water** (3 cr). See Geol 409.

GeoE **410 Techniques of Ground Water Study** (3 cr). Same as Geol 410. Collection and analysis of field data for reconnaissance ground water studies. Prereq or coreq: Geol/GeoE 409.

GeoE **420 Erosion and Sediment Control** (3 cr). Same as Geol 420. Erosion and sediment control principles and practices, with emphasis on construction activities and compliance with regulatory guidelines. One 1-day field trip. Prereq: perm.

GeoE **ID428 Geostatistics** (3 cr). Same as Stat and Min 428. WSU Geol and Stat 428. Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Prereq: Stat 301 or equivalent.

GeoE **430 Site Testing and Evaluation** (3 cr). Geotechnical site investigation methods; data acquisition, analysis, and interpretation of geologic conditions; application of expert systems and decision analysis to site evaluation; design considerations. One 1-day field trip. Prereq: Geol 101, ME 340.

GeoE **ID&WS435 Geological Engineering Principles** (3 cr). WSU C E 426/526. Application of geology to solution of engineering problems; emphasis on selection of rock and soil parameters for use in design analysis. Two lec and one 2-hr lab a wk. Prereq: Geol 101 and Phys 111.

GeoE **436 Geological Engineering Design** (3 cr). Application of engineering and geological principles to analysis and design in construction industries. One 1-day field trip. Prereq: GeoE 435.

GeoE **475 Mineral Deposits** (4 cr). Occurrence, classification, and origin of metallic and nonmetallic economic mineral deposits. Three lec and one 3-hr lab a wk; one 3-day field trip. Prereq: Geol 249, 345; recommended prep: Geol 386.

GeoE **476 Design of Exploration Programs** (3 cr). Same as Geol 476. Design of geological surveys and mineral exploration programs; integration and evaluation of geological, geochemical, and geophysical exploration techniques. Prereq or coreq: GeoE 475.

GeoE **485 Geochemical Exploration** (3 cr). See Geol 485.

GeoE **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

GeoE **499** (s) **Directed Study** (cr arr). Prereq: perm.

GeoE **500 Master's Research and Thesis** (cr arr).

GeoE **501** (s) **Seminar** (cr arr). Prereq: perm.

GeoE **502** (s) **Directed Study** (cr arr). Prereq: perm.

GeoE **503** (s) **Workshop** (cr arr). Prereq: perm.

GeoE **507 Rock Mechanics II** (3 cr). See Min 504.

GeoE **528 Advanced Geostatistics** (3 cr). Same as Min 528. Advanced geostatistical methods with emphasis on multivariate kriging, conditional kriging, and spatial simulations. Prereq: GeoE 428.

GeoE **ID535 Seepage and Earth Dams** (3 cr). Same as CE 563. WSU C E 507. Principles of earth-dam design, failures, practical considerations in construction; principles governing the flow of water through soils. Prereq: perm.

GeoE **ID536 Slope Stability Analysis** (3 cr). Theory of stability analysis of slopes, landslides, and embankments for soil and rock masses; problem solutions using hand calculations and the latest computer codes; problems explore practical applications in the geotechnical engineering field.

GeoE **540 Stochastic Geotechnology** (3 cr). Probabilistic methods applied to geotechnology with emphasis on engineering, environmental geology, and hydrogeology. Prereq: GeoE 428 or Stat 451.

GeoE **563 Hydrogeology** (3 cr). See Hydr 563.

GeoE **589 Water Resources Seminar** (1 cr). See Intr 589.

GeoE **597** (s) **Practicum** (cr arr). Prereq: perm.

GeoE **598** (s) **Internship** (cr arr). Prereq: perm.

GeoE **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Geology

John S. Oldow, Head, Dept. of Geology and Geological Engineering (320 Mines Bldg. 83844-3022; phone 208/885-6192).

Geol **101 Physical Geology** (4 cr). Satisfies core requirement J-3-b. The earth, its composition, structure, and natural processes. Three lec and 2 hrs of lab a wk; one 1-day field trip.

Geol **102 Historical Geology** (4 cr) (Geol 106-107). Satisfies core requirement J-3-b. Evolution of the physical earth, plants, and animals; techniques used in interpretation of geologic history. Three lec and 2 hrs of lab a wk; one 1-day field trip.

Geol **111 Physical Geology for Science Majors** (4 cr). Introductory course in earth science for geology and other science majors. Three lec and one 2-hr lab a wk; two 1-day field trips.

Geol **150 Oceanography** (3 cr). Study of features of the world's oceans, their floors, and their margins. One 5-day field trip.

Geol **203** (s) **Workshop** (cr arr). Prereq: perm.

Geol **204** (s) **Special Topics** (cr arr). Prereq: perm.

Geol **212 Principles of Paleontology** (4 cr). Studies of morphology, classification of fossil groups, and utility of fossils in interpreting depositional environments and ages of sedimentary rocks. Three lec and one 2-hr lab a wk; one 1- to 2-day field trip. Prereq: Geol 102.

Geol **249 Mineralogy and Optical Mineralogy** (5 cr). Principles of crystallography, crystal chemistry, and crystal structure; mineral identification; principles of optical mineralogy and use of the petrographic microscope. Three lec and two 2-hr labs a wk; two 1-day field trips. Prereq: Geol 111 (or Geol 101) and Chem 111.

Geol **260 Survey of Minerals** (2 cr). Not open to geology majors. Survey of classification, crystallography, and uses of minerals. One lec and one 2-hr lab a wk; one 1-day field trip.

Geol **261 Survey of Rocks** (2 cr). Survey of origin, classification, and uses of rocks. One lec and one 2-hr lab a wk; two 1-day field trips. Prereq: Geol 260 or 249 (Geol 249 may be taken as coreq).

Geol **299** (s) **Directed Study** (cr arr). Prereq: perm.

Geol **ID&WS301 Field Geology and Report Writing** (6 cr). Same as GeoE 301. WSU Geol 308. Field problems and methods; use of instruments; interpretation of field data; preparation of reports based on field observations and interpretations. Three field trips. Accident and health insurance reqd. Prereq: Geol 345; Geol 261 or 423 and 466.

Geol **323 Geology of Idaho and the Pacific Northwest** (3 cr). Development of geologic structures and present-day distribution of rocks and mineral deposits in Idaho and the Pacific Northwest. Two 1-day field trips. Prereq: Geol 101 or Geog 100.

Geol **335 Geomorphology** (3 cr). Same as Geog 315. Classification, recognition, origin, and significance of land forms; land form analysis in interpretation of geologic structure and history. One 2-day field trip. Prereq: Geol 101 or 111 or 102 or Geog 100 or perm.

Geol **336 Processes in Glacial and Periglacial Environments** (3-6 cr). Same as Geog 316. Quantitative treatment using examples from regions of existing glaciers and permafrost. Two lec and one 3-hr lab a wk or (for 6 cr) 6-wk intensive field session in Alaska and Canada.

Geol **345 Structural Geology** (3 cr). Deformed rocks; mechanics of failure, recognition, description, classification, and genesis of folded and fractured rocks. Two lec and one 2-hr lab a wk; one 2-day field trip. Prereq: one semester high-school trigonometry or Math 144, Geol 101 or 111.

Geol **360 Geologic Hazards** (3 cr). Survey of natural geologic hazards, their controlling factors, recognition of hazard potential; emphasis on flash floods, earthquakes, landslides, volcanic hazards, subsidence. Three 1-day field trips. Prereq: Geol 101 or 111.

Geol **361 Geology and the Environment** (3 cr). Environmental consequences of development of geologic resources; geochemistry of pollution due to geologic resource use; geology and geochemistry of waste disposal sites. Two 1-day field trips. Prereq: Geol 101 or 111.

Geol **375 Geology of National Parks** (2 cr). Primarily for non-geology majors who want to acquire a better knowledge of geologic concepts and processes through study of geology of national parks. Recommended preparation: Geol 101 or 102 or 111 or Geog 100.

Geol **386 Principles of Geochemistry** (3 cr). Physiochemical principles applied to geologic processes; phase equilibria in rock systems. Two lec and one 2-hr lab a wk. Prereq: Geol 249 or perm and Chem 111.

Geol **400** (s) **Seminar** (cr arr). Prereq: perm.

Geol **405 Earth Sciences** (3 cr). Integration of, and current issues in, the earth sciences (astronomy, geology, meteorology, oceanography) as applied to earth science education. Three lec and one 2-hr lab a wk; two field trips. Prereq: Geog 100 and Geol 101 or 111; recommended: Geog 401, Phys 103-104.

Geol **408 Field Methods in the Earth Sciences** (3 cr). Observation and collection of data in the field and using the data for practical application of the earth sciences; course may be accelerated. Three lec and one 2-hr lab a wk; three field trips. Prereq: Geol 101 or 111 and 335.

Geol **409 Ground Water** (3 cr). Same as GeoE 409. Occurrence, movement, and properties of subsurface water; intro to ground-water geology and hydrology. One 1-day field trip. Prereq: Geol 101 or 111, and Math 130 or 143.

Geol **410 Techniques of Ground Water Study** (3 cr). See GeoE 410.

Geol **J412/J512 Computer Geology** (2 cr). Computer applications in geology; use of BASIC programs, computer graphics, spreadsheets, and data bases to help solve geological problems. Term project reqd for grad cr. One lec and one 2-hr lab a wk. Prereq: perm.

Geol **ID-J415/ID-J515 Paleoecology** (3 cr). WSU Geol 515. Ecological dynamics as applied to the paleontologic record; preservation constraints; animal-sediment interactions; organisms' role in the relative time scale. Different term paper reqd for grad cr. Two lec and one seminar-style meeting a wk; one 5-day field trip to Oregon Coast.

Geol **417 Advanced Paleontology** (3 cr). Fossil assemblage analyses and report writing; marine faunal assemblage 1st half semester; nonmarine floral assemblage 2nd half semester. Three 2-hr labs a wk; one 1-day field trip. Prereq: Geol 212 or perm.

Geol **420 Erosion and Sediment Control** (3 cr). See GeoE 420.

Geol **423 Stratigraphy and Sedimentary Petrography** (3 cr). Description of sedimentary rocks in thin sections and hand specimens; organization and correlation of layered rocks at all scales; factors controlling vertical and lateral distribution of rock units. One lec and two 2-hr labs a wk; one 4-day field trip.

Geol **425 Sedimentology** (3 cr). Environments and processes responsible for separation of clastic and nonclastic sedimentary rock materials; roles of transportation, deposition, including situation and lithification. Two lec and one 2-hr lab a wk; one 2-day field trip. Prereq: Geol 249 or 260.

Geol **430 Topics in Geomorphology/Geologic Hazards** (3 cr). Alt/yrs. Select advanced topics and case histories of natural geologic hazards and geomorphic processes and their relation to humans. One lec and 4 hrs of lab a wk; three 1-day field trips. Prereq: Geol 360 and/or 335.

Geol **J432/ID-J532 Geologic Development of North America** (3 cr). WSU Geol 529. Tectonic, magmatic, and sedimentary sequence studies of North American continent through time; concepts of metal and petroleum enrichment related to time and geological processes. Additional questions on two exams and written report of field trip reqd for grad cr. One 7-day field trip.

Geol **449 Geology of Industrial Rocks and Minerals** (2 cr). Classification, occurrence, origin, preparation, extraction, use, and economics chiefly of nonmetallic rocks and minerals of major importance to industry. Prereq: Geol 249.

Geol **451 Practicum in X-ray Diffraction** (1 cr). Use of x-ray diffraction in identification of minerals; x-ray safety training reqd. Accelerated course; enrollment limited to 8. Graded P/F. Minimum of 20 hrs of practical experience. Prereq: Geol 249 and perm.

Geol **J455/J555 Thermochemistry of Geological Processes** (3 cr). Alt/yrs. Thermodynamic principles applied to geological problems; specific topics include real gases at high P and T, estimation and measurement of thermodynamic data, solid solution modelling, geobarometry, geothermometry, thermodynamics of magmas. Additional projects/assignments reqd for grad cr. Prereq: Chem 302 or perm.

Geol **J456/J556 Geological Reaction Rates and Diffusion** (3 cr). Alt/yrs. Chemical kinetics applied to geological sciences; diffusion in crystals, melts and fluids; crystal growth and nucleation; geospeedometry; dissolution and precipitation kinetics; weathering rates; crystal defects. Additional projects/assignments reqd for grad cr. Prereq: Chem 302 and Geol J455/J555, or perm.

Geol **J457/J557 High-Temperature Aqueous Geochemistry I** (3 cr). Alt/yrs. Application of solution chemistry to hydrothermal solutions; Eh-pH, log $f(0_2)$ - pH, activity - activity diagrams; estimation techniques; water structure; metal complexation; solubility, transport and deposition; equilibrium speciation; geothermal fields; experimental methods; activity coefficients. Additional projects/assignments reqd for grad cr. Two lec and three hrs of lab a wk; one 4-day field trip. Prereq: Chem 302 and Geol J455/J555 or perm.

Geol **J458/J558 High-Temperature Aqueous Geochemistry II** (3 cr). Alt/yrs. Expands on topics covered in Geol J457/J557 through seminar format. Selected readings from primary literature followed by presentations and discussions in class. Additional projects/assignments reqd for grad cr. Prereq: Chem 302, Geol J455/J555 and J457/J557, or perm.

Geol **466 Igneous and Metamorphic Rocks** (4 cr). Petrology plus megascopic and microscopic petrography of igneous and metamorphic rocks. Two lec and two 2-hr labs a wk; two 1-day or one 2-day field trips. Prereq: Geol 249 and Geol 386 or Chem 112 or Chem 113.

Geol **J467/ID-J567 Volcanology** (3 cr). WSU Geol 567. Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Additional projects/assignments reqd for grad cr. Two lec and one 2-hr lab a wk; seven days of field trips.

Geol **472 Mineral Industry Case Studies** (3 cr). See Min 472.

Geol **476 Design of Exploration Programs** (3 cr). See GeoE 476.

Geol **J478/J578 Low Temperature Aqueous Geochemistry** (3 cr). Alt/yrs. Basic principles of aqueous geochemistry as applied to low temperature waters such as groundwaters, and ocean, lake, and river waters; thermodynamics, kinetics, aqueous speciation, solubility phenomena, adsorption phenomena, calculation and interpretation of Eh-pH diagrams, organic geochemistry of waters, acid mine drainage; accompanying lab will stress familiarity with analytical techniques including those that can be adapted to field use. Two lec and 3 hrs of lab a wk; one 2-day field trip.

Geol **485 Geochemical Exploration** (3 cr). Same as GeoE 485. Principles of geochemical techniques in prospecting for mineral deposits; design, execution, and interpretation of geochemical surveys. Two lec and one 3-hr lab a wk; two 1-day field trips. Prereq: Geol 386, Chem 113.

Geol **J488/ID-J588 Isotope Geology** (4 cr). Alt/yrs. Geologically useful radioactive isotopes; geochronology and isotopes as tracers. Cr earned in Geol 588 by completion of term project. Three lec and one 2-hr lab a wk. Prereq: perm.

Geol **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

Geol **499** (s) **Directed Study** (cr arr). Prereq: perm.

Geol **500 Master's Research and Thesis** (cr arr).

Geol **501** (s) **Seminar** (cr arr). Prereq: perm.

Geol **502** (s) **Directed Study** (cr arr). Prereq: perm.

Geol **503** (s) **Workshop** (cr arr). Prereq: perm.

Geol **WS511 Advanced Topics in Paleontology** (3 cr). WSU Geol 511. Alt/yrs.

Geol **512 Computer Geology** (2 cr). See Geol J412/J512.

Geol **ID515 Paleoecology** (3 cr). See Geol J415/J515.

Geol **WS520 Advanced Topics in Sedimentary Rocks** (3 cr). WSU Geol 520. Alt/yrs. Prereq: Geol 425.

Geol **WS523 Advanced Topics in Stratigraphy** (3 cr). WSU Geol 523. Alt/yrs.

Geol **ID524 Hydrostratigraphy** (3 cr). Alt/yrs. Processes controlling the three-dimensional distribution of hydrogeologic parameters; focus on siliciclastic deposits.

Geol **525 Stratigraphic Paleobotany** (3 cr). Alt/yrs. Fossil floras and floral successions, taxonomic problems; geologic ranges and past distributions of plant taxa; paleoecological interpretation; methods and correlation and dating by fossil plants. One 1-day and one 2-day field trips.

Geol **ID526 Petrology of Carbonate Rocks** (3 cr). WSU Geol 528. Origin, classification, distribution, depositional environments, and diagenesis of modern and ancient carbonates; emphasis on petrographic analysis. Two lec and one 3-hr lab a wk; one 3-day field trip.

Geol **WS528 Clastic Depositional Systems** (3 cr). WSU Geol 521. Alt/yrs.

Geol **WS529 Carbonate Depositional Systems** (3 cr) (Geol WS525B). WSU Geol 525. Alt/yrs.

Geol **ID530 Fluvial Systems** (3 cr). Alt/yrs. Investigation of the relationship between geomorphologic change and the long-term sedimentary record; factors controlling preservation potential of fluvial deposits.

Geol **532 Geologic Development of North America** (3 cr). See Geol J432/J532.

Geol **536 Advanced Field Glaciology** (6 cr). Same as Geog 516. Advanced quantitative treatment of glaciological problems carried out on selected glaciers of the Juneau Icefield, Alaska, or an alternative area in the Rocky Mountains or Cascades. Intensive 7-wk summer field session.

Geol **WS541 Structural Analysis** (3 cr). WSU Geol 541.

Geol **WS548 Tectonics** (3 cr). WSU Geol 540. Alt/yrs.

Geol **WS550 Advanced Mineralogy** (3 cr). WSU Geol 550. Alt/yrs.

Geol **WS551 Ore Microscopy and Fluid Inclusion Analysis** (3 cr). WSU Geol 551. Alt/yrs.

Geol **WS552 X-ray Analysis in Geology** (3 cr). WSU Geol 552.

Geol **553 Chemical Petrology** (3 cr). Use of major and trace element and geochemistry in elucidating the genesis and evolution of igneous rocks, especially in relation to their tectonic setting.

Geol **ID554 Physical Petrology** (3 cr). WSU Geol 554. Applications of continuum mechanics and fluid dynamics to generation, rise, storage, and eruption of magmas.

Geol **555 Thermochemistry of Geological Processes** (3 cr). See Geol J455/J555.

Geol **556 Geological Reaction Rates and Diffusion** (3 cr). See Geol J456/J556.

Geol **557 High-Temperature Aqueous Geochemistry I** (3 cr). See Geol J457/J557.

Geol **558 High-Temperature Aqueous Geochemistry II** (3 cr). See Geol J458/J558.

Geol **WS560 Advanced Igneous Petrology** (3 cr). WSU Geol 560.

Geol **ID565 Metamorphism** (3 cr). WSU Geol 565. Metamorphic minerals, rocks, processes, and facies; polymetamorphic rocks; recent developments in structural geometry. Two lec and one 3-hr lab a wk; one 2-day field trip.

Geol **ID567 Volcanology** (3 cr). See Geol J467/J567.

Geol **WS571 Geochemistry of Hydrothermal Ore Deposits** (3 cr). WSU Geol 571.

Geol **WS573** (s) **Advanced Topics in Economic Geology** (2 cr). WSU Geol 573.

Geol **ID575 Advanced Mineral Deposits I** (3 cr). WSU Geol 561. Ore mineralogy and fabric; sulfide phase equilibria.

Geol **576 Advanced Mineral Deposits I Lab** (1 cr). Identification of ore minerals; their textures, association, and paragenesis. One 3-hr lab a wk.

Geol **ID577 Advanced Mineral Deposits II** (3 cr). WSU Geol 561. Modern concepts of the origin and geochemistry of metallic mineral deposits. Two lec and one 3-hr lab a wk; one 3-day field trip.

Geol **578 Low Temperature Aqueous Geochemistry** (3 cr). See Geol J478/J578.

Geol **WS581 Geochemical Phase Diagrams** (3 cr). WSU Geol 581.

Geol **587 Instrumental Techniques in Geochemistry** (3 cr). Alt/yrs. Modern instrumentation for geochemical analyses including: ion chromatography, gas chromatography, FTIR spectroscopy, ICP-AES, ICP-MS, atomic absorption, UV-visible absorption spectrophotometry, geological sampling preparation. Two lec and one 3-hr lab a wk. Prereq: perm.

Geol **ID588 Isotope Geology** (4 cr). See Geol J488/J588.

Geol **589 Water Resources Seminar** (1 cr). See Intr 589.

Geol **WS592 Advanced Topics in Structural Geology** (1-4 cr, max 6). WSU Geol 592.

Geol **597** (s) **Practicum** (cr arr). Prereq: perm.

Geol **598** (s) **Internship** (cr arr). Prereq: perm.

Geol **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Geol **600 Doctoral Research and Dissertation** (cr arr).

Geophysics

John S. Oldow, Head, Department of Geology and Geological Engineering (320 Mines Bldg. 83844-3022; phone 208/885-6192).

Geop **J420/J520 Exploration Geophysics** (3 cr). Design and interpretation of geophysical surveys for exploration of metallic and nonmetallic mineral deposits; use of geophysics to solve exploration problems. Additional projects/assignments reqd for grad cr. Prereq: perm.

Geop **421 Engineering Geophysics** (3 cr). See Min 421.

Geop **422 Principles of General Geophysics** (3 cr). Same as Min 422. Outline of geophysical methods used to investigate earth's interior. One 1-day field trip. Prereq: perm.

Geop **J423/J523 Seismic Stratigraphy** (3 cr). Intro to seismic exploration with emphasis on stratigraphic interpretation; solution of geologic problems using seismic techniques; design of seismic surveys. Additional projects/assignments reqd for grad cr. Prereq: perm.

Geop **499** (s) **Directed Study** (cr arr). Prereq: perm.

Geop **500 Master's Research and Thesis** (cr arr).

Geop **501** (s) **Seminar** (cr arr). Prereq: perm.

Geop **502** (s) **Directed Study** (cr arr). Prereq: perm.

Geop **520 Exploration Geophysics** (3 cr). See Geop J420/J520.

Geop **521 Mining Geophysics** (3 cr). See Min 520.

Geop **523 Seismic Stratigraphy** (3 cr). See Geop J423/J523.

Health and Safety

Calvin W. Lathen, Director, Div. of Health, Physical Education, Recreation and Dance (101 Phys. Ed. Bldg. 83844-2401; phone 208/885-7921).

H&S **150 Wellness Lifestyles** (3 cr). Health concepts and strategies that affect one's wellness; emphasis on personal responsibility and life-style choices.

H&S **200** (s) **Seminar** (cr arr). Prereq: perm.

H&S **203** (s) **Workshop** (cr arr). Prereq: perm.

H&S **204** (s) **Special Topics** (cr arr). Prereq: perm.

H&S **245 Introduction to Athletic Injuries** (3 cr). Special fee course. Athletic training; recognition, evaluation, general care of athletic injuries; adhesive strapping. Two lec and one lab a wk. Prereq or coreq: Zool 120.

H&S **288 First Aid: Emergency Response** (2 cr). Emergency care of injuries resulting from accidents or illness; administration of oxygen and blood pressure measurements. Qualified students will be awarded two certificates: American Red Cross Emergency Response and American Red Cross CPR for the Professional Rescuer. Certification/lab fee reqd. Two lec and 1 hr of lab a wk.

H&S **289 Drugs in Society** (2 cr). Legal implications, values, and physical, social, and emotional factors involved in the use and abuse of drugs in society.

H&S **299** (s) **Directed Study** (cr arr). Prereq: perm.

H&S **311 Acquaintance Rape** (2-3 cr). Overview of acquaintance sexual assault and rape, related research and statistics, impact on victims, socialization process of gender role stereotyping, exploration of myths and misconceptions, psychology of perpetrators, legal definitions, and avoidance strategies. Students give a set number of presentations to living groups.

H&S **316 School and Community Health Services** (2 cr). Alt/yrs. Health services as they apply to the school, community health environment, and culture variables, with emphasis on public and volunteer organizations. Prereq: H&S 150.

H&S **323 Health Education Methods and Administration** (3 cr). Curriculum design, organization, strategies, and resource materials for teaching health in a multi-culture setting. Prereq: H&S 150.

H&S **ID349 Advanced Athletic Injuries** (3 cr). WSU Ath T 349. Special fee course. Etiologic symptoms of sports-related injuries; diagnostic emphasis given to specific injuries of the extremities. Two lec and one lab a wk. Prereq: H&S 245 or perm.

H&S **350 Stress Management and Mental Health** (2 cr). Application of behavioral stress management techniques that have the potential to relieve mental and physical stress; emphasis on development of skills related to mental and physical health.

H&S **355 Accident Control, Prevention, and Human Ecology** (2 cr). Alt/yrs. The study of accidents, accident prevention, and injury control in variety of settings within society; emphasis on human resources impact.

H&S **400** (s) **Seminar** (cr arr). Prereq: perm.

H&S **403** (s) **Workshop** (cr arr). Prereq: perm.

H&S **404** (s) **Special Topics** (cr arr). Prereq: perm.

H&S **410 Athletic Rehabilitation and Administration** (2 cr). Rehabilitation techniques for reconditioning following specific injuries and surgeries; administrative topics include facilities, budgeting, and legalities.

H&S **431 Practicum: Student Teaching** (7 or 14 cr). Supervised student teaching at the intermediate and/or secondary levels (grades 6 through 12). Double majors select the 7-cr option; all other students select the 14-cr option. Credits earned in this course may not be applied to total credits needed for the school and community health education major. Graded P/F. Prereq: admission to teacher education, H&S 323, ED 312 and 314, cumulative GPA of 2.5, and perm of dept. (Submit application to director of clinical experiences in the College of Education by December 1 of the school year before enrolling.)

H&S **J436/J536 Health and Wellness Promotion** (3 cr). Theoretical and programmatic aspects of health promotion/wellness programs in workplace and community; investigation of marketing, mass media, and health behavior change approaches; review of research on smoking cessation, weight control, nutrition, fitness, hypertension, and stress management programs. Additional projects reqd for grad cr. Prereq: H&S 150.

H&S **440 Driver Education I** (3 cr). Methods, organization, and administrative techniques; development of habits, attitudes, knowledge, and skills. Prereq: valid driver's license and perm.

H&S **449 Driver Education II** (3 cr). Special fee course. Continuation of H&S 440. Advanced preparation in principles and practice of driver and traffic safety education for teachers, supervisors, and administrators; emphasis on new and broader teaching competencies in traffic safety. Lab work and safety projects reqd. In addition to lec, 6-10 hrs of practicum reqd during semester. Prereq: H&S 440, valid driver's license, satisfactory driving record, and perm.

H&S **J450/J550 Contemporary Issues in Health** (2 cr). Current trends and issues affecting individual's and society's decisions regarding personal and environmental health. Term project reqd for grad cr.

H&S **WS465 Medical Aspects of Athletic Injuries** (1 cr). WSU Ath T 465.

H&S **WS466 Athletic Training Evaluation** (3 cr). WSU Ath T 466.

H&S **WS467 Athletic Training Rehabilitation** (3 cr). WSU Ath T 467.

H&S **WS468 Athletic Training Modalities** (3 cr). WSU Ath T 468.

H&S **WS469 Athletic Training Organization and Administration** (3 cr). WSU Ath T 469.

H&S **495** (s) **Practicum in Tutoring** (1 cr, max arr). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

H&S **498 Internship in Health/Safety** (cr arr). Supervised field work. Graded P/F. Prereq: Rec 445 and sr standing.

H&S **499** (s) **Directed Study** (cr arr). Prereq: perm.

H&S **501** (s) **Seminar** (cr arr). Prereq: perm.

H&S **502** (s) **Directed Study** (cr arr). Prereq: perm.

H&S **503** (s) **Workshop** (cr arr). Prereq: perm.

H&S **504** (s) **Special Topics** (cr arr). Prereq: perm.

H&S **505** (s) **Professional Development** (cr arr). Cr earned in this course will not be accepted toward grad degree programs. Prereq: perm.

H&S **536 Health and Wellness Promotion** (3 cr). See H&S J436/J536.

H&S **550 Contemporary Issues in Health** (2 cr). See H&S J450/J550.

History

Richard B. Spence, Chair, Dept. of History (315 Admin. Bldg. 83844-3175; phone 208/885-6253).

PREREQUISITE: Two-semester courses in this field may be taken in either order. Students may enroll in second-semester courses without having had the first. Ordinarily six lower-division credits in history are advised for registration in upper-division courses.

Note: In jointly numbered courses, additional projects/assignments are required for graduate credit.

Hist **101-102 History of Civilization** (3 cr; 4 cr for honors sections) (C). Satisfies core requirement J-3-d. Contributions to the modern world. Hist 101: to 1650. Hist 102: 1650 to present.

Hist **111-112 Introduction to U.S. History** (3 cr) (C). Political, diplomatic, economic, social, and cultural history; earliest times to the present. Hist 111: to 1877. Hist 112: 1877 to present.

Hist **180 Introduction to East Asian History** (3 cr). Survey of traditional and modern Chinese and Japanese history.

Hist **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Hist **210 Introduction to Modern Latin American History** (3 cr). Survey of economic, political, social, and cultural developments in selected Latin American countries, each of which represents a large region, from independence to the present; emphasis on cultural uniqueness, economic development, pressures for social change, and mass political movements.

Hist **290 The Historian's Craft** (3 cr). Introduction to the discipline of history, basic skills for course work and research, and major schools of historical writing.

Hist **313 Red, White, and Black: The Peopling of Early North America** (3 cr). Survey; Native American, Euroamerican, and Afro-American heritage in North America, 1400-1790.

Hist **315 Modern African-American Culture** (3 cr). An overview of African American history in the U.S. from the late 19th century to the present; comparisons with the experience of African Americans in other parts of the Americas; study of important personalities and historical forces that have influenced African Americans and the societies in which they live.

Hist **331 The Age of African Empires** (3 cr). Survey of the history of Africa south of the Sahara to 1800.

Hist **371-372 History of England** (3 cr) (C). Political, social, economic, and religious development of the British Isles. Hist 371: to 1688. Hist 372: 1688 to present.

Hist **J401/J501** (s) **Seminar** (cr arr). Research papers in U.S., Latin American, ancient, English, or European history. Prereq: perm of dept.

Hist **404** (s) **Special Topics** (cr arr). Prereq: perm.

Hist **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Hist **J407/J507** (s) **Colloquium in European History** (cr arr). Reading and analyzing historical literature in European history.

Hist **J408/J508** (s) **Colloquium in Latin American History** (cr arr). Reading and analyzing historical literature in Latin American history.

Hist **J409/J509** (s) **Colloquium in American History** (cr arr). Reading and analyzing historical literature in American history.

Hist **J410/J510 Land and the American Imagination** (3 cr). History, literary, and artistic images, perceptions, and experiences of Europeans and Euroamericans in North America, 1500 to present.

Hist **J412/J512 The American Revolution, 1763-1789** (3 cr). U.S. independence through the adoption of the Constitution.

Hist **J415/J515 Civil War and Reconstruction, 1828-1877** (3 cr). Sectionalism, westward expansion, slavery, the Civil War and Reconstruction.

Hist **J416/J516 Rise of Modern America, 1877-1900** (3 cr). Industrial and economic development, political reform, populism.

Hist **J417/J517 United States, 1900-1945** (3 cr). Populism, Progressivism, World War I, the Twenties, the Depression, the New Deal, and World War II.

Hist **J418/J518 Recent America, 1945-Present** (3 cr). America since 1945.

Hist **J419/J519 Twentieth-Century American West** (3 cr). History of the 11 Rocky Mountain and Pacific states from 1900 to the present.

Hist **J420/J520 History of Women in American Society** (3 cr). Examination of the roles of women—social, economic, and political—in U.S. history from colonial times to the present.

Hist **J423/J523 Idaho and the Pacific Northwest** (3 cr) (C, 423 only). Political, economic, social development; earliest times to the present.

Hist **J424/J524 American Environmental History** (3 cr). History of changing American attitudes and actions toward the environment over three centuries.

Hist **WS-J427/WS-J527 Public History** (3 cr). WSU Hist 427/527.

Hist **J428/J528 History of the American West** (3 cr). Spanish beginnings, Anglo-French expansion, the American occupancy, 1540 to present.

Hist **J429-J430/J529-J530 U.S. Diplomatic History** (3 cr). Hist J429/J529: from independence to world power, 1763-1898. Hist J430/J530: world power through war and the quest for peace, 1898 to present.

Hist **J431/J531 History of Indian-White Relations** (3 cr). Same as Soc 533. Survey 1400 to present; dynamics and themes of Indian history with emphasis on Indian-White relations in the U.S.

Hist **ID-J432/J532 The Canadian and American Western Experiences** (3 cr). WSU Hist 424. Comparative framework for analysis of major issues and events in history of the Canadian West; a balance of Canadian and American western history.

Hist **J435/J535 Latin America: The Colonial Era** (3 cr). Indian civilization, European colonization, Spanish Imperial System, wars of independence.

Hist **J437/J537 Modern Canada** (3 cr). Survey and analysis of political, economic, social, and cultural aspects from Confederation (1867) to the present; emphasis on economic development, Canadian-U.S. relations, Quebec nationalism, Western Regionalism, and modern Canadian polity.

Hist **J438/J538 Modern Mexico** (3 cr). Survey and analysis of political, economic, social, and cultural aspects from independence to present; emphasis on Iberian and Amerindian legacies, economic development, relations with U.S., and social revolution of 1910-1920.

Hist **J439/J539 Modern Latin America** (3 cr). Political, economic, social, and cultural development; search for stability; growth of nationalism.

Hist **J440/J540 Social Revolution in Latin America** (3 cr). Analysis and comparison of 20th-century social revolution in selected Latin American countries: Cuba and two others; emphasis on origins of movements for social change, economic development issues, impact of the revolutions, and relations between new governments and the U.S.

Hist **J441/J541 Comparative Slavery and Emancipation in the Atlantic World** (3 cr). Analysis of the way in which African slavery became the predominant labor force in the Americas.

Hist **J442/J542 The Medieval Church: Europe in the Early and High Middle Ages** (3 cr). Hist 442 same as RelS 442. Evolution of medieval Christian society from reign of Constantine (c. 300) to pontificate of Innocent III (1215), as expressed in monastic and mendicant orders, crusades, 12th-century Renaissance, and heresy.

Hist **J443/J543 The Medieval State: Europe in the High and Late Middle Ages** (3 cr). Analysis of how the vitality of particular medieval princes, of the commercial revolution, and of such movements as development of common law was harnessed in the evolution of medieval government from feudalism to the modern state.

Hist **445 Medieval English Constitutional and Legal History: 1066-1485** (3 cr). The study of the origins and development of English law and the English constitution during the Middle Ages.

Hist **J447/J547 The Age of the Renaissance and the Reformation** (3 cr). Hist 447 same as RelS 447. Survey of European history and society through changes wrought by the Renaissance, the Explorations, and the Reformation.

Hist **449 From Sappho to Margaret Cavendish: Women in Pre-industrial European History** (3 cr) (Hist 352). Survey of historical experience of women from the Greeks through the 17th century.

Hist **J451/J551 Age of the French Revolution** (3 cr). Nature of the Old Regime; relationship between the Enlightenment and the French Revolution; aims, progress, and consequences of the revolution itself; Europe, 1650-1815.

Hist **J452/J552 19th Century Europe** (3 cr). Nationalism and nation-building; Imperialism and the Great Powers; Capitalism and Socialism; tensions and rivalries leading to WWI.

Hist **J455/J555 20th Century Europe** (3 cr). World Wars, revolutions, and totalitarianism; decline and fall of the European empires; rise of a New Europe.

Hist **J457/J557 History of the Middle East** (3 cr). Survey of the Middle East from the beginning of the Islamic period to the present.

Hist **J458/J558 Military History** (3 cr). Survey of military history from ancient times to present; emphasis on interrelationship of war, society, and technology.

Hist **J466/J566 Eastern Europe Since 1774** (3 cr). Nationality, nation-building, and dissolution; emphasis on Poland, the Habsburg Empire, and the Balkans.

Hist **J467/J567 Russia to 1894** (3 cr). Russia from medieval origins to 1894; development of Tsarist autocracy and serfdom; reaction, reform, and rise of the revolutionary movements.

Hist **J468/J568 Russia and Soviet Union Since 1894** (3 cr). The last years of Tsarism; revolutions of 1905 and 1917; development of the Soviet Union under Lenin, Stalin, and their successors.

Hist **J469/J569 Modern France** (3 cr). French nation from 1815 through the De Gaulle era.

Hist **J470/J570 Germany and Central Europe Since 1815** (3 cr). Development of Germany from pre-Bismarck era to present; parallel developments in the Habsburg monarchy and Austrian Republic.

Hist **J473/J573 Tudor England** (3 cr). Revolution in church and state; social and economic change; exploration.

Hist **J482/J582 Japan, 1600 to Present** (3 cr). Western impact on the political, cultural, and economic fabric of Japanese society.

Hist **J483/J583 Traditional Chinese Civilization** (3 cr). Survey from prehistoric beginnings through 1840s.

Hist **J484/J584 Modern China, 1840s to Present** (3 cr). Last century of Qing dynasty, 1911 Revolution and Republican experiment, Revolution of 1949, and People's Republic of China.

Hist **499** (s) **Directed Study** (cr arr). Prereq: perm.

Hist **500 Master's Research and Thesis** (cr arr).

Hist **501** (s) **Seminar** (cr arr). See Hist J401/J501.

Hist **502** (s) **Directed Study** (cr arr). Prereq: perm.

Hist **504** (s) **Special Topics** (cr arr). Prereq: perm.

Hist **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Hist **507** (s) **Colloquium in European History** (cr arr). See Hist J407/J507.

Hist **508** (s) **Colloquium in Latin American History** (cr arr). See Hist J408/J508.

Hist **509** (s) **Colloquium in American History** (cr arr). See Hist J409/J509.

Hist **510 Land and the American Imagination** (3 cr). See Hist J410/J510.

Hist **512 The American Revolution, 1763-1789** (3 cr). See Hist J412/J512.

Hist **515 Civil War and Reconstruction, 1828-1877** (3 cr). See Hist J415/J515.

Hist **516 Rise of Modern America, 1877-1900** (3 cr). See Hist J416/J516.

Hist **517 United States, 1900-1945** (3 cr). See Hist J417/J517.

Hist **518 Recent America, 1945-Present** (3 cr). See Hist J418/J518.

Hist **519 Twentieth-Century American West** (3 cr). See Hist J419/J519.

Hist **520 History of Women in American Society** (3 cr). See Hist J420/J520.

Hist **523 Idaho and the Pacific Northwest** (3 cr). See Hist J423/J523.

Hist **524 American Environmental History** (3 cr). See Hist J424/J524.

Hist **WS527 Public History** (3 cr). See Hist J427/J527.

Hist **528 History of the American West** (3 cr). See Hist J428/J528.

Hist **529-530 U.S. Diplomatic History** (3 cr). See Hist J429-J430/J529-J530.

Hist **531 History of Indian-White Relations** (3 cr). See Hist J431/J531.

Hist **532 The Canadian and American Western Experiences** (3 cr). See Hist J432/J532.

Hist **535 Latin America: The Colonial Era** (3 cr). See Hist J435/J535.

Hist **537 Modern Canada** (3 cr). See Hist J437/J537.

Hist **538 Modern Mexico** (3 cr). See Hist J438/J538.

Hist **539 Modern Latin America** (3 cr). See Hist J439/J539.

Hist **540 Social Revolution in Latin America** (3 cr). See Hist J440/J540.

Hist **541 Comparative Slavery and Emancipation in the Atlantic World** (3 cr). See Hist J441/J541.

Hist **542 The Medieval Church: Europe in the Early and High Middle Ages** (3 cr). See Hist J442/J542.

Hist **543 The Medieval State: Europe in the High and Late Middle Ages** (3 cr). See Hist J543/J543.

Hist **547 The Age of the Renaissance and the Reformation** (3 cr). See Hist J447/J547.

Hist **551 Age of the French Revolution** (3 cr). See Hist J451/J551.

Hist **552 19th Century Europe** (3 cr). See Hist J452/J552.

Hist **555 20th Century Europe** (3 cr). See Hist J455/J555.

Hist **557 History of the Middle East** (3 cr). See Hist J457/J557.

Hist **558 Military History** (3 cr). See Hist J458/J558.

Hist **566 Eastern Europe Since 1774** (3 cr). See Hist J466/J566.

Hist **567 Russia to 1894** (3 cr). See Hist J467/J567.

Hist **568 Russia and Soviet Union Since 1894** (3 cr). See Hist J468/J568.

Hist **569 Modern France** (3 cr). See Hist J469/J569.

Hist **570 Germany and Central Europe Since 1815** (3 cr). See Hist J470/J570.

Hist **573 Tudor England** (3 cr). See Hist J473/J573.

Hist **582 Japan, 1600 to Present** (3 cr). See Hist J482/J582.

Hist **583 Traditional Chinese Civilization** (3 cr). See Hist J483/J583.

Hist **584 Modern China, 1840s to Present** (3 cr). See Hist J484/J584.

Hist **591-592 Historiography** (3 cr). Nature of history; major historians; ideas in history; philosophy of history; bibliography. Hist 591: U.S. historians. Hist 592: European and British historians.

Hist **597 Practicum: Teaching College History** (1 cr, max 4). Required for graduate students assigned to survey course sections. Does not satisfy 78-cr requirement for doctorate. Graded P/F. Prereq: perm of dept chair.

Hist **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Hist **600 Doctoral Research and Dissertation** (cr arr).

Hydrology

John S. Oldow, Head, Dept. of Geology and Geological Engineering (320 Mines Bldg. 83844-3022; phone 208/885-6192).

Hydr **500 Master's Research and Thesis** (cr arr).

Hydr **501** (s) **Seminar** (cr arr). Graded P/F. Prereq: perm.

Hydr **502** (s) **Directed Study** (cr arr). Prereq: perm.

Hydr **503** (s) **Workshop** (cr arr). Prereq: perm.

Hydr **563 Hydrogeology** (3 cr). Same as GeoE 563. Equations governing single fluid flow through saturated porous media under various geologic conditions; models, general relations between flow systems and water quality, and between surface and ground water. Prereq: Geol 409, Math 275, or perm.

Hydr **WS566 Groundwater Geochemistry** (4 cr). WSU C E and Geol 579. Processes controlling the quality and chemistry of groundwater; applications to geologic and water resource problems. Two lec and one 2-hr lab a wk. Prereq: Geol 409 or perm.

Hydr **568 Well Hydraulics** (3 cr). Analysis of problems that have confronted the geohydrologist since the inception of quantitative methods. Prereq: Hydr 563.

Hydr **569 Contaminant Hydrogeology** (3 cr). Characteristics of contaminant migration in ground water systems including analysis of field problems. Prereq: Hydr 566.

Hydr **ID572 Ground Water Management** (3 cr). WSU C E 578. Hydrologic, economic, and legal factors controlling development and management of ground water resources.

Hydr **ID575 Design and Construction of Water Wells** (3 cr). WSU C E 506. Analysis of geologic and engineering factors important in design, construction, operations, and maintenance of water wells.

Hydr **577 Computer Applications in Geohydrology** (3 cr). Numerical modeling of groundwater systems with particular emphasis on finite difference methods. Prereq: Geol 409, CS 105, or perm.

Hydr **579 Hazardous Waste Site Remediation Design** (3 cr). See ChE 579.

Hydr **597** (s) **Practicum** (cr arr). Prereq: perm.

Hydr **598** (s) **Internship** (cr arr). Prereq: perm.

Hydr **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Industrial Technology Education

Jerry L. Tuchscherer, Director, Div. of Adult, Counselor, and Technology Education (210 Educ. Bldg. 83844-3083; phone 208/885-6556).

ITED **110 Introduction to Technology** (2 cr). Intro to modern technology including communication, manufacturing, construction, and transportation. Two lec and 2 hrs of lab a wk.

ITED **111 Computer Skills** (3 cr). See BuEd 111.

ITED **R115 Operational Safety** (3 cr). Fundamentals of industrial safety; fire protection, industrial hygiene, radiological safety, safety regulations.

ITED **120 Principles of Technology I** (3 cr). Application of physical science in industrial situations; emphasizes principles rather than specifics of technology; illustrates application of mathematics associated with these principles. Three lec and 2 hrs of lab a wk. Enrollment per section limited to lab stations available.

ITED **121 Principles of Technology II** (3 cr). Continuation of ITED 120. Advanced units of applied physics with focus on major systems of mechanical, fluid, thermal, and electrical. Three lec and 2 hrs of lab a wk. Prereq: ITED 120.

ITED **130 Basic Electronics I** (3 cr). For beginning students with no experience in electricity; properties of resistors, capacitors, and inductors in electrical circuit; basics of power distribution system and house wiring; use of meters and oscilloscopes in lab. Three 1-hr lec and one 2-hr lab a wk. Enrollment per section limited to lab stations available. Knowledge of algebra recommended.

ITED **131 Electronics II** (3 cr). Continuation of ITED 130. Fundamentals of diodes, power supplies, transistor amplifiers, oscillators, and communication devices. Three 1-hr lec and one 2-hr lab a wk. Enrollment per section limited to lab stations available. Prereq: ITED 130 or equiv; knowledge of algebra recommended.

ITED **R135 Electrical Systems** (3 cr). Fundamentals of AC/DC circuits and components, motors, transformers, and switchgear, national electrical code wiring requirements.

ITED **140 Wood Technics** (3 cr). Basic fabricating skills in machine and tool processing of wood material and products; technical information on a wide range of wood and allied products; selection and fabrication of wood products. Two lec and 3 hrs of lab a wk. Enrollment per section limited to lab stations available.

ITED **170 Wood Product Design and Fabrication** (3 cr). Principles of design applied to a wide variety of wood products and fabrication processes; furniture, cabinetwork, laminated products, molding, wood turning, silicon rubber mold production. Two lec and 3 hrs of lab a wk. Enrollment per section limited to lab stations available. Prereq: ITED 140.

ITED **200** (s) **Seminar** (cr arr). Prereq: perm.

ITED **203** (s) **Workshop** (cr arr). Prereq: perm.

ITED **204** (s) **Special Topics** (cr arr). Prereq: perm.

ITED **R210 Introduction to Industrial Efficiency** (3 cr). Industrial engineering techniques and approaches for supervisors.

ITED **R211 Introduction to Quality Assurance** (3 cr). Overview; emphasis on nuclear industry; planning, managing, conducting, and evaluating quality assurance program.

ITED **213 Technical Sketching** (2 cr). Sketching techniques applied to industrial drawing; emphasis on sketching or mechanical drawings, pictorials, and architectural forms. One lec and 1 hr of lab a wk.

ITED **R217 Principles of Dimensional Inspection** (3 cr). Concepts, principles, classification, and control in dimensional inspection for quality assurance.

ITED **218 Power, Energy, and Transportation** (3 cr). Internal-external combustion engines; solar, wind, water, biomass, and nuclear energy; lab experience in generating, transporting, and converting energy forms. Enrollment per section limited to lab stations available. Three lec and 2 hrs of lab a wk.

ITED **237 Integrated Circuits and Semiconductor Devices** (3 cr). Basic theory and application of field effects transistors, integrated circuits, op-amps, optoelectronic devices, and miscellaneous semiconductor devices. Enrollment per section limited to lab stations available. Prereq: ITED 130, 131, or equiv.

ITED **238 Digital Electronics** (3 cr). Basic logic circuits used in digital devices; included AND/OR gates, NAND, NOR, Exclusive-or gates, and application of the gates to construct flip-flops, counters, adders, and converters; includes characteristics of logic families and memory devices. Enrollment per section limited to lab stations available. Prereq: ITED 237 or equiv.

ITED **250 Introduction to Metals Manufacturing** (3 cr). Intro to manufacturing theory, applications, and processes including research and development, starting and organizing manufacturing companies, and product production and marketing. Three lec and 3 hrs of lab a wk.

ITED **253 Advanced Metals Manufacturing** (3 cr) Advanced industrial manufacturing theory, applications, and processes including specialized access of production, design, research, and development of manufactured products. Three lec and 3 hrs of lab a wk. Prereq: ITED 250.

ITED **R262 Piping Design** (3 cr). Piping schedules, pressure ratings, specifications, pipe stress calculations, and hanger selection; system component selection and specification.

ITED **R263 Structures and Concrete Design** (3 cr). Column and beams design and selection, use of steel construction handbook joint design; simple concrete slab and wall design. Note: Will not substitute for engineering degree requirement.

ITED **265 Computer Aided Drafting/Design** (2 cr). Application of fundamental principles of computer aided drafting and design; theory of and skill development in file creation, digitizing, plotting, and computer assisted design. One lec and 2 hrs of lab a wk.

ITED **270 Technical Competence** (1-10 cr, max 10). Technical competence is gained from experience in areas of concentration related to the bachelor of science degree in vocational education or technology. Grades for successful completion of ITED/VoEd 270, 370, and 470 will be transcripted at P (pass) during the student's last semester and completion of all degree requirements. Max 32 cr in any combination of ITED 270, 370, 470, 490, 491, and 492.

ITED **280 Building Construction Technology** (3 cr). Systems approach to building construction technology, including footings, foundations, floor, wall, ceiling and roof systems; building materials and their use in construction. Two lec and 3 hrs of lab a wk. Enrollment per section limited to lab stations available. Prereq: ITED 140, 170.

ITED **299** (s) **Directed Study** (cr arr). Prereq: perm.

ITED **300 Finishing Materials and Methods** (2 cr). Alt/yrs. Methods and materials for finishing wood, metal, composition board, plastics, and other industrial products. Enrollment per section limited to lab stations available.

ITED **303 Advanced Machining Technology** (2-3 cr). Practice in fabrication of metals beyond that covered in ITED 253; extra cr for individual project. Charge for materials payable at Controller's Office. One lec and one 3-hr lab a wk. Enrollment per section limited to lab stations available. Prereq: perm.

ITED **328 Computer Operating Systems for Technology** (3 cr) (ITED 428). Advanced DOS, multi-tasking and network operating systems, planning and maintenance of computer systems. Enrollment per section limited to computer stations available. Prereq: BuEd/ITED 111 or perm.

ITED **R330 Industrial Instrumentation I** (3 cr). Use of electronic circuits and devices for process parameter measurements.

ITED **R331 Industrial Instrumentation II** (3 cr). Methods of process control from digital and analog signals; investigation of computer control concepts.

ITED **R333 Computer Electronics** (3 cr). Logic of circuits, basic circuits used in computers, and interfacing hardware for computer peripherals.

ITED **R338 Thermal and Fluid Fundamentals for Technology** (3 cr). Fundamentals of statics, fluid mechanics, thermodynamics, and heat transfer for use in the industrial technology field. Three lec and 4 hrs of lab a wk. Prereq: Math 170, Phys 211, Chem 101; strongly recommended: biochemistry, human physiology.

ITED **R340 Nondestructive Examination Techniques and Methods** (3 cr). Intro to nondestructive testing, liquid penetrant exam, magnetic particle exam, and radiography in modern industry.

ITED **360 Graphic Communication** (3 cr). Study of information and skills relative to graphic reproduction; using tools, materials, and processes pertaining to the printing-graphic arts industry. Enrollment per section limited to lab stations available. Two lec and 3 hrs of lab a wk.

ITED **R362 Environmental Health** (3 cr). Types, mechanisms, and magnitudes of toxicity and their relation to the human system as an industrial environmental problem; all types of metals, compounds, and reagents and their influence on human productivity; sampling and analysis of contaminants.

ITED **R363 Fire Protection Safety** (3 cr). Basic industrial safety practices as applied to fire protection services.

ITED **R364 Hazardous Materials** (3 cr). Handling, transportation, and storage of hazardous materials; how to protect and suppress fires that occur in hazardous materials.

ITED **365 Industrial Supervision** (3 cr). Alt/yrs. Principles and practices; duties and responsibilities of plant supervisors; use of rating scales and other employee evaluation devices; supervisory methods used in on-the-job and in-plant training program; methods of conducting job analysis; preparation and use of job descriptions.

ITED **370 Technical Competence** (1-10 cr, max 10). See ITED 270.

ITED **375 Heat Treatment of Metals** (2 cr). Properties of metals, annealing and normalizing, hardening, tempering, surface hardening, stress relief of welds; equipment and methods. One lec and one 3-hr lab a wk. Enrollment per section limited to lab stations available. Prereq: perm.

ITED **380 Computer Numerical Control Manufacturing** (3 cr). Overview; advanced computer aided drafting, computer aided manufacturing, computer numerical control, and robotics, with lab applications. Enrollment per section limited to lab stations available. Three lec and 3 hrs of lab a wk. Prereq: ITED 328 or equiv.

ITED **382 Computer Hardware Technology** (3 cr). Hardware and software knowledge and skills necessary to purchase, maintain, and repair personal computer systems; not a beginning computer class. Three lec and 3 hrs of lab a wk. Recommended preparation: knowledge of disk operating systems and multi-tasking systems.

ITED **400** (s) **Seminar** (cr arr). Prereq: perm.

ITED **R401 Principles of Quality Assurance** (3 cr). Preparation for Quality Engineering Certificate Exam offered by American Society for Quality Control.

ITED **403** (s) **Workshop** (cr arr). Prereq: perm.

ITED **404** (s) **Special Topics** (cr arr). Prereq: perm.

ITED **J415/J515 Microcomputer Applications** (3 cr). See BuEd J415/J515.

ITED **J419/J519 Word Processing** (3 cr). See BuEd J419/J519.

ITED **425 Advanced Electricity-Electronics** (3 cr). Independent readings, research, and lab experimentation. Enrollment per section limited to lab stations available. Prereq: ITED 235, 236, or perm.

ITED **426 Analysis, Curriculum, and Evaluation** (3 cr). See VoEd 426.

ITED **429 Student Organizations** (1 cr, max 4). Intro to industrial technology student organizations, including organization, planning, implementation, and evaluation of student activities for industrial technology student organizations. One-half hr lec and 2-1/2 hrs of lab a wk.

ITED **R430 Systems Safety Analysis** (3 cr). Principles of system safety; analytical trees; hazard and risk analyses; accident investigation.

ITED **R433 Quality Auditing** (3 cr). Industrial value of audit as a management tool; audit methods and techniques; present practical examples related to real-life applications and benefits.

ITED **R434 Quality Assurance Organization and Management** (3 cr). Industrial management principles applied to effective economic control of quality assurance activities.

ITED **R435 Industrial Transportation Safety** (3 cr). Principles of safety in all aspects of industrial transportation; roads, railroads, air, water, pipeline.

ITED **444 Telecommunications** (3 cr). Same as ED 444. Advanced experimental telecommunications theory, telecommunications equipment, and data communications; applications of telecommunications theory and principles at work, at school, and in personal endeavors. Three lec and 2 hrs of lab a wk.

ITED **450 Industrial Safety** (3 cr). See VoEd 450.

ITED **451 School Lab Planning and Administration** (3 cr). See VoEd 451.

ITED **R452 Fire Protection System Design** (3 cr). Methods and practical design of fire protection systems (water, gas, chemicals); testing and maintenance of systems. Prereq: perm.

ITED **R454 Environmental Health II** (3 cr). Intro of human system response and susceptibility to problems of occupation originating from air conditioning, air cleaning, ventilation, respiratory devices, air pressure, noise, lighting, temperature, and radiation; identification, documentation, and reporting of problems and results.

ITED **460 Desktop Publishing** (3 cr). See BuEd 460.

ITED **465 Environmental Regulations** (3 cr). Survey of major environmental statutes and their implementing regulations; emphasis on practical applications.

ITED **470 Technical Competence** (1-12 cr, max 12). See ITED 270.

ITED **472 Industrial Technology Teaching Methods** (3 cr). Dem, lec, and problem solving; preparation and use of instructional aids, individual instruction sheets, and programmed instructional materials.

ITED **475 LAN Technology** (3 cr). Advanced LAN technologies emphasizing design and implementation of most LAN technology systems. Two lec and 2 hrs of lab a wk. Prereq: ITED 428 or Bus 352 or perm.

ITED **R485 Waste Management Alternatives** (3 cr). Basic introduction to waste management including regulatory, technical, and political implications of waste management.

ITED **490-491-492 Advanced Technical Competence** (1-10 cr, max 30). Supervised practicum or on-the-job experience designed to enable the student to gain further depth in technical competence as well as in current industrial technology. Graded P/F. Max 32 cr in any combination of ITED 270, 370, 470, 490, 491, and 492.

ITED **499** (s) **Directed Study** (cr arr). Prereq: perm.

ITED **500 Master's Research and Thesis** (cr arr).

ITED **501** (s) **Seminar** (cr arr). Prereq: perm.

ITED **502** (s) **Directed Study** (cr arr). Prereq: perm.

ITED **503** (s) **Workshop** (cr arr). Prereq: perm.

ITED **504** (s) **Special Topics** (cr arr). Prereq: perm.

ITED **510** (s) **Professional Problems** (1-3 cr, max 9). Prereq: perm.

ITED **511** (s) **Technical Problems** (1-3 cr, max 6). Prereq: perm.

ITED **515 Microcomputer Applications** (2-3 cr). See BuEd J415/J515.

ITED **R518 Industrial Liability** (3 cr). Workman's compensation, second injury, insurance and self-insurance; third party responsibilities; product liability, personal liability; plant damage.

ITED **519 Word Processing** (3 cr). See BuEd J419/J519.

ITED **R520 Occupational Health Hazards** (3 cr). Field of industrial hygiene practice; focus on recognition, evaluation, and control of occupational health hazards.

ITED **R521 Accident Investigation** (3 cr). System safety concepts, principles, and methods; development of skills in accident investigation, audit and appraisal, operational readiness, and system safety analysis and review. Prereq: ITED 430.

ITED **R522 Risk Assessment** (3 cr). Risk analysis methods relative to safety problems and alterations.

ITED **R523 Industrial Safety Applications** (3 cr). Application of engineering science to safety problems; static and dynamic forces on structures, pressure systems; effects of temperature, chemicals, fatigue, and other agencies on strength of materials; use of vectors in engineering analysis.

ITED **543 Administration and Supervision in Vocational Education** (3 cr). See VoEd 543.

ITED **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Interdisciplinary Studies

Thomas E. Bitterwolf, Undergraduate Program Coordinator (112 Admin. Bldg. 83844-3154; phone 208/885-6426); Roger P. Wallins, Graduate Program Coordinator (112 Morrill Hall 83844-3017; phone 208/885-6243).

Intr **101** (s) **Freshman Transition Seminar** (2 cr). Open to freshmen; open to other students with permission. Cr not given for both Intr 101 and 102. Development of strategies for setting academic goals and coping with course work; includes study strategies, university orientation, learning styles, purpose of college, career options.

Intr **102** (s) **Freshman Interest Group** (2 cr). Open to freshmen; open to other students with permission. Cr not given for both Intr 101 and 102. Each seminar is organized around a topic of mutual interest; students study the seminar topic as well as a variety of transition topics such as college study skills and campus resources.

Intr **103 Integrated Science for Elementary Education Majors** (4 cr). Scientific method, physics and chemistry of atoms and molecules, molecules of life, chemical energy and thermodynamics, cellular structure, electrical circuits, tissues and organs. Two 3-hr class meetings a wk. Prereq: Math 143 and elementary ed major.

Intr **104 Integrated Science for Elementary Education Majors** (4 cr). Physics and biology of light, magnets and motors, geological evolution of the earth, forces shaping the earth, meteorology, fossil record and evolution, DNA and genetics, ecology, and topical issues in science. Two 3-hr class meetings a wk. Prereq: Intr 103.

Intr **126 Film and International Culture** (3 cr). Satisfies core requirement J-3-d. Interdisciplinary approach to diversity of modern culture as reflected in film art; comparative study of U.S. and foreign cultures; intro to film history, techniques, and criticism.

Intr **200** (s) **Seminar** (cr arr). Prereq: perm.

Intr **204** (s) **Special Topics** (cr arr). Prereq: perm.

Intr **299** (s) **Directed Study** (cr arr). Prereq: perm.

Intr **300** (s) **Seminar** (cr arr). Prereq: perm.

Intr **394 Technology and Societal Decisions** (3 cr). Engineering approach to decision making in society, including evaluation of alternatives based upon economic, social, and human values.

Intr **400** (s) **Seminar** (cr arr). Prereq: perm.

Intr **404** (s) **Special Topics** (cr arr). Prereq: perm.

Intr **411 Principles of Environmental Studies I** (3 cr). Historical aspects of environmental attitudes, perspectives, and action including the environmental awakening of the 1960s, environmental legislation of the 1970s, and environmental actions of the 1980s.

Intr **438 Pesticides in the Environment** (3 cr). See Soil 438.

Intr **490 Technology and Human Values** (2-3 cr). Ideological and value implications of technology for the future of humans and their environment.

Intr **497 Tutor Training** (1 cr). Training tutors for the Tutoring and Academic Assistance Center in the areas of learning strategies, study skills, problem solving, communication skills, group dynamics, and special population concerns; administrative recordkeeping and scheduling procedures necessary to the tutoring program. One and one-half hrs of lec a wk. Prereq: perm.

Intr **498 Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Prereq: perm.

Intr **499** (s) **Directed Study** (cr arr). Prereq: perm.

Intr **500 Master's Research and Thesis** (cr arr).

Intr **501** (s) **Seminar** (cr arr). Prereq: perm.

Intr **502** (s) **Directed Study** (cr arr). Prereq: perm.

Intr **503** (s) **Workshop** (cr arr). Prereq: perm.

Intr **504** (s) **Special Topics** (cr arr). Prereq: perm.

Intr **511 Principles of Environmental Studies II** (3 cr). Documents required in environmental studies, mechanics of preparing, use, and meaning of each for environmental action and/or application. Prereq: Intr 411.

Intr **521 Permitting Philosophy and Application** (3 cr). History of permitting and licensing related to environmental policy act both public and private, regulatory agencies, and permit applications for environmental programs. Prereq: Intr 511.

Intr **551 Environmental Toxicology** (3 cr). General principles in environmental toxicology; pollutants and transport-toxic impacts assessed.

Intr **589 Water Resources Seminar** (1 cr). Same as AgE, CE, Fish, For, Geol, or GeoE 589. Reports by faculty members and grad students on current problems and projects; reports are organized to give maximum interchange of ideas between divisions.

Intr **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Interior Architecture

Bruce T. Haglund, Chair, Dept. of Architecture (207 Art and Arch. South 83844-2451; phone 208/885-6781); Stephen G. Thurston, Director, Interior Architecture (109 Art and Arch. North 83844-2451; phone 208/885-7373).

Note: On registering for a studio course offered in this department, the student agrees that the department may retain work completed by the student. The department will make retained work available to the student for photographing.

IA **151 Introduction to Interior Design** (3 cr). Introduction to residential and commercial design and its relationship to other design disciplines; emphasis areas include basic design theory, vocabulary, and visual awareness of the built environment. Attendance at outside events (such as lectures and symposiums) is required.

IA **152 Interior Design I** (3 cr). Study of the relationship of design theory to the interior environment; exploration, through a variety of media, of the elements and principles of design, with emphasis on spatial relationships and color theory. Two lec, four hrs of lab a wk, and assigned work; attendance at outside events; some class jury sessions outside of scheduled hours. Prereq: Art 121, IA 151, or perm; prereq or coreq: Arch 156 or perm.

IA **200** (s) **Seminar** (cr arr). Prereq: perm.

IA **203** (s) **Workshop** (cr arr). Prereq: perm.

IA **204** (s) **Special Topics** (cr arr). Prereq: perm.

IA **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

IA **241 Design and Human Performance** (2 cr). Introduction to the concepts of human factors and the built environment in relation to design; emphasis areas include ergonomics, performance, anthropometrics, and perception.

IA **256 Basic Architectural Design** (3 cr). See Arch 256.

IA **281 History of the Interior Before Industrialization** (3 cr). Historical furnishings, furniture, interior architecture, and decorative arts from antiquity to beginning of the 20th century.

IA **282 History of the Interior: 20th Century** (3 cr). International in scope; social and aesthetic theories incl Arts and Crafts Movement, Art Nouveau, De Stijl, Bauhaus, International Style, Scandinavian furniture, modern classics manufactured in America by Knoll and Miller, and recent Italian innovations. Prereq: IA 281 or perm.

IA **299** (s) **Directed Study** (cr arr). Prereq: perm.

IA **351-352 Interior Design II-III** (4 cr). Intro to small scale commercial interior design theory and problem solving; emphasis on formation of interior spaces to correspond to function and flow patterns. Seven and one-half hrs of studio a wk; field trips reqd at student expense; some class jury sessions outside of scheduled hours. Prereq for IA 351: IA 152, 256 or perm. Prereq for IA 352: IA 351.

IA **368 Materials and Specifications** (3 cr). Indepth study of interior finishes, materials, and products; emphasis on performance characteristics, manufacturing methods, testing, codes, specifications, and professional liability. Field trips reqd at student expense. Prereq: FCS 123 or perm.

IA **400** (s) **Seminar** (cr arr). Prereq: perm.

IA **403** (s) **Workshop** (cr arr). Prereq: perm.

IA **404** (s) **Special Topics** (cr arr). Prereq: perm.

IA **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

IA **451-452 Interior Design IV-V** (5 cr). Advanced problems in commercial interior design requiring synthesis of related course work into comprehensive design resolution; projects will seek to refine the design decision making process by requiring development beyond schematic phases, e.g., integration of building systems, lighting design, interdisciplinary investigation, and understanding of cultural/environmental context. Nine hrs of studio a wk and assigned work; field trips reqd at student expense; some class jury sessions will meet outside of scheduled hours. Prereq for IA 451: IA 352, Arch 374 and 384. Prereq for IA 452: IA 451.

IA **478 Professional Practices for Interior Design** (3 cr). Interior designers' duties and responsibilities in professional practice; services, estimating, specifications, billing, and contracts.

IA **482 Introduction to Historic Preservation: Theories and Issues** (2 cr). See Arch 482.

IA **499** (s) **Directed Study** (cr arr). Prereq: perm.

International Studies

Richard A. Slaughter, Program Coordinator (1 Cont. Ed. Bldg. 83844-3229; phone 208/885-6527).

IS **200; 400** (s) **Seminar** (cr arr). Prereq: perm.

IS **203; 403** (s) **Workshop** (cr arr). Prereq: perm.

IS **204; 404** (s) **Special Topics** (cr arr). Prereq: perm.

IS **206; 406** (s) **Study Abroad** (cr arr). Prereq: perm of program coordinator.

IS **299; 499** (s) **Directed Study** (cr arr). Prereq: perm.

Landscape Architecture

Stephen R. Drown, Chair, Dept. of Landscape Architecture (204 Art and Arch. Annex 83844-2481; phone 208/885-7448).

LArc **155 Introduction to Landscape Architecture I** (1 cr). Introduction to the profession of landscape architecture; exposure to a range of professional issues through a series of lectures and presentations by faculty and visiting professionals.

LArc **156 Introduction to Landscape Architecture II** (1 cr). Attendance at a series of senior landscape architecture students' critiques and theses; preparation of a paper summarizing and comparing a select number of thesis topics.

LArc **200** (s) **Seminar** (cr arr). Prereq: perm.

LArc **203** (s) **Workshop** (cr arr). Prereq: perm.

LArc **204** (s) **Special Topics** (cr arr). Prereq: perm.

LArc **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

LArc **210 Computer Applications in Landscape Architecture** (2 cr). Exploration of hardware and software tools that are used by landscape architects throughout the design process; emphasis on CAD with an introduction to related landscape architecture specific tools.

LArc **247 Landscape Graphics** (3 cr). Development of techniques and skills in various media used in preparation of landscape architecture graphic presentations both in plan and perspective renderings. Selected field trips at student expense. Prereq: LArch major, LArch minor, or perm.

LArc **259 Landscape Architecture I** (6 cr). Introduction to landscape architecture design; emphasis on theory, process, and design elements as they apply to the profession; includes readings, lectures, field trips, small-scale design projects (parks, plazas, courtyards. Nine studio hrs a wk; field trips required at student expense; guest lectures required outside of class meeting time. Prereq: Eng 101 and 102 with minimum grade of C; Art 121.

LArc **260 Landscape Architecture I** (6 cr). Integration and application of principles acquired in plant materials, grading, and drainage, and in LArc 259 to small scale planning and design projects. Selected field trips at student expense; attendance at outside events (lectures, symposiums, films). Prereq: LArc 259.

LArc **270 Landscape Construction I** (4 cr). Grading and drainage, earthwork planimeter computations, cut and fill, and road layout (horizontal/vertical curves). Selected field trips at student expense. Prereq: LArch major, LArch minor, or perm; recommended preparation: Math 137 or 143.

LArc **288 Plant Materials I** (3 cr). Plant identification and selection; use of plant materials in relation to soils, topography, and climate; analysis of design principles in relation to plant compositions. Selected field trips at student expense.

LArc **289 Plant Materials II** (4 cr) (LArc 388). Continuation of LArc 288 with emphasis on plant design projects as they relate to small or large scale public and private use areas. Two lec and 4 hrs of lab a wk; selected field trips at student expense. Prereq: LArc 288.

LArc **299** (s) **Directed Study** (cr arr). Prereq: perm.

LArc **ID&WS358 Professional Office Practice in Landscape Architecture** (2 cr). WSU L A 480. Office organization, fees, contracts, bonding, bidding specifications, insurance, and relationships with subcontractors.

LArc **359 Landscape Architecture II** (6 cr). Intermediate scale planning and design problems that emphasize the analysis, development, and presentation of solutions for urban, rural, and regional housing and recreation projects; introduction of senior critique; common project done with Department of Architecture. Selected field trips at student expense. Prereq: LArc 260, LArc 270 or perm.

LArc **360 Landscape Architecture II** (6 cr). Intermediate scale planning and design projects that emphasize sustainable development practices for the urban and rural environment with the application of visual analysis techniques and the use of indigenous plant materials for restoration and rehabilitation. Selected field trips at student expense. Prereq: LArc 359.

LArc **371 Landscape Construction II** (4 cr). Study of landscape construction including electrical lighting, stormwater management, construction detailing, layout and specifications, retaining walls, paving, and the use of sustainable materials. Selected field trips at student expense. Prereq: LArch major, LArch minor, or perm.

LArc **385 GIS Primer** (3 cr). Intro to the theory and applications of geographic information systems (GIS), lab exercises on PC-based GIS package, and guest lecturers from industry and governmental agencies. Three hrs of lec-lab a wk.

LArc **ID&WS389 History of Landscape Architecture** (3 cr). WSU L A 260. Overview of man and the landscape from the pre-Egyptian civilization through Ancient Greece and Rome, the Middle Ages, the Renaissance, the Oriental, and including contemporary styles and trends.

LArc **400** (s) **Seminar** (cr arr). Prereq: perm.

LArc **403** (s) **Workshop** (cr arr). Prereq: perm.

LArc **404** (s) **Special Topics** (cr arr). Prereq: perm.

LArc **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

LArc **459 Landscape Architecture III** (6 cr). Design development and the preparation of contract documents. Selected field trips at student expense; attendance at outside events (lectures, symposiums, films). Prereq: LArc 270, LArc 360, LArc 371 or perm.

LArc **460 Landscape Architecture III** (6 cr). Student critique of a professional landscape architectural project; completion of a comprehensive project(s) demonstrating mastery in areas of land planning and/or design, plant materials, construction, graphics, and computers. Prereq: LArc 459.

LArc **480 Issues for the Emerging Landscape** (3 cr). A capstone experience for students in landscape architecture; focus on the emerging issues of landscape architecture and associated disciplines.

LArc **490 Computer-Aided Regional Landscape Planning** (3 cr). Open to all majors. Study of techniques and methods for regional-scale landscape planning using ARC/INFO, a state-of-the-art geographic information system (GIS); application of ecological principles and land use analysis; emphasis on use of GIS as tool for landscape planning and management. Prereq: LArc 385 or Geog 385 or perm.

LArc **499** (s) **Directed Study** (cr arr). Prereq: perm.

Law

John A. Miller, Dean, College of Law (101 Law Bldg. 83844-2321; phone 208/885-6422).

For complete descriptions of the courses in this section (other than Law 511), see the annual announcement of the College of Law. Registration by non-law students in any course offered by the College of Law requires permission in advance by the associate dean and the instructor of the course.

Law **ID511 Legal Process** (3 cr). WSU ES/RP 511. Not open to J.D. candidates for cr toward the degree; will ordinarily be confined to grad students and srs with superior academic records. Designed to acquaint non-law student with legal process in general and role of the judiciary in natural resource management in particular; provide non-law grad students with sufficient legal research, writing, and reasoning skills to enroll in regular law courses.

Law **805 Introduction to Law and Procedure** (3 cr).

Law **806 Procedure II** (3 cr).

Law **807-808 Property I-II** (3 cr).

Law **809-8I0 Torts I-II** (3 cr; 2 cr).

Law **812 Criminal Law** (3 cr).

Law **813-814 Contracts I-II** (3 cr).

Law **815 Legal Research and Writing** (3 cr).

Law **901** (s) **Seminar** (cr arr).

Law **902 Constitutional Law I** (4 cr) (Law 811).

Law **904 Federal Courts** (3 cr).

Law **905 Constitutional Law II** (2 cr).

Law **906 Seminar, Natural Resources Law and Policy** (3 cr).

Law **907 Administrative Law** (3 cr).

Law **908 Introduction to the Law of the Workplace** (4 cr).

Law **909 Energy Law** (3 cr).

Law **910 Antitrust and Trade Regulation** (3 cr).

Law **911 Principles of Suretyship** (1 cr).

Law **915 International Business Transactions** (3 cr).

Law **916 Public International Law** (2 cr).

Law **917 Negotiation and Alternative Dispute Resolution** (2 cr).

Law **919 Business Associations I** (4 cr).

Law **920 Business Associations II** (3 cr).

Law **921 Basic Legal Accounting** (1 cr).

Law **922 Unfair Competition** (2 cr).

Law **923 Negotiable Instruments, Bank Collections and Deposits, and Other Payment Systems** (3 cr).

Law **924 Sales** (3 cr).

Law **925 Creditors' Rights and Secured Transactions** (3 cr).

Law **926 Bankruptcy** (3 cr).

Law **927 Pass Through Entity Taxation** (3 cr).

Law **930 Taxation** (3-4 cr).

Law **931 Corporate Taxation** (3 cr).

Law **932 Estate Planning** (3 cr).

Law **935 Idaho Constitutional Law** (1 cr).

Law **936 American Legal History** (2 cr).

Law **941 Wills, Estates, and Trusts** (3 cr).

Law **942 Water Law** (3 cr).

Law **943 Real Estate Finance** (3 cr).

Law **944 Local Government and Land Use Law** (3 cr).

Law **945 Community Property** (2 cr).

Law **947 Seminar, Environmental Law** (3 cr).

Law **ID948 Seminar, Public Land Resources Law** (3 cr). WSU ES/RP 549.

Law **949 Indian Law** (3 cr).

Law **950 Evidence** (3 cr).

Law **952 Remedies** (3 cr).

Law **953 Criminal Procedure** (3 cr).

Law **954 Practice Court** (3 cr).

Law **955 Appellate Advocacy Program** (1 or 2 cr).

Law **956 Appellate (Moot) Court/Mock Trial** (1 or 2 cr).

Law **957 Mock Trial** (2 cr).

Law **960 Conflict of Laws** (2 cr).

Law **961 Seminar, Jurisprudence** (2 cr).

Law **962 Professional Responsibility** (2 cr).

Law **963 Family Law** (3 cr).

Law **971 Lawyering Process Seminar** (2 cr).

Law **972 Legal Externship** (1 cr).

Law **973 Public Agency Externship** (1-10 cr, max 10).

Law **974 Legal Aid Internship** (5 cr; 3 cr).

Law **982 Law Review** (1-4 cr, max 4).

Law **983 Legal Research** (1-2 cr, max 4).

Law **998** (s) **Staffordshire Study Abroad** (cr arr).

Law **999** (s) **Study Abroad or Off Campus** (cr arr).

Library Science

Lowell N. Jackson, Director, Div. of Teacher Education (510 Educ. Bldg. 83844-3082; phone 208/885-6586).

LibS **299** (s) **Directed Study** (cr arr). Prereq: perm.

LibS **400** (s) **Seminar** (cr arr). Prereq: perm.

LibS **404** (s) **Special Topics** (cr arr). Prereq: perm.

LibS **C419 Computer Applications in Libraries** (3 cr). Trends and developments in library automation; practical applications of microcomputers to library work and administration. Note: This is an academic course intended to teach fundamental terms and concepts. It is not a course on automating a library.

LibS **C420 Classification and Cataloging** (4 cr). Organization of library materials, principles of cataloging, subject analysis, classification, bibliographic methods, Dewey decimal system.

LibS **C421 Acquisitions and Collection Development in Libraries** (3 cr). Evaluation and selection of books and other materials for libraries; analysis of community library needs and interests.

LibS **C422 Use of the School Library** (2 cr). Methods of interesting students in the library and using it to best advantage.

LibS **C423 Introduction to Reference Work** (3 cr). Reference books in school and public libraries; selecting reference collections.

LibS **C424 Information Sources on the Internet for Libraries** (3 cr). Principles of development and trends in Internet information resources that libraries access and use; emphasis on searching, evaluating, and providing to patrons needed reference material.

LibS **C425 Organization and Management of Small Libraries** (4 cr). Organization and management of school libraries.

LibS **C427 Library and Media Center Practicum** (1-3 cr). Experience in a library or other information center under professional supervision. Ninety hours of supervised experience per credit. Prereq: 6 cr in library and information science and perm.

LibS **499** (s) **Directed Study** (cr arr). Prereq: perm.

Martin Institute

Richard A. Slaughter, Director, Martin Institute for Peace Studies and Conflict Resolution (1 Cont. Educ. Bldg. 83844-3229; phone 208/885-6527).

Mrtn **486 Public Involvement in Natural Resource Management** (3 cr). See RRT 486.

Mrtn **490 The Causes of War** (3 cr). Scientific analysis of the causes of the major wars since World War I. Cr not granted for both Mrtn 490 and PolS 449.

Mrtn **496 International Organizations and International Law** (3 cr). See PolS 440.

Mathematics

Erol Barbut, Chair, Dept. of Mathematics (300 Carol Ryrie Brink Hall 83844-1103; phone 208/885-6742).

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: Math 170-175-275-471-472.

CREDIT LIMITATIONS: Math 107 carries no credit after Math 137 or 143; Math 137 carries no credit after Math 143; Math 143 carries no credit after 160 or 170; Math 161 carries no credit after Math 175; Math 170 carries 2 credits after 160; Math 160 carries no credit after 170.

Also see regulation J-5-e.

Math **107 Intermediate Algebra** (3 cr). Carries no credit after Math 137 or 143. Review of algebra including factoring, rational expressions, exponents, radicals, quadratic equations, equations of lines. Does not satisfy core requirement.

Math **123 The Spirit of Mathematics** (3 cr) (Math 101). Satisfies core requirement J-3-c. For students who are curious about what mathematics is and what mathematicians do but who do not plan to use mathematics as a tool in their careers; discussion of some aspects of mathematics through study of problems of "applied" and of "pure" type, taken from areas such as number theory, geometry, topology, probability, and combinatorics; discussion of the historical development.

Math **130 Finite Mathematics** (4 cr) (C) (Math 111). Satisfies core requirement J-3-c. Systems of linear equations and inequalities, matrices, linear programming, and probability. Prereq: 1 yr high school algebra, 1 yr plane geometry, and sufficient score on SAT, ACT, or Math Placement Test.

Math **137 Algebra with Applications** (3 cr). Satisfies core requirement J-3-c. Carries no credit after Math 143. Algebraic, exponential, logarithmic functions, systems of equations, applications. Prereq: 1-1/2 years high school algebra, 1 yr high school plane geometry, and sufficient score on SAT, ACT, or Math Placement Test; or Math 107 with grade of C or better. To remain enrolled in the course a student must pass an Algebra Skills Test given within the first three weeks of the course. It is recommended that Math 137 be taken within two years of passing Math 107 or its equivalent.

Math **143 Pre-calculus Algebra and Analytic Geometry** (3 cr) (C) (Math 140). Satisfies core requirement J-3-c. Carries no credit after Math 160 or 170; carries 2 credits after Math 137. Algebraic, exponential, logarithmic functions; graphs of conics; zeros of polynomials; systems of equations, induction. Prereq: 1-1/2 yrs high school algebra, 1 yr high school plane geometry, and sufficiently high score on SAT, ACT, or Math Placement Test; or Math 107 with grade of C or better. To remain enrolled in the course a student must pass an Algebra Skills Test given within the first three weeks of the course. It is recommended that Math 143 be taken within two years of passing Math 107 or its equivalent.

Math **144 Analytic Trigonometry** (2 cr) (C) (Math 179). Not open for cr to students who have previous high school or college cr in trigonometry. Trigonometric functions, inverse functions, applications. Prereq: 2 yrs high school algebra (or Math 143) and 1 yr plane geometry, and perm of dept. Concurrent enrollment in Math 143 or 170 permitted.

Math **160 Survey of Calculus** (4 cr) (C). Satisfies core requirement J-3-c. Carries no credit after Math 170. Functions, graphing, derivative, integral, exponential and logarithmic functions, functions of several variables. Prereq: One yr of high school geometry and one of the following: (1) 1-1/2 yrs high school algebra and sufficiently high score on SAT, ACT, or Math Placement Test or (2) Math 143.

Math **161 Survey of Calculus II** (4 cr). Carries no credit after Math 175. Functions of several variables, integration, probability, and infinite series; applications to business, social sciences, and the life sciences. Prereq: Math 160.

Math **170 Analytic Geometry and Calculus I** (4 cr) (C) (Math 180). Satisfies core requirement J-3-c. Carries 2 credits after Math 160. Functions, limits, continuity, differentiation, integration, applications, differentiation and integration of transcendental functions. Prereq: 2 yrs high school algebra (or Math 143), 1 yr plane geometry, 1/2 yr analytic trigonometry, and sufficiently high score on SAT, ACT, or Math Placement Test.

Math **175 Analytic Geometry and Calculus II** (4 cr) (Math 190). Differentiation and integration of transcendental functions, integration techniques, general mean value theorem, numerical techniques, and series. Prereq: Math 180.

Math **176 Discrete Mathematics** (3 cr). Induction, set theory, graph theory, number systems, Boolean algebra, and elementary counting. Prereq: two yrs high school algebra and sufficiently high score on SAT, ACT, or Math Placement Test; or Math 143.

Math **R181 Analytic Geometry and Calculus I** (3 cr). Functions, rate of change, limits, continuity, differentiation of algebraic functions, applications, and integration. Prereq: perm.

Math **R191 Analytic Geometry and Calculus II** (3 cr). Application of the definite integral, differentiation and integration of transcendental functions, methods of integration, and determinants and linear equations. Prereq: perm.

Math **R201 Analytic Geometry and Calculus III** (3 cr). Two- and three-dimensional analytic geometry, vectors, hyperbolic functions, parametric equations, and polar coordinates. Prereq: perm.

Math **202** (s) **Seminar** (cr arr). Prereq: perm.

Math **204** (s) **Special Topics** (cr arr). Prereq: perm.

Math **R211 Analytic Geometry and Calculus IV** (3 cr). Partial derivatives, infinite series, and complex numbers and functions. Prereq: perm.

Math **215 Seminar in Topology of the Plane** (3 cr). Carries no credit after Math 411 or 471. Primary goal is to teach students to prove theorems; open and closed sets, connectedness, compactness, continuity, etc. Class size limited to 15. Prereq: Math 170, 175, and perm.

Math **235 Mathematics for Elementary Teachers I** (3 cr) (C). Mathematical development of arithmetic and problem solving as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk. Prereq: passing Arithmetic Skills Test, 1 year of plane geometry, and Math 143 or 137 (or sufficient score on SAT, ACT, or Math Placement Test).

Math **236 Mathematics for Elementary Teachers II** (3 cr) (C). Mathematical development of informal geometry, problem solving, and probability and statistics as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk. Prereq: Math 235.

Math **253 Principles of Statistics** (3 cr). See Stat 251.

Math **255 Applied Actuarial Science I** (0 cr). Review of calculus and linear algebra in preparation for actuarial exam 1. Prereq: Math 275, 330.

Math **275 Analytic Geometry and Calculus III** (3 cr) (Math 210). Vectors, functions of several variables, and multiple integration. Prereq: Math 175.

Math **286 Theory of Numbers** (3 cr). Elementary number theory, including divisibility properties, congruences, and Diophantine equations. Prereq: Math 143 or perm.

Math **299** (s) **Directed Study** (cr arr). Prereq: perm.

Math **310 Ordinary Differential Equations** (3 cr). Classification, initial and boundary value problems of one variable, exact equations, methods of solving higher-order linear equations, second-order equations with constant coefficient, series solutions, systems of linear equations, Laplace transforms, and existence theorems. Prereq: Math 175 (275 recommended).

Math **H315 Topics in Pure Mathematics** (3 cr). Carries no credit after Math 215. A topic selected each yr that develops skill and appreciation for theoretical nature of mathematics. Prereq: Math 160 or 170 and perm of director of University Honors Program.

Math **326 Linear Programming** (3 cr). Geometric solutions, simplex method, duality and revised simplex method, sensitivity, integer programming, applications. Prereq: Math 160 or 170.

Math **330 Linear Algebra** (3 cr). Linear equations, matrices, linear transformations, eigenvalues, diagonalization; applications. Prereq: Math 160 or 170.

Math **346 Applied Combinatorics** (3 cr). Elementary counting methods, generating functions, recurrence relations, Polya's enumeration, enumeration of graphs, trees, searching, combinatorial algorithms. Prereq: Math 175; recommended prereq: Math 176 or 376 or 475.

Math **371 Mathematical Physics** (3 cr). See Phys 371.

Math **376 Discrete Mathematics II** (3 cr). Selected topics from discrete mathematics such as graph theory, modeling, and optimization. Prereq: Math 176 or perm.

Math **390 Geometry** (3 cr). Topics chosen from finite geometries, Euclidean and non Euclidean geometries, convexity, transformational geometry, and intuitive geometry. Prereq: high school geometry and Math 170.

Math **400** (s) **Seminar** (cr arr). Prereq: perm.

Math **404** (s) **Special Topics** (cr arr). Prereq: perm.

Math **411 Elementary Topology** (3 cr). Alt/yrs. Metric spaces; topological spaces; compactness; connectedness, continuity. Prereq: Math 275 or perm.

Math **420 Complex Variables** (3 cr). Alt/yrs. Complex numbers, elementary functions, derivatives, the residue theorem, conformal mappings, contour integration, infinite series, applications. Prereq: Math 275.

Math **426 Discrete Optimization** (3 cr). Alt/yrs. Optimization on graphs, networks and flows, and related topics. Prereq: Math 175.

Math **432 Numerical Linear Algebra** (3 cr). Alt/yrs. Analysis of efficiency and accuracy of large linear algebra problems; special emphasis on solving linear equations and finding eigenvalues. Prereq: Math 275, 330, and knowledge of a computer language.

Math **433 Numerical Analysis** (3 cr). Analysis of numerical methods useful in solving applied problems; solution of nonlinear equations, interpolation, numerical differentiation and integration, numerical solution of differential equations. Prereq: Math 275, 330, and knowledge of a computer language.

Math **435** (s) **Topics in Applied Mathematics** (3 cr). Topics chosen from fields of current interest in applied mathematics; inquire at the Department of Mathematics for a description of topics for future semesters. Prereq: perm.

Math **441 Problem Solving Through History** (3 cr). Historical study of approaches to solving problems in geometry, number theory, and set theory. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **442 Linear Algebra: Its Applications for Teachers** (3 cr). Linear equations, matrices, linear transformations, and eigenvalues. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **443 Foundations of Calculus** (3 cr). Real numbers, sequences, topology of the real numbers, continuous functions, differentiations, and integration; emphasis on developing the conceptual understanding needed to teach calculus in secondary school. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **444 Problems in Geometry** (3 cr). Exploration of topics in geometry with emphasis on developing geometric reasoning and problem solving. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **445 Groups and Symmetry** (3 cr). Exploration of groups, symmetry, and permutations. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **446 Rings and Fields** (3 cr). Exploration of properties of rings and fields, with applications. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **447 Linear Optimization** (3 cr). Linear and integer programming, transportation algorithms, and game theory; applications to business and resource management problems. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **449** (s) **Special Topics** (3 cr). Special topics of interest to mathematics teachers. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math **ID&WS451-ID&WS452 Probability Theory and Mathematical Statistics** (3 cr). Same as Stat 451-452. WSU Math 443-456. Random variables, limit theorems, distribution of sample statistics, estimation, testing hypotheses. Prereq: Math 275.

Math **ID&WS-J453/ID&WS-J538 Stochastic Models** (3 cr). Same as Stat J453/J544. WSU Stat 544. Alt/yrs. Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments reqd for grad cr. Prereq: Math 451 or perm.

Math **461-462 Abstract Algebra** (3 cr). Groups, rings, and fields. Recommended prereq for Math 461: at least one of the following: Math 215, 286, 330, 390.

Math **471-472 Advanced Calculus** (3 cr). Topology of Euclidean n-space, limit and continuity, differentiation, integration. Prereq: Math 275 and 215, or perm.

Math **475 Analysis of Algorithms** (3 cr). Same as CS 495. Measures of efficiency; standard methods and examples in the design and analysis of algorithms. Prereq: CS 213 and Math 175.

Math **480 Partial Differential Equations** (3 cr). Alt/yrs. Intro to Fourier analysis, application to solution of partial differential equations; classical partial differential equations of engineering and physics. Prereq: Math 310.

Math **485 Theory of Computation** (3 cr). Same as CS 490. Mathematical models of computation, including finite automata and Turing machines. Prereq: perm.

Math **490 Introduction to Set Theory** (3 cr). Alt/yrs. Set operations, functions, binary operations and relations, cardinal and ordinal numbers, axiom of choice, partially ordered sets, and Zorn's lemma. Prereq: Math 275.

Math **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm of dept.

Math **499** (s) **Directed Study** (cr arr). Prereq: perm.

Math **500 Master's Research and Thesis** (cr arr).

Math **501** (s) **Seminar** (cr arr). Prereq: perm.

Math **502** (s) **Directed Study** (cr arr). Prereq: perm.

Math **504** (s) **Special Topics** (cr arr). Prereq: perm.

Math **505** (s) **Professional Development** (cr arr). Cr earned in this course will not be accepted toward grad degree programs. Prereq: perm.

Math **510 Seminar on College Teaching of Mathematics** (1 cr). Development of skills in the teaching of college mathematics; includes structure of class time, test construction, and various methods of teaching mathematics; supervision of instructional assistants in their beginning teaching assignments. Graded P/F. Prereq: perm.

Math **ID&WS511-ID&WS512 Topology** (3 cr). WSU Math 525-526. Alt/yrs. Basic concepts of point set and algebraic topology.

Math **521** (s) **Seminar in Topology** (1-3 cr, max arr). Current literature.

Math **ID523-ID524 Algebraic Topology** (3 cr). WSU Math 527-528. Alt/yrs. Basic homotopy theory, covering spaces, homology theory, and applications.

Math **526** (s) **Topics in Topology** (1-3 cr, max 12).

Math **528 Differentiable Manifolds** (3 cr). Fundamentals of smooth manifolds, tangent spaces, vector fields, Lie groups, integration on manifolds, and applications. Prereq: Math 411 or 511, and 471.

Math **ID&WS531 Complex Variables** (3 cr). WSU Math 503. Alt/yrs. Theory of functions of a complex variable.

Math **535 Real Variables** (3 cr). Alt/yrs. Measure and integration theory for functions of one or several variables.

Math **536 Probability Theory** (3 cr). Alt/yrs. Random variables, characteristic functions, convergence theorems, central limit theorem, conditional probability, and stochastic processes as developed from a measure theoretic basis. Prereq: Math 535 or perm.

Math **ID&WS538 Stochastic Models** (3 cr). See Math J453/J538.

Math **ID&WS539 Theory of Ordinary Differential Equations** (3 cr). WSU Math 512. Alt/yrs. Existence, uniqueness, and stability of solutions of first-order systems; other topics.

Math **ID&WS541** (s) **Seminar in Analysis** (1-3 cr, max arr). WSU Math 581. Current literature.

Math **WS543 Approximation Theory** (3 cr). WSU Math 543.

Math **WS544 Advanced Matrix Computation** (3 cr). WSU Math 544.

Math **WS545 Numerical Analysis of Evolution Equations** (3 cr). WSU Math 545.

Math **WS547 Numerical Analysis of Elliptic PDE's** (3 cr). WSU Math 546.

Math **ID550 Linear Algebra** (3 cr). WSU Math 554. Alt/yrs. Vector spaces, direct sums, quotient spaces, similarity, Jordan forms, inner products, eigenvalues, eigenvectors, spectral theory.

Math **ID551 Ring Theory** (3 cr). WSU Math 553. Alt/yrs. Ideals, quotient rings, modules, radicals, semisimple Artinian rings, Noetherian rings.

Math **ID552 Galois Theory** (3 cr). WSU Math 552. Alt/yrs. Field extensions, automorphisms, normality, splitting fields, radical extensions, finite fields, separability. (A knowledge of group theory is presumed.)

Math **553 Group Theory** (3 cr). Alt/yrs. Permutation groups, isomorphisms, direct products, Sylow theory, normal series, abelian groups.

Math **WS554 Advanced Topics in Geometry** (3 cr). WSU Math 550. Alt/yrs.

Math **ID&WS561** (s) **Seminar in Algebra** (1-3 cr, max arr). WSU Math 582. Current literature.

Math **ID&WS571-ID&WS572 Functional Analysis** (3 cr). WSU Math 504-506. Alt/yrs. Linear topological spaces and linear operators. Prereq: Math 536.

Math **581** (s) **Seminar in Combinatorics** (1-3 cr, max arr).

Math **WS583 Seminar in Applied Mathematics** (3 cr, max arr). WSU Math 583.

Math **WS584 Seminar in Topology and Geometry** (3 cr, max arr). WSU Math 584.

Math **585-586** (s) **Recent Developments in Mathematics** (3 cr, max arr). For students with extensive background in specific areas of mathematics.

Math **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Math **600 Doctoral Research and Dissertation** (cr arr).

Mechanical Engineering

Steven G. Penoncello, Chair, Dept. of Mechanical Engineering (202 Gauss Lab. Bldg. 83844-1030; phone 208/885-6579).

Note: Pre-advising is required for all mechanical engineering courses; consult the mechanical engineering adviser or departmental administrator.

ME **101 Engineering Graphics** (2 cr). Freehand and computer aided drawing in pictorial and orthographic projection; section and auxiliary views; descriptive geometry; graphical presentation of data; scales, dimensioning, and measurements. Two lec and one 2-hr lab a wk.

ME **103 Introduction to Engineering** (2 cr). Summer short course for JETS Program. Intro to engineering career opportunities through analysis of engineering design problems; includes computer graphics, programming languages, economics, and statistics.

ME **123 Introduction to Mechanical Design** (3 cr). Introduction to engineering design process and analysis techniques including problem solving skills, development of software learning skills, graphical analysis, data analysis, economic decision making, documentation skills, and use of structured programming concepts in designing personal applications. Three lec and one open 2-hr lab a wk. Prereq: declared major in mechanical engineering.

ME **ID&WS220 Engineering Dynamics** (3 cr). WSU C E 212. Particle and rigid body kinematics and kinetics; rectilinear, curvilinear, and relative motion, equations of motion, work and energy, impulse and momentum, systems of particles, rotation, rotating axes, rigid body analysis, angular momentum, vibration, and time response. Prereq: CE 210.

ME **222 Tools for Design Analysis** (1 cr). Cannot be taken for credit after ME 123. Software learning skills, DOS, batch files, tables, graphical analysis, statistical analysis, user-defined functions, libraries, UNIX, E-MAIL, ftp. Half-semester course; one lec and 2 hrs of lab a wk. Prereq: CS 105 or equiv.

ME **223 Mechanical Design Analysis** (3 cr). Use of a design and problem solving methodology in the creation of application programs; matrix methods; numerical integration; solution of differential equations; oral/written communication. Three lec and one 2-hr open lab a wk. Prereq: ME 101, 123; coreq: Math 310.

ME **261 Engineering Materials** (3 cr). Same as Met 201. Fundamental factors in influencing properties and selection of materials. Prereq: Chem 111.

ME **262 Sophomore Laboratory** (2 cr). Materials foundation of mechanics; testing of structures subject to axial, torsion, and bending loads as well as thin-walled pressure vessels; use of computers for data reduction and analysis; development of engineering record keeping skills. One lec and 2 hrs of lab a wk. Prereq: CE 210, ME 123.

ME **304 Materials Selection and Processing for Mechanical Design** (3 cr). Selection of materials for mechanical design based on material properties, processing, and service conditions. Prereq: ME 261 or Met 201, ME 262; coreq: ME 340.

ME **313 Dynamic Modeling of Engineering Systems** (3 cr). Application of basic engineering principles to model and analyze the dynamic response of engineering systems; problem solutions will utilize transfer function methods, state variable techniques, and simulation software. Prereq: EE 207, Math 310.

ME **ID&WS324 Dynamic Analysis in Machine Design** (3 cr). WSU M E 312. Kinematic, static, and dynamic principles and application to analysis and synthesis of machines with emphasis on computer-aided design (CAD) techniques. Two lec and one 3-hr lab a wk; one 1-day field trip. Prereq: Math 310, ME 220, 223.

ME **330 Experimental Methods for Engineers** (3 cr). Measurement systems and their application to engineering problems; topics include generalized performance of measurement systems, measuring and control devices, data acquisition and analysis, and report writing. Two lec and one 2-hr lab a wk. Prereq: ME 223, 262; coreq: EE 207, CE 320, ChE 321, ME 340.

ME **ID&WS340 Engineering Mechanics of Materials** (3 cr) (C). WSU C E 215. Elasticity, strength, and modes of failure of engineering materials; theory of stresses and strains for ties, shafts, beams, and columns. Prereq: CE 210, Math 275; coreq: Math 310.

ME **341 Intermediate Mechanics of Materials** (3 cr). Mechanics of materials approach to three dimensional stress and strain, plates, curved beams, pressure vessels, non-circular torsion and unsymmetrical ending; introduction to elementary energy methods and advanced strength theories. Prereq: ME 340.

ME **ID&WS345 Heat Transfer** (3 cr). WSU M E 404. Transmission by conduction of heat in steady and unsteady states, by free and forced convection, and by radiation; combined effects of conduction, convection, and radiation. Prereq: ChE 321, Math 310, ME 223 or perm.

ME **391 Mechanical Engineering Seminar** (1 cr). Professional practice and technical topics including ethics, safety, engineering practice, and employment; emphasis on further development of oral presentation and writing skills. Prereq: junior standing in mechanical engineering.

ME **398-399** (s) **Engineering Cooperative Internship I-II** (cr arr). Supervised internship in professional engineering settings, integrating academic study with work experience; requires written report to be evaluated by a designated faculty member; details of coop to be arranged with ME Department before start of coop; cannot be counted as a technical elective. Graded P/F. Prereq: perm.

ME **404** (s) **Special Topics** (cr arr). Prereq: perm.

ME **409 Human Factors in Engineering Design** (3 cr). Application of psychological principles to engineering and design; psychological models and principles from areas of perception, cognition, and information processing; the design process; display and control design; work station layout and system integration; environmental factors; safety; mental workload; human-computer interaction; and current research topics. Prereq: senior standing in an engineering discipline or perm.

ME **410 Production Engineering** (3 cr). Planning, analysis, and control of production systems; decision models; techniques for productivity enhancement; quality control. Prereq: senior standing in an engineering discipline or perm.

ME **412 Gas Dynamics** (3 cr). Compressible flow in ducts and nozzles, shock waves and expansion waves, and adiabatic two-dimensional compressible flow. Prereq: Math 310, CE 320, and ChE 321.

ME **J413/J513 Engineering Acoustics** (3 cr). Fundamentals of acoustics including wave theory; sound transmission, absorption, generation; acoustics of enclosed spaces, acoustic transducers, and underwater acoustics; acoustic design project reqd. Additional projects/assignments reqd for grad cr. Prereq: CE 320, ChE 321.

ME **J420/J520 Fluid Dynamics** (3 cr). Same as CE J420/J520. Cr not granted for both ME 420 and ME 520. A second fluid dynamics course emphasizing theoretical perspective appropriate for either research or grad school preparation; topics include fluid properties, tensor analysis, kinematics, Navier-Stokes equation, energy equation, and vortex dynamics; study of current literature. Additional projects/assignments reqd for grad cr. Prereq: CE 320, Math 310, or perm.

ME **422 Applied Thermodynamics** (3 cr). Advanced topics in applied thermodynamics including availability (exergy) analysis of systems, advanced power and refrigeration cycles, combustion, thermodynamic properties of real fluids, phase equilibrium, and chemical equilibrium. Prereq: ChE 321.

ME **424 Mechanical Systems Design I** (3 cr). Study of production realization process including project planning, concept design, detail design, and manufacturing processes; modern design and manufacturing practices in each of these areas applied to a two-semester, industrial sponsored capstone design project (continued in ME 426). Prereq: ME 391; coreq: Engl 317, ME 413, 425, 435.

ME **425 Machine Component Design** (3 cr). Design of machine components in context of material selection, machineability, joining, materials strengthening and surface treatment; design using metals, non metals and composite materials for strength, fatigue, creep and corrosion resistance; other topics include lubrication theory, bearing selection, fasteners and spring design; discussion of case studies. Prereq: ME 261, 324, 341.

ME **426 Mechanical Systems Design II** (3 cr). Continuation of ME 424. Additional manufacturing issues; continuation of a two-semester, industrial sponsored capstone design project (begun in ME 424) to include the detail design, prototype construction, and testing. Prereq: Engl 317, ME 313, 424, 425, 435.

ME **427 Computer Aided Design** (3 cr). CAD techniques, including finite element and optimum design, applications to mechanical structural and thermal systems with practical design constraints. Prereq: ME 341 or CE 342; coreq: ME 345, or CE 441 and 444, or perm.

ME **430 Senior Lab** (3 cr). Detailed lab investigation of engineering problem; statistical design of experiments; application of engineering principles to analyze experimental data; technical report writing; oral communication skills. One lec and four hrs of lab a wk. Prereq: ME 330 and Stat 301; coreq: Engl 317.

ME **431 Manufacturing Processes Lab** (3 cr). Study and measurement of manufacturing process variables; application of engineering principles to analyze experimental data. Prereq: ME 330; coreq: Engl 317.

ME **433 Combustion Engine Systems** (3 cr). Theory and characteristics of combustion engines; combustion process analysis; fuels, exhaust emissions and controls; system analysis and modeling. Coreq: ME 345 or perm.

ME **435 Thermal Energy Systems Design** (3 cr). Application of fluid mechanics, thermodynamics and heat transfer in the design of thermal energy systems; topics include thermal energy system component analysis and selection, component and system simulation, dynamic response of thermal systems, and system optimization. Prereq: CE 320, ME 345.

ME **443** (s) **Analysis of Thermal Energy Systems** (3 cr, max arr). Analysis of thermal energy systems; topics vary depending on instructor and may include one or more of the following thermal systems: solar energy, refrigeration, vapor power generation, gas power generation, geothermal energy, wind energy, fuel cells, nuclear energy, thermoelectric systems, and thermionic systems. Prereq: CE 320, ME 345; perm reqd to repeat course for credit.

ME **ID&WS444 Air Conditioning Engineering** (3 cr). WSU M E 419. Requirements for air conditioned spaces for human comfort; thermodynamic properties of air-water vapor mixtures; heating and cooling loads; design of systems for heating, cooling, and ventilation. Prereq: ME 345.

ME **J451/J551 Experimental Methods in Fluid Dynamics and Heat Transfer** (3 cr). Cr not granted for both ME 451 and ME 551. Theory and applications of transducers and instrumentation to measure velocity, temperature, and related quantities; flow visualization, pressure measurements, thermal anemometry, laser Doppler velocimetry, temperature and concentration measurement, and heat flux measurement. Additional projects/assignments reqd for grad cr. One 1-1/2 hr lec and one 3-hr lab a wk. Prereq: ME 330; coreq: Engl 317, ME 345, or perm.

ME **461 Fracture Mechanics** (3 cr). Fracture mechanics approach to structural integrity, fracture control, transition temperature, microstructural and environmental effects, fatigue and failure analysis. Prereq: ME 261, 340.

ME **463 Mechanics of Materials Processing** (3 cr). Mechanics and energy balances in unit processes in materials manufacturing; processes include casting, rolling, extrusion and sheet forming; inelastic deformation applied to model some unit manufacturing processes; other processes explored as time and interest permit. Prereq: ME 341, 345.

ME **ID&WS472 Mechanical Vibrations** (3 cr). WSU M E 449. Free and forced vibration of single and multiple degree of freedom systems; response of mechanical systems to inputs of varying complexity, ranging from single frequency to pseudo-random; applications to mechanical design and vibration control. Prereq: ME 220, Math 310.

ME **473 Experimental Stress Analysis** (3 cr). Measurement of static displacements, strains and stresses on deformable bodies; use of a universal test frame, extensometers, and strain gauges for quantitative static measurements, photoelasticity and brittle coating techniques for qualitative static measurements. Prereq: ME 341.

ME **J476/J576 Automation, Robotics, and Computer Integrated Manufacturing** (3 cr). Cr not granted for both ME 476 and ME 576. Comprehensive technical survey of important topics in production automation and related systems; flow line production, industrial robotics, material handling, group technology, flexible manufacturing systems, process control, and computer integrated manufacturing (CIM). Additional projects/assignments reqd for grad cr. Prereq: Math 310.

ME **ID&WS481 Control Systems** (3 cr). WSU M E 481. Analysis and design of feedback control systems utilizing frequency and time domain methods. Prereq: ME 220, Math 310.

ME **499** (s) **Directed Study** (cr arr). Selected topics. Detailed report reqd. Prereq: sr standing and perm.

ME **500 Master's Research and Thesis** (cr arr).

ME **502** (s) **Directed Study** (cr arr). Supervised study, including critical reading of current literature. Prereq: perm.

ME **503** (s) **Workshop** (cr arr). Prereq: perm.

ME **504** (s) **Special Topics** (cr arr). Prereq: perm.

ME **508 Mechanics of Plates and Shells** (3 cr). Formulation of governing equations, assumptions, stress analysis, calculation of displacements, discussion of experimental analysis, buckling and vitration of plates and shells. Prereq: ME 341 or CE 342.

ME **513 Engineering Acoustics** (3 cr). See ME J413/J513.

ME **515 Transport Phenomena** (3-4 cr). See ChE 515.

ME **WS516 Theoretical Acoustics** (3 cr). WSU M E 548.

ME **519 Fluid Transients** (3 cr). See CE 519.

ME **520 Fluid Dynamics** (3 cr). See ME J420/J520.

ME **R525 Advanced Heat Transfer** (3 cr). See ChE 525.

ME **ID&WS526 Statistical Thermodynamics** (3 cr). WSU Ch E and M E 526. Probability theory and quantum mechanics, statistical mechanics, thermodynamic probability, molecular interpretation of first and second laws; kinetic theories. Prereq: ChE 321.

ME **ID&WS527 Thermodynamics** (3 cr). WSU M E 527. Thermodynamic laws for design and optimization of thermodynamic systems, equations of state, properties of ideal and real fluids and fluid mixtures, stability, phase equilibrium, chemical equilibrium, applications of thermodynamic principles. Prereq: ChE 321 or perm.

ME **ID534 Mechanics of Composite Materials** (3 cr). WSU M E 534. Analysis of micromechanical and macromechanical behavior of composite materials with emphasis on fiber-reinforced composite; prediction of properties; stiffness and strength theories; laminated beams and plates; dynamic behavior; environmental effects. Prereq: ME 341 or CE 342.

ME **535 Failure of Structural Materials** (3 cr). See Met 535.

ME **R537 Advanced Fluid Mechanics** (2-3 cr). See ChE 537.

ME **539 Advanced Mechanics of Materials** (3 cr). Same as CE 510. Limitations of results of elementary mechanics of materials, complex situations of loading and structural geometry, applications to design of machines and structure, introduction to elasticity. Prereq: ME 341 or CE 342.

ME **540 Continuum Mechanics** (3 cr). Same as CE 540. Stress and deformation of continua using tensor analysis; relationship between stress, strain, and strain rates in fluids and solids; applications. Prereq: perm.

ME **541 Mechanical Engineering Analysis** (3 cr). Mathematical modeling and solutions to mechanical engineering problems; analytical solutions to linear heat and mass diffusion, waves and vibrations; introduction to approximate techniques. Prereq: ME 345, ME 341 or equiv.

ME **WS542 Optimal Control of Dynamic Systems** (3 cr). WSU M E 542.

ME **545 Numerical Conduction Heat Transfer** (3 cr). Steady-state and transient conduction and advection of heat; analytical and numerical methods including finite differences, finite elements, and boundary elements. Prereq: ME 345.

ME **ID&WS546 Convective Heat Transfer** (3 cr). WSU M E 515. Energy conservation equations; laminar and turbulent forced convective heat transfer; internal and external flow; free convection. Prereq: ME 345 or perm.

ME **ID&WS547 Thermal Radiation Processes** (2-3 cr). WSU M E 514. Thermal radiation; radiation interchange among surfaces; radiation in absorbing-emitting gases; combined modes of heat transfer. Prereq: ME 345 or perm.

ME **548 Elasticity** (3 cr). Same as CE 548. Mathematical analysis of strain and stress, including vectors, tensors, and coordinate transformations; equations of elasticity; stress problems involving extension, torsion, and flexure; theories of failure. Prereq: ME 341 or CE 342.

ME **549 Finite Element Analysis** (3 cr). See CE 546.

ME **551 Experimental Methods in Fluid Dynamics and Heat Transfer** (3 cr). See ME J451/J551.

ME **WS556 Numerical Modeling in Fluid Mechanics** (3 cr). WSU M E 556.

ME **557 Advanced Fluid Dynamics** (3 cr). Potential flow and boundary layer theory, plus one or more advanced topics. Prereq: ME J420/J520 or 540 or perm.

ME **ID&WS572 Advanced Mechanical Vibrations** (3 cr). WSU M E 541. Free and forced vibration of strings, membranes and plates; response to random inputs; advanced topics in spectral analysis to include statistical properties, windowing, and the zoom transforms; analysis of nonlinear systems including linearization, local and global stability, perturbation methods, and numerical simulation; introduction to chaos theory. Prereq: ME 472.

ME **WS574 Advances in Manufacturing Science** (3 cr). WSU M E 574.

ME **576 Automation, Robotics, and Computer Integrated Manufacturing** (3 cr). See ME J476/J576.

ME **ID&WS581 Advanced Topics in Control Theory** (3 cr). Discrete control systems, Kalman filters, fuzzy logic control systems, and other special topics with applications. Prereq: ME 481.

ME **585 Advanced Topics in Engineering Design** (3 cr). Introduction to advanced methodologies for the design and manufacture of products; topics include robust design, conrecurrent engineering, design for manufacture and assembly, and expert systems. Prereq: ME 424, Stat 301, or grad standing and perm.

ME **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

ME **600 Doctoral Research and Dissertation** (cr arr).

Medical Science

Michael B. Laskowski, Director, WAMI (Washington-Alaska, Montana, Idaho) Medical Education Program (304 Student Health Services Bldg. 83844-4207; phone 208/885-6696; e-mail glorial@osprey.csrv.uidaho.edu).

Note: Ordinarily, only students enrolled at the University of Washington School of Medicine register to take medical science courses. Matriculated graduate and senior undergraduate students may register for credit in certain medical science courses under appropriate circumstances. In such cases prior approval must be obtained from the faculty member chairing the course and the WAMI director. Permission to register will usually depend on the student also having approval from his or her academic adviser (senior undergraduate students must also obtain approval from the vice provost for research and graduate studies) and be limited to not more than two medical science courses per semester. MedS 505 (Preceptorship) and MedS 513, 522, and 535 (Introduction to Clinical Medicine I, II, and III) are closed to all but WAMI medical students.

MedS **501** (s) **Seminar** (cr arr).

MedS **502** (s) **Directed Study** (cr arr). Areas normally offered are directed dissection of the extremities, trunk, head, neck, abdomen, and pelvis; endocrinology, physiology, and other medically related studies.

MedS **504** (s) **Special Topics** (cr arr).

MedS **505 Preceptorship** (cr arr). To provide opportunity for first-year medical students to gain personal experience with and insight into medical practice situations; the student will be stationed with physicians in their offices in accordance with the student's preference of discipline at the WAMI sites.

MedS **ID&WS510 Histology** (3 cr). WSU Med S 510. Microscopy of cells; tissues and organs of the human body; emphasis on function. Three lec and one 3-hr lab a wk.

MedS **ID&WS511 Anatomy of the Trunk** (5 cr). WSU Med S 511. Regional study of anatomy of human thorax, abdomen, pelvis, and perineum in correlation with clinical cases. Two lec and one 3-hr lab a wk.

MedS **ID&WS512 Basic Mechanisms in Cellular Physiology** (4 cr). WSU Med S 512. Basic physiological mechanisms, primarily at the cellular level.

MedS **ID&WS513 Introduction to Clinical Medicine I** (1 cr). WSU Med S 513. Communication skills and interview techniques to form the basis for the eventual doctor-patient relationship.

MedS **ID&WS514 Molecular and Cellular Biology I** (3 cr). WSU Med S 514. Classical molecular and cellular biochemistry, cellular physiology, and molecular genetics.

MedS **ID&WS516 Systems of Human Behavior** (2 cr). WSU Med S 516. Conceptual systems and models of behavior, normality and abnormality, environment and social learning, conditioning, learning in the autonomic nervous systems, catecholamines and behavior, illness behavior, feelings, emotion and cognition, physician-patient interaction, diseases and tech of behavior change; human development from birth to senescence emphasizing disorders that occur during various life phases.

MedS **ID&WS520 Cell and Tissue Response to Injury** (3 cr). WSU Med S 520. Cell and tissue injury, inflammation, and neoplasia.

MedS **ID&WS521 Natural History of Infectious Diseases and Chemotherapy** (5 cr). WSU Med S 521. Pathogenesis, resistance, epidemiology, clinical manifestations and control of bacterial, fungal, parasitic, and viral infectious diseases, principles of chemotherapy and asepsis; sterilization; nosocomial and iatrogenic infections and prevention.

MedS **ID&WS522 Introduction to Clinical Medicine II** (2 cr). WSU Med S 522. Continuation of communication skills especially as related to and dealing with medical history.

MedS **ID&WS523 Medical Immunology** (2 cr). WSU Med S 523. Principles of immunology and their relationship to human medicine.

MedS **ID&WS524 Molecular and Cellular Biology II** (2 cr). WSU Med S 524. Continuation of MedS 514.

MedS **ID&WS526 Systems of Human Behavior** (2 cr). WSU Med S 526. See MedS ID&WS516 for description.

MedS **ID&WS530 Epidemiology** (2 cr). WSU Med S 530. Intro to biostatistical inference; interaction of agent, host, and environment in disease causation and transmission.

MedS **ID&WS531 Head, Neck, Ear, Nose, and Throat** (5 cr). WSU Med S 531. Gross anatomy, including skull, pharynx, and larynx; audition and balance.

MedS **ID&WS532 Nervous System** (5 cr). WSU Med S 532. Normal structure and function of the nervous system, including the eye.

MedS **ID&WS535 Introduction to Clinical Medicine III** (2 cr). WSU Med S 535. Screening physical exam.

Metallurgical Engineering

Patrick R. Taylor, Head, Dept. of Metallurgical and Mining Engineering (203 McClure Hall 83844-3024; phone 208/885-6376).

Met **101 Introduction to Metallurgy and Materials Science** (1 cr). Earth resources, metallurgy, materials science, and manufacturing.

Met **200** (s) **Seminar** (cr arr). Prereq: perm.

Met **201 Elements of Materials Science** (3 cr). Same as ME 261. Principles relating properties of metals, ceramics, polymers, and composites to their structures. Prereq: Chem 111.

Met **202 Microstructural Evaluation** (2 cr). Techniques for preparing materials for observation and evaluation of microstructure by optical and scanning and transmission electron microscopy. One 2-hr and one 3-hr lab a wk. Coreq: ME 261.

Met **204** (s) **Special Topics** (cr arr). Prereq: perm.

Met **205 Introduction to Metallurgy** (3 cr). Mineral processing, hydrometallurgy, pyrometallurgy, and electrometallurgy; principles of materials science; structures, properties, and processes; phase diagrams and welding. Two lec and 1 hr of lab demonstration a wk; extra lab time reqd as assigned. Prereq: Math 175, Chem 112 or 113, CS 105 or 112 or equiv; coreq: CE 210.

Met **211 Metallurgical Mass and Energy Balance** (3 cr). Dimensions, units, and conversion factors; stoichiometry; sampling and measurements; thermochemistry; calculations of material and energy balances applied to particular processes in ferrous and nonferrous metallurgy.

Met **299** (s) **Directed Study** (cr arr). Prereq: perm.

Met **308 Metallurgical Thermodynamics** (3 cr). Intro; first, second, and third law; auxiliary functions; behavior of solutions; free energy composition and phase diagrams of binary systems; reaction equilibria in systems containing components in condensed solutions; ternary diagrams; thermodynamics of alloys and ceramic materials. Prereq: Chem 112 or 113, Math 310.

Met **309 Metallurgical Transport Phenomena** (3 cr). Intro to principles of metallurgical transport phenomena including heat, mass, and momentum transfer. Coreq: Math 310.

Met **310 Metallurgical Reactor Design** (3 cr). Fundamental principles. Prereq: Math 310.

Met **313 Physical Metallurgy I** (4 cr). Theory, structure, and properties of materials. Prereq: ME 261.

Met **316 Physical Metallurgy II** (3 cr). Continuation of Met 313, with emphasis on transformations in materials. Prereq: Met 313.

Met **ID341 Particulate Materials Processing** (4 cr). WSU MSE 341. Engineering science of particulates; powder production, powder properties, separation; design of systems applied to metals, ores, and concentrates. Three lec and one hr of lab a wk; two 1-day field trips. Prereq: Chem 112 or 113, CE 210, CS 105 or 112, Met 211, ME 261; coreq: Math 310.

Met **344 Hydroprocessing of Materials** (4 cr). Intro to hydroprocessing; dissolution of metals, minerals, and materials; recovery of metals from solutions: solvent extraction, ion exchange, precipitation; electrometallurgy; bioprocessing; design of agitators, mixer-settlers, electrolytic cells; flowsheet design and analysis. Three lec and one 3-hr lab a wk. Prereq: Met 308, 211, 309.

Met **400** (s) **Seminar** (cr arr). Review of current literature. One 3-day field trip. Prereq: perm.

Met **404** (s) **Special Topics** (cr arr). Prereq: perm.

Met **405 Design of Unit Operations and Flowsheets** (3 cr). Comminution, flotation, leaching, electrowinning, smelting, heat pumps and energy conservation; flowsheet analysis and design. One-week field trip reqd during spring break or at beginning of semester in Christmas recess. Prereq: ME 340, Met 308, 310, 341, 344.

Met **406 Treatment Technology for Recycled Waste** (3 cr). Basic principles needed by technologies for treatment of recycled wastes; examination of various unit operations; numerical examples extensively used in design of particular operational units; some demonstrations in state of the art laboratories. Prereq: Open for SR in engineering and applied sciences.

Met **407 Materials Fabrication** (3 cr). Fundamentals of casting, solidification, metal working, and joining of metallic materials; emphasis on interaction between processing, properties, and structure; final problem that covers design of procedure for fabrication of industrial application. One 1-day field trip.

Met **J409/J509 Solution Mining** (3 cr). Same as Min J409/J509. Alt/yrs. Metal extraction from rubblized rock: chemistry, biology, transport, leaching kinetics, solution flow, aeration, rock permeability and alteration, leaching simulation, environmental containment, safety, metal recovery from solutions; well and reservoir technology; brine evaporation and extraction. Term paper or other additional assignments/projects reqd for grad cr. Prereq: Chem 111.

Met **J410/J510 Plasma Processing of Materials** (3 cr) (Met 503). Fundamentals of thermal plasma processing of materials; examples of current and future industrial applications. Additional projects/assignments reqd for grad cr. Prereq: senior standing or graduate student.

Met **412 Mechanical Metallurgy** (3 cr). Mechanical properties of solids, testing, brittle and ductile fracture, plasticity, mechanical processes in metallurgy. One 1-day field trip. Prereq: Met 201 or ME 261.

Met **414 Process Design** (3 cr). Problem definition, flowsheet synthesis, equipment design, economic analysis, optimization and reporting; heuristic and open-ended design problems based on prior minerals, materials, and extractive process courses, economics, and basic and engineering science. Prereq: Min 352; Met 308, 309, 310, 341, 344, 405, 442.

Met **ID415 Materials Selection and Design** (3 cr). WSU MSE 415. Selection of materials for use in structural applications; consideration of environment, stress conditions, cost, and performance as guide to properties; optimization of choice of materials and fabrication methods; open-ended problems of real applications in various industries. Prereq: Met 316, 407.

Met **J416/J516 Magnetic Materials** (3 cr). Study of paramagnetic, superparamagnetic, diamagnetic, ferrimagnetic, ferromagnetic, antiferromagnetic, magnetic anistropy, magnetostriction and the effect of stress, magnetic domain and magnetization process, induced magnetic anisotropy, magnetic fine particles, magnetic thin film, magnetization dynamics, hard magnet, soft magnet, magnetic recording, magnetic head, magnetic media, magneto-optical recording. Additional projects/assignments reqd for grad cr. Prereq: senior standing, graduate student, or perm.

Met **417 X-ray Diffraction** (2-3 cr). Diffraction of x-rays by crystals; applications to study of polycrystalline materials. Two lec and one 3-hr lab a wk. Prereq: Phys 112 or 212.

Met **ID-J421/J521 Light Metals** (3 cr). WSU MSE 421. Principles behind the physical metallurgy of the light metals Al, Mg, Ti, Be; discussion of characteristics and applications of alloys based on these metals. Additional projects/assignments reqd for grad cr.

Met **J423/J523 High Temperature Corrosion** (3 cr). Alt/yrs. Oxidation of metals, semiconductors and ceramics, protective oxide scales and coatings, defect structures and diffusion oxides, kinetics and thermal fatigue, transport properties. Additional projects/assignments reqd for grad cr. Prereq: perm.

Met **424 Phase Transformations** (3 cr). Thermodynamics and phase diagrams, diffusion, solidification, diffusional transformation, diffusionless transformations.

Met **J425/J525 Electronic Materials** (3 cr). The chemistry, physics, and materials science relating to fabrication and processing steps; materials properties and device properties; structures of electronic materials; electronic energy band; electrical properties of semiconductors; optical properties; interface; thermodynamics of compound semiconductors; semiconductor devices; optoelectronic devices; single crystal growth; amorphous silicon; control of semiconductor conductivity; dielectric materials; piezoelectronic materials; superconducting materials. Additional projects/assignments reqd for grad cr. Prereq: senior standing, graduate student, or perm.

Met **J427/J527 Advanced Ceramics** (3 cr). Crystallography, ceramic crystal structures, phase diagrams, phase transformation; mechanical properties, thermal properties, electrical properties, magnetic properties and optical properties. Additional projects/assignments reqd for grad cr. Prereq: perm.

Met **ID-J429/J529 Advanced Synthesis of Materials** (3 cr). WSU MSE 429. Principles behind a number of commercially important and developing synthesis technologies such as conventional powder metallurgy, rapid solidification, mechanical alloying, plasma processing, vapor deposition, and thermochemical processing. Additional projects/assignments reqd for grad cr.

Met **442 Pyroprocessing of Materials** (4 cr). History of pyroprocessing; hydroprocessing versus pyroprocessing; thermodynamic principles; roasting; sintering; smelting of non-ferrous materials; smelting of ferrous materials; furnaces; flowsheet design and analysis; pyroprocessing of ceramic materials. Three lec and one 3-hr lab a wk. Prereq: Met 211, 308, 309.

Met **461 Metallurgical Control and Optimization** (3 cr). Basics of process control and optimization applied to metallurgical engineering.

Met **480 Transmission Electron Microscopy of Materials** (3 cr). Basic principles and applications of transmission electron microscopy as applied to materials; topics include formation and interpretation of electron diffraction patterns and images; kinematic and dynamical theories of contrast; interpretation of electron micrographs from crystals containing point defects, dislocations, stacking faults and precipitates; high-resolution and high-voltage electron microscopy techniques.

Met **499** (s) **Directed Study** (cr arr). Prereq: perm.

Met **500 Master's Research and Thesis** (cr arr).

Met **501** (s) **Seminar** (cr arr). Prereq: perm.

Met **502** (s) **Directed Study** (cr arr). Prereq: perm.

Met **504** (s) **Special Topics** (cr arr). Prereq: perm.

Met **505 Advanced Rate Phenomena in Metallurgical Engineering** (3 cr). Principles of rate phenomena in metallurgical engineering. Prereq: perm.

Met **506 Advanced Ore Dressing** (3 cr). Theories of comminution; flotation and related surface phenomena; electrical and magnetic concentration; process control. Prereq: Met 341 or perm.

Met **508 Control of Metallurgical Processes** (3 cr). Control variables of metallurgical processes. Prereq: perm.

Met **509 Solution Mining** (3 cr). See Met J409/J509.

Met **510 Plasma Processing of Materials** (3 cr). See Met J410/J510.

Met **511 Advanced Physical Metallurgy** (3 cr). Alt/yrs. Theory of metals and alloys; application to problems of structure; properties of engineering metals. Prereq: perm.

Met **514 Phase Rule and Phase Relations** (3 cr). Alt/yrs. Phase rule construction and interpretation of phase diagrams; metastable and unstable phase relations. Prereq: perm.

Met **516 Magnetic Materials** (3 cr). See Met J416/J516.

Met **517 Kinetics of Metallurgical Reactions** (3 cr). Alt/yrs. Application of absolute rate theory; time and temperature dependence; kinetics of gas-solid reactions; corrosion, diffusion, and recrystallization. Prereq: perm.

Met **518 Advanced Mechanical Metallurgy** (3 cr). Alt/yrs. Micro- and macroscopic theories of deformation; materials-forming processes; mechanical tests. Prereq: perm.

Met **521 Light Metals** (3 cr). See Met ID-J421/J521.

Met **523 High Temperature Corrosion** (3 cr). See Met J423/J523.

Met **525 Electronic Materials** (3 cr). See Met J425/J525.

Met **527 Advanced Ceramics** (3 cr). See Met J427/J527.

Met **528 Advanced Engineering Ceramics** (3 cr). Advanced materials: zirconia, alumina, silicon carbide, silicon nitride, glass ceramics, ceramic matrix composites, other miscellaneous non-oxides; advanced processing techniques: injection molding, combustion synthesis, hot isostatic pressing, superplastic forming, shock synthesis, plasma processing. Prereq: Met 527 or perm.

Met **529 Advanced Synthesis of Materials** (3 cr). See Met ID-J429/J529.

Met **533 Advanced X-ray Diffraction** (3 cr). Principles and applications to advanced problems. Prereq: perm.

Met **R534 Radiation Effects in Materials** (3 cr). Interactions between radiation and solids. Prereq: perm.

Met **R535 Failure of Structural Materials** (3 cr). Same as ME 535. Mechanisms by which failure can occur in structural materials. Prereq: ME 261 or Met 201, ME 340.

Met **R538 Corrosion in Metallurgy** (3 cr). Corrosion by aqueous media, gases, liquid metals, and fused salts. Prereq: physical chemistry, incl electrochemistry, or perm.

Met **597** (s) **Practicum** (cr arr). Prereq: perm.

Met **598** (s) **Internship** (cr arr). Prereq: perm.

Met **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Microbiology, Molecular Biology and Biochemistry

Donald C. Robertson, Head, Dept. of Microbiology, Molecular Biology and Biochemistry (142 Life Sc. Bldg. 83844-3052; phone 208/885-7966).

MMBB **105 Survey of Biotechnology** (1 cr). Descriptions and discussions of research and career opportunities in biotechnology; genetic engineering concepts; pharmaceutical, environmental, plant and animal systems.

MMBB **111 Microbial Genetics** (3 cr). Principles of microbial genetics and their application to model biological systems, including fruit flies, maize, and humans; dominance and epistasis, complementation and recombination, mutation and mutagenesis, reversion and suppression, fate determination and development. Prereq or coreq: Chem 111.

MMBB **112 Microbial Genetics Laboratory** (2 cr). Training in lab safety, aseptic technique, media preparation, mutagenesis, isolation and characterization of bacterial mutants, transposition, genetic and physical mapping, microbial development, and data collection and analysis. Two 3-hr labs a wk. Prereq or coreq: MMBB 111 and Chem 111.

MMBB **154 Principles of Microbiology** (3 cr) (C). Satisfies core requirement J-3-b when taken with MMBB 155. Cannot be taken by microbiology majors and carries no cr after MMBB 250. Introduction to microorganisms and their role in disease, health, foods, and the environment; current topics in microbiology.

MMBB **155 Principles of Microbiology Laboratory** (1 cr). Satisfies core requirement J-3-b when taken with MMBB 154. Cannot be taken by microbiology majors and carries no credit after MMBB 250. Introductory laboratory training in basic microbiology; includes sterile technique, bacterial enumeration methods, culturing techniques, yogurt preparation and analysis, recombinant DNA techniques. Three hrs of lab a wk. Coreq: MMBB 154.

MMBB **206** (s) **Study Abroad** (cr arr) . Prereq: perm of dept.

MMBB **250 General Microbiology** (5 cr). Intro to nature and activity of bacteria and other microorganisms; their importance in all life systems. Three lec and two 3-hr labs a wk. Prereq: Chem 101 or 111.

MMBB **ID380 Introductory Biochemistry** (3 cr). WSU BC/BP 364. Max 7 cr in any combination of MMBB 380, 480, 541, 542. Survey of structure, function, and metabolism of major constituents of living systems. Prereq: Chem 101 and 275.

MMBB **ID382 Introductory Biochemistry Laboratory** (1 cr). WSU BC/BP 366. Lab training in modern methods. One 3-hr lab and one 1-hr recitation a wk. Prereq: Chem 101, 278; prereq or coreq: MMBB 380 or equiv.

MMBB **398** (s) **Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

MMBB **400** (s) **Seminar** (cr arr). Graded P/F. Prereq: perm.

MMBB **401 Undergraduate Research** (1-2 cr, max 4). Individual study. Prereq: sr standing and perm.

MMBB **404** (s) **Special Topics** (cr arr). Prereq: perm.

MMBB **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

MMBB **409 Immunology** (3 cr). Theory and mechanisms of the cellular basis of immune response; antibody structure, function, and synthesis; cell-mediated immunity; complement; hypersensitivity; immunologic diseases; transportation; tumor immunity. Coreq: MMBB 380.

MMBB **410 Immunology Laboratory** (2 cr). Serologic reactions; analytical techniques such as immunodiffusion, immunoelectrophoresis, immunofluorescence, and enzyme-linked antibody techniques. Two 2-hr labs a wk. Prereq or coreq: MMBB 409.

MMBB **412 Pathogenic Microbiology** (3 cr). Epidemiology, host-parasite relationships, pathology, host response; treatment, prevention, and control of pathogenic microorganisms. Prereq: MMBB 250.

MMBB **413 Pathogenic Microbiology Laboratory** (2 cr). Cultivation and genetic, biochemical, and serological identification of pathogenic bacteria and their virulence factors. Two 3-hr labs a wk. Prereq or coreq: MMBB 412.

MMBB **WS414 General Virology** (3 cr). WSU Micro 414.

MMBB **WS415 General Virology Laboratory** (2 cr). WSU Micro 415.

MMBB **ID416 Food Microbiology** (2 cr). WSU FSHN and Micro 416. Same as FST ID416. Purpose for enumeration, detection, and identification of microorganisms in food products; physical, chemical, and environmental factors influencing growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms in food and their control. Prereq: MMBB 154 or 250.

MMBB **ID417 Food Microbiology Laboratory** (2 cr). WSU FSHN 417. Same as FST ID417. Methods for enumeration, detection, and identification of spoilage and pathogenic microorganisms in foods. Two 3-hr labs a wk. Prereq or coreq: MMBB 416 or FST 416.

MMBB **WS420 Epidemiology** (3 cr). WSU Micro 420.

MMBB **J425/J525 Microbial Ecology** (4 cr). Same as Soil J425/J525. Biogeochemical activities and relationships of microorganisms in soil, water, plants, and animals. Students registering for MMBB 525 are required to complete an additional research paper. Two lec and two 3-hr labs a wk; one 2-day field trip. Prereq: MMBB 250, Math 130 or perm.

MMBB **431 Recombinant DNA Laboratory** (2 cr). Introduction to handling nucleic acids and recombinant organisms. Prereq: MMBB 380, Gene 314, and perm.

MMBB **450 Molecular Biology of Microbial Diversity** (3 cr). In-depth look at molecular mechanisms by which microbes cope with extreme and/or changing environments; experimental approaches and recent results on research and applied aspects of unusual microbes. Prereq: MMBB 250.

MMBB **460 Microbial Physiology** (5 cr). Concepts of microbial growth, metabolism, regulation, variation, structural-functional relationships. Three lec and two 2-hr labs a wk. Prereq: MMBB 250.

MMBB **J469/J569 Techniques in Microbial Genetics** (3 cr). Intensive laboratory course employing the basic methods of prokaryotic and bacteriophage genetics. Additional laboratory and library work reqd for grad cr. Prereq: perm.

MMBB **480 Biochemistry and Molecular Biology** (3 cr). Metabolism, molecular physiology, and molecular biology. Prereq: MMBB 380.

MMBB **481 Virology** (3 cr). Alt/yrs. Same as VS 481. Molecular biology of replication and structure of animal, plant, and bacterial viruses. Prereq: MMBB 380 or 541 and Gene 314.

MMBB **486 Plant Biochemistry** (3 cr). Alt/yrs. Same as Chem 486. Biochemistry of higher plants with an emphasis on physiology and molecular biology. Prereq: MMBB 380.

MMBB **488 Genetic Engineering** (3 cr). Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Prereq: MMBB 380, Gene 314.

MMBB **497** (s) **Practicum in Tutoring** (1 cr, max 2) (MMBB 498). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

MMBB **498** (s) **Internship** (cr arr). Prereq: perm.

MMBB **499** (s) **Directed Study** (cr arr). Prereq: perm.

MMBB **500 Master's Research and Thesis** (cr arr).

MMBB **501** (s) **Seminar** (1 cr, max 6). A maximum of 2 cr may be counted toward an M.S. degree and a maximum of 4 cr toward a Ph.D. Graded P/F. Prereq: perm.

MMBB **502** (s) **Directed Study** (cr arr). Areas normally offered are: molecular biology, microbiology and biochemistry. Prereq: perm.

MMBB **504** (s) **Special Topics** (cr arr). Prereq: perm.

MMBB **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

MMBB **WS512 Immunology** (3 cr). WSU Micro 512.

MMBB **520 Instrumental Analysis for Biologists** (2 cr). Theory and techniques involved in the use of various instruments in modern biological laboratories; topics include chromatography, spectrometry, sterilization, sample preparation, radioisotope techniques, electrophoresis, centrifugation, and fermentation. Prereq: perm.

MMBB **525 Microbial Ecology** (4 cr). See Soil J425/J525.

MMBB **WS529 Molecular Techniques in Microbiology** (3 cr). WSU Micro 529.

MMBB **ID537 Soil Biochemistry** (3 cr). WSU Soils 537. See Soil 537.

MMBB **ID541-ID542 Biochemistry** (3 cr). Same as Chem 541-542. WSU BC/BP 563-564. Max 7 cr in any combination of MMBB 380, 480, 541, and 542. Intermediate biochemistry; intro to metabolism and the chemical and physical properties of biomolecules. Prereq: Chem 372; coreq: Chem 302 or 306 or perm.

MMBB **560 Advanced Microbial Physiology** (3 cr). Use of current literature to study recent advances in research on the physiology of microorganisms. Prereq: MMBB 460 or perm.

MMBB **562 Advanced Pathogenic Mechanisms** (3 cr). Detailed analysis of microbial virulence factors and host factors involved in infections and infectious disease. Prereq: perm.

MMBB **564 Developmental Genetics** (1-4 cr, max 8). Molecular basis of cell differentiation and morphogenesis of three-dimensional structures in bacteria, fungi, plants, and animals. Prereq: MMBB 585 and 587 or perm.

MMBB **WS565-WS566 Molecular Biology I-II** (3 cr). WSU BC/BP and GenCB 565-566.

MMBB **567 Signal Transduction** (3 cr). Molecular biology of organismal sensing and response to environmental signals. Prereq: MMBB 585, 587.

MMBB **ID568 Microbial Transformations** (3 cr). Use of microbes in the biodegradation of wastes and bioprocessing to produce valuable chemical stocks. Prereq: MMBB 380, 460.

MMBB **569 Techniques in Microbial Genetics** (3 cr). See MMBB J469/J569.

MMBB **WS578 Molecular Biology Computer Techniques** (4 cr). WSU BC/BP 578.

MMBB **582 Proteins and Enzymes** (3 cr). Alt/yrs. Same as Chem 582. Protein structure and function; mechanisms of enzyme action. Prereq: MMBB 541.

MMBB **ID583 Lipids and Membranes** (3 cr). WSU Micro 583. Alt/yrs. Same as Chem 583. Biosynthesis and metabolism of major classes of complex lipids and sterols; structure, function, and properties of biomembranes and membrane models. Prereq: MMBB 542.

MMBB **585 Prokaryotic Molecular Genetics** (3 cr). Same as Gene 585. Molecular basis of genetics in prokaryotes; mechanisms of RNA, DNA, and protein synthesis, gene regulation, and the shaping of the bacterial cell. Prereq: Biol 351, MMBB 380.

MMBB **587 Eukaryotic Molecular Genetics** (3 cr). Molecular basis of genetics of eukaryotes. Prereq: MMBB 541 and MMBB 585 or Biol 351, MMBB 480 and 488.

MMBB **589 Advanced Topics in Molecular Biology, Microbiology and Biochemistry** (1-9 cr, max 9). Same as Chem 589. Recent research in enzymes, hormones, complex lipids, vitamins, nucleic acids, antibiotics, viruses, and MMBB genetics. Prereq: perm.

MMBB **597** (s) **Practicum** (cr arr). Prereq: perm.

MMBB **598** (s) **Internship** (cr arr). Prereq: perm.

MMBB **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

MMBB **600 Doctoral Research and Dissertation** (cr arr).

Military Science

Gary W. Kosinuk, Head, Dept. of Military Science (West End, Mem. Gym. 83844-2424; phone 208-885-6528).

MS **101 Introduction to Military Science** (1 cr). Provides background in role of an Army officer as a career choice in either the Active Army or the National Guard/Reserves; lec, conference, and activities dealing with military subjects; option of participating in challenging outdoor activities such as whitewater rafting, mountaineering, and weapons familiarization; texts and lab fees provided by dept; no mandatory uniform wear; students also learn about available two- and three-year scholarships and other financial programs for which they may be eligible. Coreq: MS 111. Participation entails no military obligation.

MS **102 Fundamentals of Leadership and Management** (1 cr). Continuation of MS 101. Development of greater understanding of roles and responsibilities of Army officers; lec, conference, and activities dealing with military subjects; participation in challenging outdoor activities such as orienteering, mountaineering, and weapons qualification; occasional uniform wear reqd; texts, uniforms, and lab fees provided by dept. Coreq: MS 112. Participation entails no military obligation.

MS **111-112 Leadership Lab** (1 cr). Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other wk. Coreq: MS 101-102.

MS **201 Applied Leadership and Management** (2 cr). Application of leadership and management skills to various case studies; organization and structure of Army units; basic first aid; practical field training in variety of outdoor skills (mountaineering, rafting, rifle marksmanship); uniform wear reqd; texts, uniforms, and lab fees provided by dept. Prereq: MS 102 or perm of dept. Participation entails no military obligation.

MS **202 Applied Leadership and Management** (2 cr). Troop leading procedures and application of procedures to planning and conducting small unit operations; individual soldier skills, such as military communication, radio procedures, basic map reading, and survival skills; practical field training in variety of outdoor skills (mountaineering, rafting, rifle marksmanship); uniform wear reqd; texts, uniforms, and lab fees provided by dept. Prereq: MS 201 or perm of dept. Participation entails no military obligation.

MS **204** (s) **Special Topics** (cr arr). Prereq: perm.

MS **211-212 Leadership Lab** (1 cr). Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other wk. Coreq: MS 201-202.

MS **280 Raider Operations** (1 cr, max 4). The Chrisman Raider Team is an elite group of individuals who compete on intercollegiate level in military skills of marksmanship, physical fitness, navigation, weapons, rope bridging, and long distance marching; rigorous physical training and practicing technical skills in preparation for two-day competition among schools throughout western U.S. Coreq: another MS course.

MS **289 Basic Encampment** (6 cr). Intensive six-week summer encampment at Fort Knox, Kentucky; hands-on training in fundamentals of leadership in a military environment, land navigation, weapons training, drill and ceremony, and basic skills in doctrinal tactics employed by light infantry leaders. Prereq: 50 cr hrs, 2.0 GPA, and perm of dept head.

MS **299** (s) **Directed Study** (cr arr). Prereq: perm.

MS **301-302 Advanced Leadership and Management** (3 cr). Practical leadership skills in light infantry environment; leadership techniques practiced while learning patrolling and offensive and defensive tactics at squad and platoon level; prepares cadets for six-wk Advanced Camp at Fort Lewis, Washington. Three hrs of lec, 2 hrs of lab, and 3 hrs of physical training a wk, plus field training exercises. Prereq: either ROTC Basic Course, Camp Challenge, or Basic Training from any U.S. military branch of service.

MS **311-312 Leadership Lab** (1 cr). Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other wk. Coreq: MS 301-302.

MS **WS385 History of Modern Warfare** (3 cr). WSU Hist and Mil S 385.

MS **401-402 Seminar in Leadership and Management** (3 cr). Practical application of leadership and management skills, military justice system, administrative and logistical procedures; prep for active duty. Prereq: MS 301-302.

MS **411-412 Leadership Lab** (1 cr). Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other wk. Coreq: MS 401-402.

MS **471-472 Command and Staff Functions** (2 cr). Hands-on practical applications of functions of U.S. Army officers assigned to command and staff positions; planning, coordinating, and implementing operations, training and logistic support for cadet battalion activities; practical exercises in interrelationships between commander, staff, higher headquarters, and subordinate units. Coreq: MS 401-402.

MS **489** **Advanced Encampment** (cr arr). Intensive six-wk summer encampment at Ft. Lewis, Washington. Graded P/F. Prereq: MS 301-302 and perm of dept.

MS **499** (s) **Directed Study** (cr arr). Prereq: perm.

Mining Engineering

Patrick R. Taylor, Head, Dept. of Metallurgical and Mining Engineering (203 McClure Hall 83844-3024; phone 208/885-6376).

Min **103** **Elements of Mining** (3 cr). Open to nonmajors. Terminology and mining's role in national economics and way of life; includes mineral economics, management, prospecting, discovery, development, exploitation, processing, marketing.

Min **118** **Miner Safety Training** (1 cr). A program to provide knowledge and training under Public Law CFR 30, Part 48, Health and Safety Training and Retraining of Miners.

Min **130** **Computer Applications in Mining I** (1 cr). Introduction of PC as used in mining; MS-DOS, spreadsheet calculations in mining, commercial packages, and mining data bases. Two hrs of lab a wk.

Min **200** (s) **Seminar** (cr arr). Prereq: perm.

Min **204** (s) **Special Topics** (cr arr). Prereq: perm.

Min **230** **Computer Applications in Mining II** (2 cr). FORTRAN programming to solve mining problems; survey of other common computer languages used in mining including BASIC, PASCAL, and C. One lec and 2 hrs of lab a wk. Prereq: Min 103, 130.

Min **290** **Mine Development** (2 cr). Ore deposits, exploration techniques, reserve estimating, and preliminary mine development studies.

Min **304** **Explosives** (2 cr). Drilling and blasting equipment, detonation; use of commercial explosives and detonators; design of blasting rounds (surface and underground). One 1-day field trip. Prereq: jr standing or perm.

Min **350** **Mineral Economics** (3 cr). Minerals as resources and commodities; importance of minerals, characteristics of their occurrence and production systems, and nature of mineral resources reserves; factors affecting supply and demand, pricing and marketing of mineral materials.

Min **J351/J561** **Optimization of Engineering Systems** (3 cr). Applications of operations research theory and practice in the minerals industry; deterministic methods: linear, integer, and dynamic programming approaches to optimizing complex systems. Topics in stochastic processes and term project reqd for grad cr. Two lec and two hrs of lab a wk. Prereq: Math 175 or perm.

Min **352** **Project Investment Analysis and Management** (3 cr). Project organization and management, economic and financial decisions, capital and production cost estimating, equipment selection techniques, operation design optimization, and project selection.

Min **370** **Mine Services** (2 cr). Principles and design problems in compressed air power, hoisting, conveying, rail haulage, and material transfer. One field trip. Prereq: Min 103, CE 210, or perm.

Min **372** **Mine Ventilation** (3 cr). Gases, dust, and airflow through mines; circuit analysis and use of computer program to solve air network problems; fan selection and placement; health and safety regulations in the design of mine ventilation systems.

Min **380** **Coal Mining Methods** (2 cr). Surface and underground coal mining methods, systems and design. Prereq: Min 103 or perm.

Min **400** (s) **Seminar** (cr arr). Prereq: perm.

Min **401** **Rock Mechanics** (3 cr). Same as GeoE 407. Basic mechanical properties of rocks and rock masses; lab and in-situ tech to obtain strength, stress distribution, and deformation behavior in rock masses; application of analytical techniques such as the finite element method to design stable mine structures and supporting systems; basic mechanism and new tech of rock fragmentation relating to drilling, blasting, and crushing. Prereq: ME 340.

Min **402** **Rock Mechanics Lab** (2 cr). Measuring rock sample strengths; photo elastic and finite element modeling.

Min **404** (s) **Special Topics** (cr arr). Prereq: perm.

Min **J409/J509** **Solution Mining** (3 cr). See Met J409/J509.

Min **J410/J510** **Simulation of Engineering Systems** (3 cr). Use of the GPSS simulation language for simulation of mine engineering systems; topics in inventory control, scheduling, and optimization; animation of simulation results. Additional projects/assignments reqd for grad cr. Prereq: Min 351 or perm.

Min **421** **Engineering Geophysics** (3 cr). Same as Geop 421. Quantitative treatment of surface and borehole geophysics with emphasis on engineering problems. Three 1-day field trips.

Min **422** **Principles of General Geophysics** (3 cr). See Geop 422.

Min **425** **Mineral Land Management** (3 cr). See Geog 425.

Min **428** **Geostatistics** (3 cr). See GeoE 428.

Min **450** **Surface Mine Design** (2 cr). Introduction to surface mine design, mine surveying, reserve estimating, scheduling, equipment selection, and costing. One surveying field trip (joint with Min 451). Prereq: Min 103, 351, 352, CE 211 or perm; coreq: Min 452.

Min **451** **Underground Mine Design** (3 cr). Evaluation and selection of underground mining methods and engineering systems; mine surveying, costing, and modeling. Two lec and two hrs of lab a wk; one surveying field trip (joint with Min 450). Prereq: Min 103, 351, 352, CE 211 or perm.

Min **452** **Surface Mine Design Lab** (1 cr). Application of geologic data base management and reserve estimating of mineral or coal deposits. Two hrs of lab a wk.

Min **453** **Mine Drainage and Pumping** (2 cr). Design of drainage and pumping system, including construction drawings and equipment specification. Six hrs of lab a wk.

Min **454** **Advanced Geologic and Mine Modeling** (3 cr). Use of geologic, geostatistical, and mine modeling software for detailed ore body modeling, deposit evaluation, and mine design. Six hrs of lab a wk. Prereq: senior standing and perm.

Min **472** **Mineral Industry Case Studies** (3 cr). Same as Geog 492 and Geol 472. Laws, environment, and social issues through definition, evaluation, exploitation, and production of the resource to final sales, transportation economics, and reclamation; specific cases examined by multidisciplinary groups producing a final decision. Prereq: sr standing and perm.

Min **491** **Pre-feasibility Study** (2 cr). Preparation of a professional pre-feasibility report that provides an economic analysis of the ore deposit designed in Min 454. Four hrs of lab a wk. Coreq: Min 454.

Min **499** (s) **Directed Study** (cr arr). Prereq: perm.

Min **500** **Master's Research and Thesis** (cr arr).

Min **501** (s) **Seminar** (cr arr). Prereq: perm.

Min **502** (s) **Directed Study** (cr arr). Prereq: perm.

Min **503** **Mine Stress Analysis** (3 cr). Application of techniques in experimental stress analysis for structural design in all phases of the engineering system; photoelastic modeling and coating; strain gauge techniques; stress patterns in frameworks, rock masses, and foundations. One lec and two 3-hr labs a wk. Prereq: ME 340.

Min **504** **Rock Mechanics II** (3 cr). Same as GeoE 507. Theories of rupture of elastic and inelastic, brittle materials; mechanisms of fracture propagation and effects in engineering structures and rock fragmentation; effects of nuclear blasting, earthquakes and other dynamic stress waves. Prereq: Min 401 or perm.

Min **506** (s) **Special Topics** (cr arr). Prereq: perm.

Min **509** **Solution Mining** (3 cr). See Met J409/J509.

Min **510** **Simulation of Engineering Systems** (3 cr). See Min J410/J510.

Min **513** **Advanced Mine Ventilation I** (3-5 cr). Thermodynamic and motive column analyses of mine airflow. Students who have taken Min 372 register for 3 cr.

Min **520** **Mining Geophysics** (3 cr). Same as Geop 521. Alt/yrs. Theory and application of magnetic, electric, electromagnetic, and radioactive methods of geophysical prospecting for metallic and nonmetallic mineral deposits. Two lec and one 3-hr lab a wk; one 3-day field trip. Prereq: perm.

Min **528** **Advanced Geostatistics** (3 cr). See GeoE 528.

Min **540** **Mine Valuation** (3 cr). Mine examination and valuation; sampling methods and calculations; determining present value of a deposit.

Min **560** **Mine Management** (3 cr). Financing, management labor relations, operations, and government regulations. Prereq: perm.

Min **561** **Optimization of Engineering Systems** (3 cr). See Min J351/J561.

Min **570** **Mine Systems Design** (3-6 cr). Alt/yrs. Integration and synthesis of equipment, methods, and design; use of latest operation research tools to provide a complete mine plan of operation. Prereq: perm.

Min **597** (s) **Practicum** (cr arr). Prereq: perm.

Min **598** (s) **Internship** (cr arr). Prereq: perm.

Min **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Mining Engineering-Metallurgy

Patrick R. Taylor, Head, Dept. of Metallurgical and Mining Engineering (203 McClure Hall 83844-3024; phone 208-885-6376).

MnMt **200** (s) **Seminar** (0 cr). Appropriate speakers and unscheduled activities relating to the mineral field. Graded P/F.

MnMt **400** (s) **Seminar** (0 cr). Appropriate speakers and unscheduled activities relating to the mineral field. Graded P/F.

MnMt **600** **Doctoral Research and Dissertation** (cr arr). Prereq: enrollment in the composite doctoral program in mining engineering-metallurgy.

Music

Richard R. Hahn, Director, Lionel Hampton School of Music (205 Music Bldg. 83844-4015; phone 208/885-6231; e-mail music@uidaho.edu).

APPLIED PERFORMANCE STUDIES

MusA **114** (s) **Individual Instruction** (1 cr, max arr). For secondary or minor instrument, nonmajors, and undeclared majors; may not be taken for audit. One-half hour of private instruction a wk. Instruction offered in piano, organ, harpsichord, voice, flute, oboe, clarinet, saxophone, bassoon, trumpet, horn, euphonium, trombone, tuba, percussion, violin, viola, cello, contrabass, harp, or guitar. Prereq: audition by committee.

MusA **115** (s) **Individual Instruction** (2 cr, max 4). For music majors who need to correct deficiencies in major instrument area; may not be taken for audit. One hour of private instruction a wk plus convocation/area recital/studio class; final exam conducted by jury. See MusA 114 for instructional areas. Prereq: placement audition by committee.

MusA **J117/J317/J517** (s) **University Choir** (1 cr, max arr). Open to all students. One 2-1/2 hr night rehearsal a wk. Prereq: perm.

MusA **J118/J318/J518** (s) **Jazz Choir** (1 cr, max arr). Open to all students. Three rehearsals a wk. Prereq: perm.

MusA **J119/J319/J519** (s) **Marching Band** (1-3 cr, max arr). Open to all students. Performance at home football games and other events and travel to selected away football games; field trips. Prereq: perm.

MusA **J121/J321/J521** (s) **Concert Band** (1 cr, max arr). Open to all students. Three rehearsals a wk. Prereq: perm.

MusA **124** (s) **Individual Instruction** (2 cr, max arr). For music majors in music degree programs other than performance; may not be taken for audit. One hour of private instruction a wk plus convocation/area recital/studio class; final exam conducted by jury. See MusA 114 for instruction areas. Prereq: placement audition by committee.

MusA **134** (s) **Individual Instruction** (3 cr, max arr). For applied music majors in the B.Mus. performance degree; may not be taken for audit. One hour of private instruction a wk plus convocation/area recital/studio class; final exam conducted by jury. See MusA 114 for instruction areas. prereq: placement audition by committee.

MusA **145-146/245-246 Piano Class** (1 cr). May not be taken for audit. Four-semester beginning piano sequence. Two lec-labs a wk. Prereq: perm of dept.

MusA **147-148 Voice Class** (1 cr). May not be taken for audit. Two-semester sequence for beginning singers. Two lec-labs a wk. Prereq: MusA 147 (for 148) or perm of dept.

MusA **J149-J150/J349-J350 Voice for Actors** (1 cr, max arr). Group voice instruction based on theatre and musical theatre materials. Prereq: audition and perm of dept.

MusA **151-152 Guitar Class** (1 cr). Two lec-labs a wk. May not be taken for audit. Prereq: perm of dept.

MusA **153 Guitar Class for Nonmajors** (2 cr). Group instruction in guitar and basic musicianship. May not be taken for audit.

MusA **200** (s) **Seminar** (cr arr). Prereq: perm.

MusA **203** (s) **Workshop** (cr arr). Prereq: perm.

MusA **204** (s) **Special Topics** (cr arr). Prereq: perm.

MusA **245-246 Piano Class** (1 cr). See MusA 145-146/245-246.

MusA **299** (s) **Directed Study** (cr arr). Prereq: perm.

MusA **314** (s) **Individual Instruction** (1 cr, max arr). See MusA 114 for description.

MusA **J315/J515 Accompanying** (1 cr, max arr). Principles of accompanying with use of keyboard instruments; lab assignments under supervision. Two lec-labs a wk. Prereq: audition and completion of semester of MusA 124 or 134.

MusA **J316/J516 Concert Choir—Vandaleers** (1 cr, max arr). Open to all students. Four rehearsals a wk; field trips. Prereq: audition and perm.

MusA **317** (s) **University Choir** (1 cr, max arr). See MusA J117/J317/J517.

MusA **318** (s) **Jazz Choir** (1 cr, max arr). See MusA J118/J318/J518.

MusA **319** (s) **Marching Band** (1-3 cr, max arr). See MusA J119/J319/J519.

MusA **J320/J520** (s) **Wind Ensemble** (1 cr, max arr). Open to all students. Four rehearsals a wk. Prereq: audition and perm.

MusA **321** (s) **Concert Band** (1 cr, max arr). See MusA J121/J321/J521.

MusA **J322/J522** (s) **Orchestra** (1 cr, max arr). Open to all students. Four rehearsals a wk. Prereq: audition and perm.

MusA **J323/J523** (s) **Jazz Ensemble** (1 cr, max arr). Open to all students. Three rehearsals a wk. Prereq: audition and perm.

MusA **324** (s) **Individual Instruction** (2 cr, max arr). See MusA 124 for description; see "Upper-Division Standing" in part 5 for prerequisites.

MusA **334** (s) **Individual Instruction** (3 cr, max arr). See MusA 134 for description; see "Upper-Division Standing" in part 5 for prerequisites.

MusA **349-350 Voice for Actors** (1 cr, max arr). See MusA J149-J150/J349-J350.

MusA **J365/J565** (s) **Chamber Ensemble** (1 cr, max arr). Open to all students. Performance opportunities in chamber ensembles: string, brass, woodwind, percussion, keyboard, vocal, and mixed. Prereq: audition and perm.

MusA **J380/J580** (s) **Opera Workshop** (1-3 cr, max arr). Analysis, rehearsal, and performance of operatic literature. Prereq: audition and perm.

MusA **387 Conducting I** (2 cr). Conducting techniques, score reading, and interpretation of scores for large choral and instrumental ensembles. Prereq: MusC 141.

MusA **400** (s) **Seminar** (cr arr). Prereq: perm.

MusA **403** (s) **Workshop** (cr arr). Prereq: perm.

MusA **404** (s) **Special Topics** (cr arr). Prereq: perm.

MusA **J454/J554 Performance Practices** (2 cr). Performance practices of music from Renaissance to present. Prereq: MusH 321-322 and upper-division status (see "Curricular Requirements") or graduate status or perm.

MusA **J455/J555 Keyboard Performance Practices** (1 cr). Study of interpretation of keyboard music from Baroque through 20th century; learn to interpret scores, teach, and perform keyboard music stylistically; acquire knowledge of major performing artists and recordings from each period of music. Registration for graduate credit requires additional research into original treatises from each period of music, resulting in the editing of a piece of music from each of these periods. Coreq: MusA J454/J554.

MusA **487 Conducting II** (2 cr). Prereq: MusA 387 or perm.

MusA **490 Recital** (0 cr). For students required to have one-half recital. Graded P/F. Prereq: audition and perm of dept; coreq: MusA 324 or 334.

MusA **491 Recital** (0 cr). For students required to have a full recital. Graded P/F. Prereq: audition and perm of dept; coreq: MusA 334.

MusA **499** (s) **Directed Study** (cr arr). Prereq: perm.

MusA **500 Master's Research and Thesis** (cr arr).

MusA **501** (s) **Seminar** (cr arr). Prereq: perm.

MusA **502** (s) **Directed Study** (cr arr). Prereq: perm.

MusA **503** (s) **Workshop** (cr arr). Prereq: perm.

MusA **504** (s) **Special Topics** (cr arr). Prereq: perm.

MusA **514** (s) **Individual Instruction** (1 cr, max arr). See MusA 114 for description.

MusA **515 Accompanying** (1 cr, max arr). See MusA J315/J515.

MusA **516 Concert Choir—Vandaleers** (1 cr, max arr). See MusA J316/J516.

MusA **517** (s) **University Choir** (1 cr, max arr). See MusA J117/J317/J517.

MusA **518** (s) **Jazz Choir** (1 cr, max arr). See MusA J118/J318/J518.

MusA **519** (s) **Marching Band** (1-3 cr, max arr). See MusA J119/J319/J519.

MusA **520** (s) **Wind Ensemble** (1 cr, max arr). See MusA J320/J520.

MusA **521** (s) **Concert Band** (1 cr, max arr). See MusA J121/J321/J521.

MusA **522** (s) **Orchestra** (1 cr, max arr). See MusA J322/J522.

MusA **523** (s) **Jazz Ensemble** (1 cr, max arr). See MusA J323/J523.

MusA **524** (s) **Individual Instruction** (2-3 cr, max arr). See MusA 124 for description.

MusA **534** (s) **Individual Instruction** (3-6 cr, max arr). For students in the M.Mus. performance degree; see MusA 134 for description.

MusA **554 Performance Practices** (2 cr). See MusA J454/J554.

MusA **555 Keyboard Performance Practices** (1 cr). See MusA J455/J555.

MusA **565** (s) **Chamber Ensemble** (1 cr, max arr). See MusA J365/J565.

MusA **580** (s) **Opera Workshop** (1-3 cr, max arr). See MusA J380/J580.

MusA **590** (s) **Master's Recital** (0 cr). For students whose emphasis is other than performance. May be repeated. Graded P/F. Prereq: audition and perm of committee; coreq: MusA 524.

MusA **591** (s) **Master's Recital** (0 cr). For students whose emphasis is in performance. May be repeated. Graded P/F. Prereq: audition and perm of committee; coreq: MusA 534.

MusA **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

THEORY AND COMPOSITION

MusC **120 Fundamentals of Music** (2 cr). For students in fields other than music. Not open to students who have taken MusC 141.

MusC **139-140 Aural Skills I-II** (2 cr). Exercises and drill in sight-singing and ear training. Three lec-labs a wk. Recommended coreq: MusA 145-146.

MusC **141 Theory of Music I** (2 cr). Melodic and harmonic materials, part-writing skills, and analysis. Prereq: perm of dept.

MusC **142 Theory of Music II** (2 cr). Harmonic materials, part-writing skills, and analysis. Prereq: MusC 141.

MusC **200** (s) **Seminar** (cr arr). Prereq: perm.

MusC **203** (s) **Workshop** (cr arr). Prereq: perm.

MusC **204** (s) **Special Topics** (cr arr). Prereq: perm.

MusC **239-240 Aural Skills III-IV** (1 cr). Continuation of MusC 140. Two lec-labs a wk. Recommended coreq: MusA 245-246.

MusC **241 Theory of Music III** (3 cr). Prereq: MusC 142.

MusC **242 Theory of Music IV** (3 cr). Prereq: MusC 241.

MusC **299** (s) **Directed Study** (cr arr). Prereq: perm.

MusC **325 Composition** (2 cr, max arr). Creative writing. Prereq: MusC 240, 242.

MusC **327 Orchestration** (3 cr). Principles of instrumentation and transcription with emphasis on idiomatic instrumental writing leading to projects in scoring for chamber groups, orchestra, and band. Prereq: MusC 242 or perm.

MusC **329 Theoretical Basis of Jazz** (2 cr). Harmonic, melodic, rhythmic, and stylistic analysis of principal trends. Prereq: MusC 141 or perm.

MusC **331 Counterpoint** (3 cr). Style and technique of polyphonic 16th century vocal music through 18th century instrumental music, with emphasis on two- to three-part writing; motet, canon, invention, and fugue. Prereq: MusC 242 or perm.

MusC **400** (s) **Seminar** (cr arr). Prereq: perm.

MusC **403** (s) **Workshop** (cr arr). Prereq: perm.

MusC **404** (s) **Special Topics** (cr arr). Prereq: perm.

MusC **425 Advanced Composition** (2 cr, max arr). Continuation of MusC 325. Increasing emphasis on varied media and larger forms, but with value being placed on creativity and originality. Prereq: MusC 325 (two semesters)

MusC **426 Electronic Music** (2 cr). Techniques of musical composition using electronic media. Prereq: MusC 242 or perm.

MusC **428 Choral Arranging** (2 cr). Alt/yrs. Techniques and devices used in arranging for vocal ensembles. Prereq: MusC 242 or perm.

MusC **J432/J532 Advanced Counterpoint** (2 cr). Advanced contrapuntal writing, including canon and fugue. Additional projects/assignments reqd for grad cr. Prereq: MusC 331.

MusC **442 Musical Analysis** (2 cr). Study of traditional forms and analytical techniques. Prereq: MusC 242.

MusC **461 Band Arranging** (2-4 cr, max 4). Alt/yrs. Scoring for wind and percussion instruments; range, transposition, and tone color. Prereq: MusC 242 or perm.

MusC **490 Senior Recital** (0 cr). For students in composition required to have a full recital. Graded P/F. Prereq: audition and perm of dept; coreq: MusC 425.

MusC **499** (s) **Directed Study** (cr arr). Prereq: perm.

MusC **500 Master's Research and Thesis** (cr arr).

MusC **501** (s) **Seminar** (cr arr). Prereq: perm.

MusC **502** (s) **Directed Study** (cr arr). Prereq: perm.

MusC **503** (s) **Workshop** (cr arr). Prereq: perm.

MusC **504** (s) **Special Topics** (cr arr). Prereq: perm.

MusC **507 Individual Instruction: Composition** (cr arr). Prereq: MusC 525 or perm.

MusC **521 Musical Analysis** (3 cr). Analysis of selected musical compositions. Prereq: perm.

MusC **525 Composition** (2 cr, max arr). Creative writing.

MusC **527 Advanced Orchestration** (2 cr, max arr). Orchestral scoring; recent trends. Prereq: MusC 327 or perm.

MusC **532 Advanced Counterpoint** (2 cr). See MusC J432/J532.

MusC **590** (s) **Master's Recital** (0 cr). For students whose degree requires a composition recital as part of the degree requirements. Graded P/F. Prereq: audition and perm of committee; coreq: MusC 507 or 525.

MusC **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

HISTORY AND LITERATURE

MusH **101** (s) **Survey of Music** (3 cr) (C) (MusH 100). Satisfies core requirement J-3-d. Not open for cr to majors or to those who have taken MusC 141. Intro to the art and nature of music; emphasis on aural skills, historical styles, musical forms, and the literature of music.

MusH **111 Introduction to Music** (2 cr) (MusH 101). Intro to art and nature of music; representative world musical cultures and overview of Western vernacular and cultivated traditions.

MusH **200** (s) **Seminar** (cr arr). Prereq: perm.

MusH **203** (s) **Workshop** (cr arr). Prereq: perm.

MusH **204** (s) **Special Topics** (cr arr). Prereq: perm.

MusH **299** (s) **Directed Study** (cr arr). Prereq: perm.

MusH **321 Music in Western Civilization I** (3 cr). Musical culture, styles, and genres from the Middle Ages through 1750. Prereq: MusH 101, 111, or perm.

MusH **322 Music in Western Civilization II** (3 cr). European and American musical culture, styles, and genres from 1750 to World War I. Prereq: MusH 101, 111, or perm.

MusH **323 Music in Western Civilization III** (3 cr). European and American musical cultures, styles, and genres, including jazz, from World War I to the present. Prereq: MusH 101, 111, or perm.

MusH **400** (s) **Seminar** (cr arr). Prereq: perm.

MusH **403** (s) **Workshop** (cr arr). Prereq: perm.

MusH **404** (s) **Special Topics** (cr arr). Prereq: perm.

MusH **J410/J510** (s) **Studies in Jazz History** (3 cr). Alt/yrs. Selected topics in jazz. Additional projects/assignments reqd for grad cr. Prereq: MusH 321-323 or perm.

MusH **J416/J516** (s) **Studies in Renaissance Music** (3 cr). Alt/yrs. Selected topics in Renaissance music. Additional projects/assignments reqd for grad cr. Prereq: MusH 321-323 or perm.

MusH **J417/J517** (s) **Studies in Baroque Music** (3 cr). Alt/yrs. Selected topics in Baroque music. Additional projects/assignments reqd for grad cr. Prereq: MusH 321-323 or perm.

MusH **J418/J518** (s) **Studies in Classic/Romantic Music** (3 cr). Alt/yrs. Selected topics in Classic/Romantic music. Additional projects/assignments reqd for grad cr. Prereq: MusH 321-323 or perm.

MusH **J419/J519** (s) **Studies in 20th-Century Music** (3 cr). Alt/yrs. Selected topics in 20th-century music. Additional projects/assignments reqd for grad cr. Prereq: MusH 321-323 or perm.

MusH **J440/J540** (s) **Studies in American Music** (3 cr). Alt/yrs. Selected topics in American music. Additional projects/assignments reqd for grad cr. Prereq: MusH 321-323 or perm.

MusH **J451/J551** (s) **Repertoire** (2 cr, max arr). May be repeated for cr as content changes. Historical and analytical survey of literature available in all performing media. Additional projects/assignments reqd for grad cr. Prereq: jr standing and perm.

MusH **J459/J559** (s) **Studies in Opera Literature** (3 cr). Alt/yrs. Open to all students. Selected masterworks of opera literature. Additional projects/assignments reqd for grad cr. Prereq: perm.

MusH **499** (s) **Directed Study** (cr arr). Prereq: perm.

MusH **500 Master's Research and Thesis** (cr arr).

MusH **501** (s) **Seminar** (cr arr). Prereq: perm.

MusH **502** (s) **Directed Study** (cr arr). Prereq: perm.

MusH **503** (s) **Workshop** (cr arr). Prereq: perm.

MusH **504** (s) **Special Topics** (cr arr). Prereq: perm.

MusH **510** (s) **Studies in Jazz History** (3 cr). See MusH J410/J510.

MusH **516** (s) **Studies in Renaissance Music** (3 cr). See MusH J416/J516.

MusH **517** (s) **Studies in Baroque Music** (3 cr). See MusH J417/J517.

MusH **518** (s) **Studies in Classic/Romantic Music** (3 cr). See MusH J418/J518.

MusH **519** (s) **Studies in 20th-Century Music** (3 cr). See MusH J419/J519.

MusH **540** (s) **Studies in American Music** (3 cr). See MusH J440/J540.

MusH **551** (s) **Repertoire** (2 cr, max arr). See MusH J451/J551.

MusH **559** (s) **Studies in Opera Literature** (3 cr). See MusH J459/J559.

MusH **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

MUSIC TEACHING

MusT **200** (s) **Seminar** (cr arr). Prereq: perm.

MusT **201 Introduction to Music Teaching** (1 cr). Music education majors take this course in lieu of EDTE 202. Presentation of field experiences in primary and secondary music education. Graded P/F. Prereq or coreq: ED 201.

MusT **203** (s) **Workshop** (cr arr). Prereq: perm.

MusT **204** (s) **Special Topics** (cr arr). Prereq: perm.

MusT **251** **String Instrument Techniques** (1 cr). Group instruction. Problems of playing and teaching stringed instruments in elementary and secondary schools. Prereq: perm.

MusT **252** **Clarinet Techniques** (1 cr). Group instruction. Problems of playing and teaching clarinet in elementary and secondary schools. Prereq: perm.

MusT **253** **Brass Instrument Techniques** (1 cr). Group instruction. Problems of playing and teaching brass instruments in elementary and secondary schools. Prereq: perm.

MusT **254** **Percussion Techniques** (1 cr). Group instruction. Problems of playing and teaching percussion instruments in elementary and secondary schools. Prereq: perm.

MusT **299** (s) **Directed Study** (cr arr). Prereq: perm.

MusT **351** **Advanced String Techniques** (1 cr). Group instruction. Prereq: MusT 251 or perm.

MusT **352** **Double Reed Techniques** (1 cr). Group instruction. Prereq: MusT 252 or perm.

MusT **353** **Advanced Brass Techniques** (1 cr). Group instruction. Prereq: MusT 253 or perm.

MusT **354** **Flute and Saxophone Techniques** (1 cr). Group instruction. Prereq: MusT 252 or perm.

MusT **381** **Elementary School Music Methods I** (3 cr). Same as EDTE 381. Curriculum, organization, and instructional materials for teaching general classroom music. Must be taken before enrolling in MusT 432. Prereq: perm.

MusT **383** **Principles of Music Teaching** (3 cr). Students in the School of Music take this course in lieu of ED 468. Philosophy, principles, curriculum, and organization of the school music program. Must be taken before enrolling in MusT 432. Prereq: MusC 142.

MusT **385** **Choral Music in the Secondary School** (2 cr). Methods, instructional materials, and techniques for teaching choral music in grades 7-12. Two lec and one lab a wk. Must be taken before enrolling in MusT 432. Prereq: 2 cr in MusA 316 or 317, MusC 142; prereq or coreq: MusT 383, MusA 387, or perm.

MusT **386** **Instrumental Music in the Secondary School** (2 cr). Methods, instructional materials, and techniques for teaching instrumental music in grades 7-12. Two lec and one lab a wk. Must be taken before enrolling in MusT 432. Prereq: MusC 142; prereq or coreq: MusT 383, MusA 387, or perm.

MusT **389** **Orff and Kodaly** (2 cr). Philosophies and teaching techniques attributed to Carl Orff and Zoltan Kodaly; Orff emphasizes movement, improvisation, singing, and percussion instruments; Kodaly emphasizes solfege singing, folk songs, child development, and personal musicianship. Prereq: perm.

MusT **400** (s) **Seminar** (cr arr). Prereq: perm.

MusT **403** (s) **Workshop** (cr arr). Prereq: perm.

MusT **404** (s) **Special Topics** (cr arr). Prereq: perm.

MusT **432** (s) **Practicum: Music Teaching** (7 or 14 cr). Supervised music teaching in public schools. Graded P/F. Prereq: ED 312, 314, MusT 445, cumulative GPA of 2.50, and perm of School of Music. (Submit application via coordinator of music education to the director of clinical experiences in teacher education by December 1 of school yr before enrolling).

MusT **J435/J535** (s) **Pedagogy and Materials** (2 cr, max arr). Methods and materials of performance techniques for each performance field. Additional projects/assignments reqd for grad cr. Prereq: jr standing and perm.

MusT **438** (s) **Practicum** (cr arr). Studio and classroom teaching of secondary music majors, minors, or electives. Prereq: perm.

MusT **445** **Proseminar in Music Teaching** (2 cr). Orientation to practicum.

MusT **465** **Jazz Band Rehearsal Techniques** (1 cr). Methods, materials, and literature for jazz bands in public schools. Coreq: MusT 466, 467.

MusT **466** **Marching Band Techniques** (1 cr). Techniques of drilling; materials for field and street maneuvers; preparation of shows. Prereq: MusC 242; coreq: MusT 465, 467.

MusT **467** **Instrumental Literature for Public Schools** (1 cr). Music and materials suitable for instrumental ensembles in schools. Coreq: MusT 465, 466.

MusT **468** **Literature for Vocal Ensembles** (2 cr). Chamber music materials suitable for use in schools.

MusT **485** **Choral Ensemble Rehearsal Techniques** (1 cr, max arr). Various techniques of rehearsing singers in an ensemble. Coreq: MusT 385.

MusT **486** **Instrumental Ensemble Rehearsal Techniques** (1 cr, max arr). Various techniques of rehearsing string, wind, and percussion players in an ensemble. Coreq: MusT 386.

MusT **499** (s) **Directed Study** (cr arr). Prereq: perm.

MusT **500** **Master's Research and Thesis** (cr arr).

MusT **501** (s) **Seminar** (cr arr). Prereq: perm.

MusT **502** (s) **Directed Study** (cr arr). Prereq: perm.

MusT **503** (s) **Workshop** (cr arr). Prereq: perm.

MusT **504** (s) **Special Topics** (cr arr). Prereq: perm.

MusT **505** **Curriculum Development** (3 cr). Scope and sequence of musical experience in public schools through curriculum development.

MusT **506** **Teaching Systems** (3 cr). For experienced teachers. Survey of Orff, Kodaly, Gordon, and Manhattanville and their relationship to teaching music at all levels. Prereq: one yr teaching experience or perm.

MusT **507** **Evaluation in Music** (3 cr). Study and development of evaluation instruments for use in teaching music.

MusT **535** (s) **Pedagogy and Materials** (2 cr, max arr). See MusT J435/J535.

MusT **538** (s) **Practicum** (cr arr). Studio and classroom teaching of secondary music majors, minors, or electives. Prereq: perm.

MusT **562** **Choral Literature and Techniques** (2 cr). Prereq: MusT 385, MusA 387, or perm.

MusT **581** (s) **College Music Teaching** (1 cr, max 3). Contemporary teaching techniques in one or more of the following fields: theory, music literature, music education, piano, voice, woodwinds, strings, brass, and percussion. Prereq: perm.

MusT **583** **School Music Administration** (2 cr). Principles underlying sound policies in the supervision and administration of school music. Prereq: one yr of teaching experience or perm.

MusT **597** (s) **Practicum** (cr arr). Prereq: perm.

MusT **598** (s) **Internship** (cr arr). Prereq: perm.

MusT **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

GENERAL

MusX **140** **Convocation** (0 cr). Required of all music majors for seven semesters and music minors for two semesters (minimum of 10 recitals a semester). Graded P/F.

MusX **200** (s) **Seminar** (cr arr). Prereq: perm.

MusX **203** (s) **Workshop** (cr arr). Prereq: perm.

MusX **204** (s) **Special Topics** (cr arr). Prereq: perm.

MusX **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

MusX **283-284** (s) **Diction for Singers** (2 cr). Alt/yrs. Two-semester sequence (English/Italian and German/French) in study of language sounds as represented by the International Phonetic Assoc.

MusX **299** (s) **Directed Study** (cr arr). Prereq: perm.

MusX **400** (s) **Seminar** (cr arr). Prereq: perm.

MusX **403** (s) **Workshop** (cr arr). Prereq: perm.

MusX **404** (s) **Special Topics** (cr arr). Prereq: perm.

MusX **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

MusX **498** (s) **Internship** (1-3 cr). Open only to majors in the School of Music. Graded P/F. Prereq: perm of director, School of Music.

MusX **499** (s) **Directed Study** (cr arr). Prereq: perm.

MusX **500** **Master's Research and Thesis** (cr arr).

MusX **501** (s) **Seminar** (cr arr). Prereq: perm.

MusX **502** (s) **Directed Study** (cr arr). Prereq: perm.

MusX **503** (s) **Workshop** (cr arr). Prereq: perm.

MusX **504** (s) **Special Topics** (cr arr). Prereq: perm.

MusX **511** **Bibliography and Research** (3 cr). Orientation to grad study; bibliography and research procedures.

MusX **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Naval Science

Albert Z. Schwartz, Head, Dept. of Naval Science (101 Navy Bldg. 83844-1122; phone 208/885-6333).

NS **ID100** **Drill/Lab** (0 cr). WSU N S 100. Reqd of all Navy-Marine Corps OEP students. Two 1-hr labs a wk.

NS **ID101** **Introduction to Naval Science** (2 cr). WSU N S 101. Intro to the Navy: customs, structure, career paths, ship and aircraft of the U.S. Fleet.

NS **ID102** **Ships Systems I** (3 cr). WSU N S 102. Intro to Naval shipboard engineering systems; propulsion systems; nuclear, gas turbine, and conventional; auxiliary systems and shipboard damage control; basic concepts in ship design.

NS **200** (s) **Seminar** (cr arr). Prereq: perm.

NS **ID201 Ships Systems II** (3 cr). WSU N S 201. Naval weapons systems; theory and process of detection (radar and sonar), evaluation; weapons; delivery, guidance, and explosives; integration of weapons systems with command, control, and communications systems.

NS **ID202 Seapower and Maritime Affairs** (2 cr). WSU N S 202. Survey of U.S. Naval history; seapower and maritime affairs emphasizing present-day concerns; comparisons of U.S. and foreign Naval strategies.

NS **299** (s) **Directed Study** (cr arr). Prereq: perm.

NS **ID301 Navigation** (3 cr). WSU N S 301. Theory, principles, and procedures of terrestrial, celestial, and electronic navigation.

NS **ID302 Naval Operations** (3 cr). WSU N S 302. Naval operations and tactics, relative motion, and "rules of the nautical road."

NS **ID311 Evolution of Warfare** (3 cr). WSU N S 311. Evolution of war through tactics; strategy from Sun Tzu to J.F.C. Fuller. Recommended preparation: NS 101, 202.

NS **ID401 Naval Organization and Management** (2 cr). WSU N S 401. Theories of management and management resources, motivational theories, and leadership.

NS **ID402 Naval Leadership** (2 cr). WSU N S 402. Naval administration, emphasizing the U.C.M.J., human resource management, material management, and supply systems. Recommended preparation: NS 401.

NS **ID412 Amphibious Operations** (3 cr). WSU N S 412. Amphibious doctrine from Gallipoli to the Mayaguez. Recommended preparation: NS 311.

NS **499** (s) **Directed Study** (cr arr). Prereq: perm.

Nuclear Engineering

David M. Woodall, Director, Program in Nuclear Engineering (125 Janssen Engr. Bldg. 83844-1011; phone 208/885-6479). Faculty: Jasper R. Avery, Thomas E. Carleson, Donald F. Elger, Joseph J. Feeley, E. Clark Lemmon, Alan G. Stephens, David M. Woodall.

RELATED FIELDS: For other courses offered in the nuclear field, see Chem 513 and 516, Phys 465, 566, 585, 586, and 587.

NE **R120 Fundamental Concepts of Nuclear Engineering** (3 cr). Basic concepts; intro to atomic structure, nuclear reactions, fission process, nuclear reactor fundamentals and types.

NE **R220 Analysis of Nuclear Engineering Systems I** (3 cr). Primarily for technologists. Elementary quantitative analysis, with emphasis on the qualitative aspects of nuclear engineering systems; ore processing, fuel element fabrication, materials selection, shielding, and control. Prereq: NE 120 or perm.

NE **R221 Analysis of Nuclear Engineering Systems II** (3 cr). Primarily for technologists. Continuation of NE R220. Heat removal, reactor design, fuel recycle, and waste disposal. Prereq: NE 220 or perm.

NE **ID&WS360 Nuclear Engineering** (3 cr). WSU M E 461. Atomic and nuclear physics; reactor system physics and heat transfer. Prereq: CE 320, Math 310.

NE **404** (s) **Special Topics** (cr arr). Prereq: perm.

NE **ID460 Nuclear Reactor Engineering** (3 cr). WSU M E 460. Nuclear reactor design problems in thermodynamics, fluid flow, heat transfer, fuel preparation, waste disposal, and materials selection; disc of reactor types. Prereq: NE 360 or perm.

NE **R470 Nuclear Reactor Safety** (3 cr). Light water reactor safety: evaluation methods, system disturbances, safety criteria, containment, NRC licensing process, and computer codes for nuclear safety analysis; intro to liquid metal safety. Prereq: perm.

NE **R500 Master's Research and Thesis** (cr arr).

NE **R501** (s) **Seminar** (cr arr). Prereq: perm.

NE **502** (s) **Directed Study** (cr arr). Prereq: perm.

NE **R530 Two-Phase Flow** (3 cr). Treatment of fluid mechanics and heat transfer in conjunction with nuclear reactors where two-phase flow problems are found.

NE **R540 Fusion Energy** (3 cr). Basic concepts and experimental approaches to fusion, elementary plasma theory, plasma oscillations, heating; fusion reactor technology development and long range prospects.

NE **R550 Topics in Advanced Nuclear Engineering** (3 cr). Prereq: perm.

NE **R565 Reactor Engineering** (3 cr). Radiation shielding, materials, instrumentation and controls, separation of stable isotopes, chemical separation and processing, special techniques. Prereq: Phys 566 or perm.

NE **R580 Waste Management and Nuclear Fuel Reprocessing** (3 cr). Head-end processing, solvent extraction processes, ion exchange processes, precipitation processes, and effluent disposal.

NE **581 Treatment of Radioactive Waste** (3 cr). Alternative processes and operations for treatment of radioactive wastes before long-term storage. Prereq: Math 310, NE 360 or Phys 587.

Philosophy

Kathryn Paxton George, Chair, Dept. of Philosophy (408 Morrill Hall 83844-3016; phone 208/885-7107).

Phil **103 Ethics** (3 cr) (C) (Phil 101). Satisfies core requirement J-3-d. Introduction to philosophical reasoning through historical study of Western moral thought.

Phil **202 Belief and Reality** (3 cr) (Phil 201). Introduction to epistemology (examination of grounds and limits of knowledge) and metaphysics (inquiry into the nature of reality) through historical and contemporary readings.

Phil **204** (s) **Special Topics** (cr arr). Prereq: perm.

Phil **207 Biomedical Ethics** (3 cr). Ethical questions in the health professions and medical research, with emphasis on current dilemmas faced by physicians, nurses, medical technologists, and dentists; case analysis in context of modern ethical theory.

Phil **210 Critical Thinking** (3 cr). Acquiring and improving important skills of thinking, reading, and writing critically; emphasis on avoiding fallacies and mastering forms of valid argument in ordinary language.

Phil **211 Introduction to Symbolic Logic** (3 cr). Development of systematic techniques for assessing validity of arguments; includes categorical logic, propositional logic, and elementary quantificational logic.

Phil **300 Existentialism** (3 cr). Analysis of the writings of such figures as Kierkegaard, Nietzsche, Dostoyevsky, Hesse, Kafka, Buber, Camus, and Sartre.

Phil **302 Biblical Judaism: Texts and Thought** (3 cr). Same as RelS 302. Analysis of the Hebrew Bible (Old Testament) and related texts with an emphasis on hermeneutics and thought.

Phil **303 Early Christianity: Texts and Thought** (3 cr). Same as RelS 303. Analysis of the New Testament and other early Christian texts of the first and second centuries C.E. with an emphasis on hermeneutics and thought.

Phil **305 Philosophy of Religion** (3 cr). Same as RelS 305. Philosophical investigation of such issues as the existence and attributes of God, problems of free will and evil, afterlife, miracles, and creation.

Phil **306 Hindu Thought** (3 cr). Same as RelS 306. Analysis of the Vedas, the Upanishads, the Bhagavad-gita, Jainism, and later Hindu thought.

Phil **307 Buddhism** (3 cr). Same as RelS 307. Philosophy and religion of Gautama Buddha as it developed in India, Tibet, China, and Japan.

Phil **308 Confucianism and Taoism** (3 cr). Same as RelS 308. Analysis of writings of Lao-tzu, Confucius, Mencius, Chuang-tzu, and medieval Confucianism.

Phil **ID&WS309 History of Ancient Philosophy** (3 cr) (C). WSU Phil 290. Philosophical thought from the early Greeks through the Middle Ages; concentration on metaphysics and theory of knowledge.

Phil **ID&WS310 History of Modern Philosophy** (3 cr) (C). WSU Phil 305. Critical evaluation of the thought of major figures in early modern philosophy, such as Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume, and Kant; emphasis on metaphysics and epistemology.

Phil **ID&WS311 Metaphysics** (3 cr). WSU Phil 340. Classical and contemporary readings on such items as realism versus nominalism, free will and determinism, the nature of causality, the existence of God, personal identity, modality.

Phil **314 Contemporary Moral Problems** (3 cr). Philosophical case analysis in areas of current concern such as racism and sexism, sexual morality, professional responsibility, abortion, welfare of animals, and right to die.

Phil **401 Philosophy of the Arts** (3 cr). Chief conceptions of the nature of the arts and their interpretation.

Phil **WS402 Seminar in Symbolic Logic** (3 cr). WSU Phil 401. Alt/yrs.

Phil **404** (s) **Special Topics** (cr arr). Prereq: perm.

Phil **405 Feminism and Philosophy** (3 cr). Analysis of schools of feminist theory and impact of feminism on philosophy and other disciplines.

Phil **407 Environmental Ethics** (3 cr). Survey of philosophical issues and methodological assumptions employed in developing field of environmental ethics.

Phil **ID410 Philosophy of Law** (3 cr). WSU Phil 470. Analysis of fundamental philosophical issues in law and legal systems, including the nature of law, relation of law to morality, judicial method, and nature and ascription of rights.

Phil **ID&WS411 Social and Political Philosophy** (3 cr). WSU Phil 445. Examination of basic issues of social justice and political organization, including theory of the state, liberty, equality, justification of rights, justice theory, and distributive justice.

Phil **ID&WS412 Philosophy of Science** (3 cr). WSU Phil 350. Philosophical examination of the methods and presuppositions of empirical science.

Phil **ID&WS414 Ethical Theory** (3 cr). WSU Phil 460. Critical analysis of classical consequentialist and deontic views as well as one or more recent theories such as emotivism and prescriptivism, feminist ethics, communitarianism, or virtue ethics. Prereq: Phil 103.

Phil **415 Phenomenology** (3 cr). Survey of philosophy of Husserl, Heidegger, Merleau-Ponty, Sartre, and others in the phenomenological tradition.

Phil **416 Twentieth Century Analytic Philosophy** (3 cr). Examination of the thought of major figures in 20th century analytic philosophy, such as Moore, Russell, Frege, Wittgenstein, and Quine; evaluation of major movements such as logical positivism and "ordinary language" philosophy.

Phil **ID418 Philosophy of Biology** (3 cr). WSU Phil 418. Classical and current conceptual issues in the foundations and aims of biology, and the role of values and social concerns as they affect and interact with biological science, research, and technology. Recommended prereq: one college course in biological science.

Phil **WS420 Contemporary Continental Philosophy** (3 cr). WSU Phil 420.

Phil **422 Philosophical Ideas in Literature** (3 cr). Study of metaphysical, epistemological, and moral precepts of selected authors of imaginative literature.

Phil **425 American Philosophy** (3 cr). Focuses on development of pragmatism in the writings of Pierce, James, and Dewey and on selected other figures in American philosophy, e.g., Edwards, Santayana, Whitehead, and Quine.

Phil **ID&WS431 Theory of Knowledge** (3 cr). WSU Phil 335. Analysis of the nature of knowledge; survey of various philosophical positions on the sources and extent of what we know.

Phil **ID&WS442 Philosophy of Mind** (3 cr). WSU Phil 450. Survey of current philosophical theories of the nature of minds and mental states, including forms of dualism, reductive physicalism, functionalism, and eliminative materialism.

Phil **443 Philosophy of Language** (3 cr). Philosophical thinking about meaning, reference, and truth.

Phil **450 Ethics and Reasoning in Scientific Research and Practice** (3 cr). Principles of reasoning in experimental design and research, understanding and evaluating theoretical, statistical, and causal hypotheses; evaluating decisions based on scientific research; the role of values in scientific research; ethical issues involving fraud and deception, human experimentation, animal research, genetic engineering, biotechnology, and/or other areas. Prereq: Phil 103 or 202 or 210 or 211, or perm.

Phil **461 Philosophy of War and Peace** (3 cr). Philosophical analysis of violent and nonviolent methods of political conflict resolution; may include just war theory, limited war theory, terrorism, institutionalized procedures for resolving political conflict, and pacifism.

Phil **490 Senior Seminar** (3 cr). Required of all philosophy majors; capstone course devoted to mastery of the philosophical essay; topics will vary. Prereq: senior standing or completion of 24 credits in philosophy.

Phil **499** (s) **Directed Study** (cr arr). Prereq: perm.

Physical Education

Calvin W. Lathen, Director, Div. of Health, Physical Education, Recreation and Dance (101 Phys. Ed. Bldg. 83844-2401; phone 208/885-7921).

ACTIVITY COURSES

Note: PE 105, 106, 107, and 108 may be repeated for cr if the student engages in a different activity or level of the same activity. Practical tests may be given at the beginning of the semester to determine the student's level of ability.

PE **105** (s) **Dance** (1 cr, max arr). See Dan 105.

PE **106** (s) **Individual and Dual Sports** (1 cr, max arr). Bowling, racket sports, fencing, golf, gymnastics, conditioning, backpacking, cycling, cross-country skiing, etc. Two days of field trips may be a part of the course requirements for such activities as backpacking, cycling, etc. Two hrs a wk. Graded P/F.

PE **107** (s) **Team Sports** (1 cr, max arr). Field sports, volleyball, basketball, and softball. Two hrs a wk. Graded P/F.

PE **108** (s) **Swimming** (1 cr, max arr). All levels of proficiency, including WSI, lifeguarding, diving, and scuba. Two hrs a wk. Graded P/F.

PROFESSIONAL COURSES

PE **100 Introduction to Sport Sciences** (1 cr). Introduction to career opportunities within the field of sport science; topics on professional development, advising issues, and guest lectures from professionals practicing in related fields.

PE **112 Skill and Analysis: Archery and Bowling** (1 cr). Skill development and knowledge of teaching progressions, techniques, and analysis of skills and common errors in archery and bowling. Two lec-labs a wk.

PE **113 Skill and Analysis: Badminton/Racquet Sports** (1 cr). Skill development and knowledge of teaching progressions, techniques, and analysis of skills and common errors in badminton; units on other racquet sports. Two lec-labs a wk.

PE **114 Skill and Analysis: Basketball** (1 cr). Skill development and knowledge of teaching progressions, techniques, and analysis of offensive and defensive skills and strategy in basketball. Two lec-labs a wk.

PE **115 Skill and Analysis: Golf** (1 cr). Skill development and knowledge of teaching progressions, techniques, and analysis of correction of the golf stroke and game. Two lec-labs a wk.

PE **116 Skill and Analysis: Soccer and Speedball** (1 cr). Skill development and knowledge of teaching progressions, techniques, and analysis of offensive and defensive skills and strategy in soccer and speedball. Two lec-labs a wk.

PE **117 Skill and Analysis: Tennis** (1 cr). Skill development and knowledge of teaching progressions, techniques, and analysis of skills and common errors in tennis. Two lec-labs a wk.

PE **118 Skill and Analysis: Track and Field** (1 cr). Skill development and knowledge of teaching progressions, techniques, analysis, and correction of skills in track and field. Two lec-labs a wk.

PE **119 Skill and Analysis: Volleyball** (1 cr). Skill development and knowledge of teaching progressions, techniques, and analysis of skills and strategy in volleyball. Two lec-labs a wk.

PE **122 Skill and Analysis: Softball** (1 cr). Skill development and knowledge of teaching progressions, techniques, and common errors in softball. Two lec-labs a wk.

PE **123 Survey of Field Sports** (1 cr). Intro to variety of field sports and activities found in various school curricula. Two lec-labs a wk.

PE **124 Survey of Outdoor Pursuits** (1 cr). Intro to fundamentals of outdoor activities, including how to incorporate them into a school curriculum. Two lec-labs a wk.

PE **160 Foundations of Physical Education and Education** (3 cr). Education and physical education, sport, and fitness aims, objectives, overview of principles, historical development, including current trends and issues.

PE **200** (s) **Seminar** (cr arr). Prereq: perm.

PE **201 Fitness Activities and Concepts** (2 cr). Topics related to individual fitness development; focus on development of personal skills in presenting and teaching fitness activities for public and private sector programs. Two lec and 1 hr of lab a wk.

PE **202 Skill and Analysis: Stunts and Tumbling** (1 cr). Skill analysis, skill development, spotting, and teaching techniques in tumbling. Two lec-labs a wk.

PE **203** (s) **Workshop** (cr arr). Prereq: perm.

PE **204** (s) **Special Topics** (cr arr). Prereq: perm.

PE **220 Coaching Youth Sports** (1 cr). Practical, hands-on introduction to basics of youth sports coaching; basics of developing appropriate coaching philosophy; how such sports sciences as sport psychology, sport pedagogy, sport physiology, sport medicine, sport law, and sport management help to effectively implement athlete-centered approach to coaching; students participate in six-week practicum and receive feedback on how to improve their coaching. Two lec a wk.

PE **243 Recreation Activities** (2 cr). See Rec 243.

PE **244 Lifeguarding** (2 cr). Trains individuals to lifeguard at swimming pools and nonsurf, open water beaches; Standard First Aid and CPR Certification reqd to receive Red Cross Lifeguarding Certification. One field trip. Prereq: intermediate swimming or perm.

PE **250 Elementary Physical and Health Education** (3 cr). Content, methods, and materials in elementary school physical education and health for classroom teachers. Four hrs of lec-lab a wk.

PE **260 Motor Development and Control** (3 cr). Overview of structural and environmental influences on development of motor behavior and control throughout the lifespan. Four hrs of lec-lab a wk. Prereq or coreq: Zool 120.

PE **WS261 Human Anatomy** (3 cr). WSU PEP 262.

PE **266 Aquatic Instructor's Course** (2 cr). Methods. Students passing Red Cross standards will receive instructor's certificate. Prereq: certificate in lifeguarding or emergency water safety and pass swimming skills pre-test.

PE **J275/J475 Moral Reasoning in Sport** (2 cr). Current ethical issues in sport, such as performance-enhancing drugs, mechanization, cheating, eligibility; challenges students to creatively examine their beliefs. Additional projects/assignments reqd for cr in PE 475.

PE **WS290 Sport Program** (3 cr). WSU SpMgt 290.

PE **299** (s) **Directed Study** (cr arr). Prereq: perm.

PE **300 Human Kinesiology** (2 cr). Anatomical and mech analysis of human movement in sport and exercise. Three hrs of lec-lab a wk. Prereq: Zool 120.

PE **305 Applied Sports Psychology** (3 cr). Overview of key psychological issues in physical education and sport including competition, personality, anxiety, motivation, self-confidence, imagery, and stress management; practical applications of psychological concepts of youth sports and development of key psychological skills for competition.

PE **310 Cultural and Philosophical Aspects of Sport** (2 cr). Analysis of philosophical and sociological phenomenon in sport.

PE **320 Methods and Materials in Physical Education** (3 cr). Study and application of teaching methods and teaching behavior; structuring learning outcomes through performance objectives; lesson and unit planning. Prereq: PE 340, 260; coreq: PE 321.

PE **321 Physical Education Teaching Lab** (1 cr). Application of teaching styles and analysis of teaching behavior. As part of the 321 lab, there is a 16-hour practicum spread over an eight-week period that is required in the schools.

PE **340 Elementary School Physical Education** (3 cr) (C) (PE 240). Current theory in curriculum and teaching methods with practical applications in lab and field experience. Four hrs of lec-lab a wk. Sixteen hours over an eight-week period will be required in the schools. Prereq: PE 260 or perm.

PE **380 Measurement and Evaluation I** (2 cr). Construction, evaluation, and interpretation of tests used in evaluating physical and cognitive performance in physical education and sport science settings; basic statistical analysis. Accelerated class; three hrs of lec-lab a wk.

PE **381 Measurement and Evaluation II** (1 cr). Grading systems and techniques used in teaching physical education; construction, evaluation, and interpretation of written tests used in evaluating cognitive performance in physical education. Accelerated course; three hrs of lec-lab a wk. Coreq: PE 380.

PE **400** (s) **Seminar** (cr arr). Prereq: perm.

PE **403** (s) **Workshop** (cr arr). Prereq: perm.

PE **404** (s) **Special Topics** (cr arr). Prereq: perm.

PE **J405/J505** (s) **Professional Development** (cr arr). Cr earned may not be applied toward grad degree programs but may be accepted for fifth-yr certification. Professional development in physical education and sport professional personnel. Additional projects/assignments reqd for grad cr.

PE **412 Proseminar in Physical Education** (1 cr). Content and materials for entering student teaching, the teaching profession, and for continuing professional development. Graded P/F.

PE **418 Physiology of Exercise** (3 cr). Effects of physical activity on the circulatory, respiratory, and other systems. Two lec and one 2-hr lab a wk. Prereq: Zool 120 and 121.

PE **424 Physical Education for Special Populations** (3 cr). Adapting physical education programs to meet individual needs. Lec and lab. Prereq: Basic Water Safety or Emergency Water Safety and ED 314.

PE **431 Practicum: Elementary and Secondary Student Teaching** (7 or 14 cr). Cr earned in this course may not be applied to total cr needed for a PE teaching major. Supervised student teaching at elementary and secondary levels. Double majors select the 7-cr option; all other students select 14 cr divided between elementary and secondary level. Graded P/F. Prereq: admission to teacher education, PE 320, 321, 340, ED 312, 314, cumulative GPA of 2.5, and perm of dept. (Submit application to director of clinical experiences in the College of Education by December 1 of school year before enrolling.)

PE **440 Physical Education and Sport Management** (3 cr). Curriculum, programming, organization, and administration of school physical education and intramurals; field experience. Prereq: PE 320 or perm.

PE **460 Competition and Social Values** (3 cr). Competition as it is presently perceived in America today; what it should be and could be in the ethical domain.

PE **J467/J567 Therapeutic Recreation for People with Developmental Disabilities** (3 cr). See Rec J467/J567.

PE **470 Sport and Athletic Business Ethics** (3 cr). Study of ethics, values, and capitalism as it focuses on global question of sport and athletics in America.

PE **475 Moral Reasoning in Sport** (2 cr). See PE J275/J475.

PE **WS-J477/WS-J577 School Law and Athletics** (3 cr). WSU PEP 477/577.

PE **480 Seminar in Sportsmanship: Moral Development** (3 cr). Philosophic and psychological study of moral development and resultant effect on moral value education in sport.

PE **J493/ID-J593 Fitness Assessment and Prescription** (3 cr). WSU PEP 568. Development of skills in exercise testing, data interpretation, and prescription for health related fitness. Cr earned in PE 593 by completion of additional projects/assignments. Two lec and 2 hrs of lab a wk. Prereq: PE 418 or perm.

PE **495** (s) **Practicum in Tutoring** (1 cr, max arr). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

PE **497 Athletic Program Management** (3 cr). Scheduling, facilities, equipment, maintenance, budgeting, and public relations in the school.

PE **498** (s) **Internship in Physical Education** (9 cr). Supervised field work. Graded P/F. Prereq: jr standing and Rec 445.

PE **499** (s) **Directed Study** (cr arr). Prereq: perm.

PE **500 Master's Research and Thesis** (cr arr).

PE **501** (s) **Seminar** (cr arr). Prereq: perm.

PE **502** (s) **Directed Study** (cr arr). Prereq: perm.

PE **503** (s) **Workshop** (cr arr). Prereq: perm.

PE **504** (s) **Special Topics** (cr arr). Prereq: perm.

PE **505 Professional Development** (cr arr). See PE J405/J505.

PE **506 Foundations of Motor Skills** (3 cr). Application of psychological, kinesiological, and mechanical principles for an understanding of motor activity.

PE **508 Motor Development** (3 cr). Study of changes in human movement associated with aging with emphasis on changes in children from 4 to 18 years of age. Two lec and 2 hrs of lab a wk.

PE **WS511 Theories, Research, and Techniques in Counseling Psychology I** (3 cr). WSU CoPsy 511.

PE **WS512 Theories, Research, and Techniques in Counseling Psychology II** (4 cr). WSU CoPsy 512.

PE **WS515 Ethics and Professional Problems in Counseling Psychology** (3 cr). WSU CoPsy 515.

PE **518 Advanced Physiology of Exercise** (3 cr). Principles and methods essential to the experimental approach to physiological performance problems. Two lec and one lab a wk.

PE **520 History of Physical Education and Sport** (3 cr). Cultural, philosophical, and comparative study of physical education and sport throughout civilization; emphasis on background influences on U.S. program.

PE **522 Pedagogy Applied to Physical Education** (3 cr). Study and analysis of teaching strategies and behaviors as they affect teaching and learning in physical education.

PE **ID544 Program Development** (3 cr). WSU PEP 585. Developing physical education and sport program; emphasis on new methods and curriculum content. Two days of field trips may be reqd.

PE **550 Sport in Society** (3 cr). Sociological aspects of sport with emphasis on cultural impact of sport on society and vice versa; economics and politics of sports as they apply in American society.

PE **560 Sport Psychology** (3 cr). Provides an understanding of how psychological factors influence performance and how simple and easy-to-use mental training techniques may be employed to enhance performance and enjoyment; using the *Coaches' Guide to Sport Psychology* and accompanying workbook, teachers/coaches will address such important psychological topics as peak performance, motivation, communication, leadership, self-confidence, concentration, stress management, imagery, goal setting, arousal control, and mental plans/performance routines; workbook exercises, case studies, and hands-on projects will teach mental training principles and help practitioners develop skills that they can successfully use to enhance performance with their students/athletes.

PE **561 Motivation in Sport and Recreation** (3 cr). Practical, hands-on course designed to teach basics of motivation to physical educators, coaches, and recreation professionals; major achievement motivation theories and primary antecedents and consequences of motivated behavior; five major motivational enhancement strategies including goal setting, personal science, competition, feedback, and reinforcement; guidelines for maximizing effectiveness; analysis of applied motivation questions such as dropouts/burnouts, peak performance, exercise adherence, injury rehabilitation, increasing enjoyment, designing reward systems, and positive parental involvement.

PE **WS564 Mechanical Analysis of Motor Activity** (3 cr). WSU Kin 564.

PE **WS566 Biomechanics** (3 cr). WSU PEP 566.

PE **567 Therapeutic Recreation for People with Developmental Disabilities** (3 cr). See Rec J467/J567.

PE **570 Ethics in Physical Education and Sport** (3 cr). Problem solving approach to current ethical problems in leisure, physical education, and sport.

PE **WS577 School Law and Athletics** (3 cr). See PE J477/J577.

PE **581 Research in Physical Activity, Theory, and Design** (1-6 cr, max 6). Principles of scientific inquiry; application to the study of physical activity; individual research projects.

PE **583 Qualitative Research Methods** (3 cr). Qualitative research methods including the way data are collected, methods for assuring quality of data, techniques for organizing results, conclusions and interpretations. Two lec and 2 hrs of lab a wk.

PE **WS584 Teaching Strategies** (3 cr). WSU PEP 583.

PE **591 Philosophical Influences in Sport** (3 cr). Use of the philosophical process in analyzing problems and issues in leisure and sport.

PE **WS592 Motor Learning** (3 cr). WSU PEP 591.

PE **ID593 Fitness Assessment and Prescription** (3 cr). See PE J493/J593.

PE **597** (s) **Practicum** (cr arr). Application of theories and techniques. Graded P/F. Prereq: perm.

PE **598** (s) **Internship** (cr arr). Supervised field experience in an appropriate public or private agency. Graded P/F. Prereq: perm.

PE **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

PE **600 Doctoral Research and Dissertation** (cr arr).

Physics

Henry Willmes, Chair, Dept. of Physics (311A Engineering/Physics Bldg. 83844-0903; phone 208/885-6380; e-mail henryw@uidaho.edu).

CREDIT LIMITATIONS: Phys 100 carries no credit after 111 or 211; Phys 111 carries no credit after 211; 112 carries no credit after 212.

Phys **100 Fundamentals of Physics** (4 cr) (Phys 101). For students in nontechnical fields. Satisfies core requirement J-3-b. Conceptual study of laws of nature and their application, including mechanics, heat, electricity and magnetism, light, and modern physics. Three lec and one 2-hr lab a wk.

Phys **103 General Astronomy** (3 cr). Nonmathematical descriptive and physical astronomy; development of astronomical thought; properties and evolution of the solar system, stars, galaxies, and the universe.

Phys **104 Astronomy Lab** (1 cr). Naked eye, telescopic, and photographic observations of constellations, stars, and planets. One 2-hr lab a wk; some evening meetings. Prereq or coreq: Phys 103.

Phys **111 General Physics I** (4 cr) (C). Satisfies core requirement J-3-b. Mechanics, sound, and heat. Three lec, one recitation, and one 2-hr lab a wk. Prereq: Math 143.

Phys **112 General Physics II** (4 cr). Electricity, magnetism, light, and modern physics. Three lec, one recitation, and one 2-hr lab a wk. Prereq: Phys 111.

Phys **211 Engineering Physics I** (4 cr) (Phys 230, 231). Satisfies core requirements J-3-b. Kinematics and dynamics, Newton's laws, work and energy, rotational dynamics, linear and angular momentum, collisions, static equilibrium, oscillations, gravity and central forces. Three lec, one recitation, and one 2-hr lab a wk. Prereq or coreq: Math 170.

Phys **212 Engineering Physics II** (4 cr) (Phys 232, 233). Satisfies core requirement J-3-b. Electric fields and potentials, magnetic fields, capacitance and inductance, DC and AC circuits, electromagnetic waves. Three lec, one recitation, and one 2-hr lab a wk. Prereq: Phys 211; prereq or coreq: Math 175.

Phys **213 Engineering Physics III** (4 cr) (Phys 234, 235). Fluid dynamics, waves in elastic media, sound waves, temperature, heat and thermodynamics, kinetic theory, geometric and physical optics. Three lec, one recitation, and one 2-hr lab a wk. Prereq: Phys 211; prereq or coreq: Math 175.

Phys **301 Junior Physics Lab** (1 cr). Experimental techniques in modern physics, including optics, atomic, nuclear, and solid state physics; computer uses, error analysis, literature searches. One 3-hr lab a wk. Prereq: Phys 213 or perm.

Phys **310 Introduction to Relativity** (2 cr). Experimental basis for Einstein's Principles of Relativity; simultaneity, ultimate speed, lack of rigidity, time dilation, length contraction, velocity addition; paradoxes; relativistic energy and momentum, forces, qualitative connection between electric and magnetic fields; equivalence principle. Prereq: Phys 212, Math 175; recommended coreq: Phys 213.

Phys **315 Introduction to Modern Physics** (3 cr). Qualitative and quantitative description of fundamentals of quantum theory and of atomic, nuclear, elementary particle, and solid state physics. Prereq: Phys 212, 213; coreq; Math 275.

Phys **321-322 Analytical Mechanics** (3 cr). Statics; kinematics and dynamics of a particle; systems of particles; rigid continuous media; intro to Lagrange's equations. Prereq: Phys 112 or 212 or 213, and Math 275.

Phys **341-342 Electromagnetic Fields I-II** (3 cr). Theory using vector calculus; electrostatics; magnetostatics, electromagnetism, analysis of AC and DC circuits; Maxwell's equations; radiation and propagation of electromagnetic waves. Prereq: Phys 112 or 212 or 213, and Math 275.

Phys **351 Elementary Quantum Mechanics** (3 cr). Methods; one-dimensional harmonic oscillator, free particle, rectangular potential barrier, hydrogen atom, and perturbation theory. Prereq: Phys 315; coreq: Phys 321.

Phys **ID371 Mathematical Physics** (3 cr). WSU Phys 371. Same as Math 371. Mathematical techniques needed in upper-division physics courses, including vector analysis, matrices, Sturm-Liouville problems, special functions, partial differential equations, complex variables. Prereq: Phys 212, Math 275.

Phys **400** (s) **Seminar** (cr arr). Prereq: perm.

Phys **401 Senior Physics Lab** (1 cr). Advanced experimental techniques in modern physics, including optics, atomic, nuclear, and solid state physics; computer uses, error analysis; literature searches. One 3-hr lab a wk. Prereq: Phys 301 or perm.

Phys **403** (s) **Workshop** (cr arr). Prereq: perm.

Phys **404** (s) **Special Topics** (cr arr). Prereq: perm.

Phys **411-412 Physical Instrumentation I-II** (3 cr). Methods and instruments used in experimental physics; electronic techniques; design problems in electronic measurement of physical quantities encountered in research. Two lec and one 3-hr lab a wk. Prereq: Phys 212 or 213 and Math 275 for Phys 411; Phys 411 for 412.

Phys **431 Thermodynamics and Kinetic Theory** (3 cr). Laws of thermodynamics, kinetic theory, and their application to topics in physics. Coreq: Phys 315.

Phys **443 Optics** (3 cr). Geometrical optics and photometry, interference, diffraction, double refraction, and polarization; application to modern optical instruments. Prereq: Phys 212 or 213, Math 175, and sr standing or perm.

Phys **444 Quantum Optics** (3 cr). Theory and application of lasers, optical spectrum analyzers, electro-optic modulators, and detectors; modern optical concepts and techniques; Gaussian beams and optical resonators, interaction of radiation and quantized matter, nonlinear optical effects, and laser spectroscopy. Prereq: Phys 212 or 213, Math 175, and sr standing or perm.

Phys **ID&WS463 Introduction to Solid State** (3 cr). WSU Phys 463. Physics of bulk matter; structure and types of solids, elastic and thermal properties of solids, electric and magnetic properties of solids, theory of conduction in metals and semiconductors. Prereq: Phys 315, 321.

Phys **ID&WS465 Nuclear and Particle Physics** (3 cr). WSU Phys 465. Structure of elementary particles, quark models; nuclear liquid drop, Fermi gas, shell and collective models; symmetries and cons laws; E and M, weak and strong interactions; accelerators and detectors. Prereq: Phys 315.

Phys **ID&WS485 Astrophysics** (3 cr). WSU Astr 435. Structure and evolution of stars and star systems; celestial mechanics; special and general relativity; cosmology. Prereq: Phys 103, 315, Math 275, or perm.

Phys **490 Research** (1-6 cr, max 6). Undergrad thesis. Prereq: jr standing in physics and perm of dept.

Phys **497** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Phys **499** (s) **Directed Study** (cr arr). Prereq: perm.

Phys **500 Master's Research and Thesis** (cr arr).

Phys **501** (s) **Seminar** (cr arr). Graded P/F. Prereq: perm.

Phys **502** (s) **Directed Study** (cr arr). Prereq: perm.

Phys **503** (s) **Workshop** (cr arr). Prereq: perm.

Phys **504** (s) **Special Topics** (cr arr). Prereq: perm.

Phys **511-512 Techniques of Experimental Physics** (3 cr). Development of experimental techniques and skills in active research fields; foundation for any field of physics. Nine hrs of lab a wk.

Phys **ID&WS521 Advanced Mechanics** (3 cr). WSU Phys 521. Classical mechanics; Lagrange's and Hamilton's principles, two-body problem, rigid body motion, special relativity, canonical transformation, Hamilton-Jacobi theory, small oscillations, and Lagrangian and Hamiltonian formulations for continuous systems and fields. Prereq: Phys 322.

Phys **ID&WS531 Statistical Mechanics** (3 cr). WSU Phys 534. Classical statistical mechanics of Maxwell, Boltzmann, and Gibbs; Maxwell-Boltzmann distribution law; Boltzmann's H-theorem, quantum statistical mechanics; Bose-Einstein and Fermi-Dirac statistics; application to problems in thermodynamics. Prereq: Phys 431, 551, or perm.

Phys **ID&WS541-ID&WS542 Electromagnetic Theory** (3 cr). WSU Phys 541-542. Includes Maxwell's equations, electrostatics, magnetostatics, currents and their interactions, general theory of emission, propagation and absorption of electromagnetic waves, boundary value problems, relativistic formulation of electrodynamics. Prereq: Phys 322, 342.

Phys **ID&WS551-ID&WS552; ID&WS553 Quantum Mechanics** (3 cr). WSU Phys 550, 551, 552. Phys 551-552: physical basis; Schroedinger wave formulation, Heisenberg matrix formulation, transformation theory, approximation methods, radiation theory, theory of scattering; application to atomic systems. Phys 553: relativistic quantum mechanics, second quantization field theory and application. Prereq: Phys 315, 322 for 551-552; 552 for 553.

Phys **554 Quantum Field Theory** (3 cr). Intro to formalism and applications of relativistic quantum field theory. Prereq: Phys 553 and perm.

Phys **555 Quantum Many-body Theory** (3 cr). Many-body techniques in nuclear and condensed matter physics. Prereq: Phys 551, 552 and perm.

Phys **ID&WS561 Atomic Spectra and Atomic Structure** (3 cr). WSU Phys 561. Experimental methods for the production and investigation of spectra, interpretation of special series, stationary states, spinning electrons and fine-line structure, and vector models; Zeeman and Stark effects; intensity of spectral lines. Prereq: Phys 351 or 551.

Phys **ID&WS563 Solid State Physics** (3 cr). WSU Phys 563. Modern theory of metals, semiconductors, and insulators; crystal structure, thermal, electric, and magnetic properties of solids, band theory of solids, crystal imperfections, semiconductors, superconductivity, and photoconductivity. Prereq: Phys 342; prereq or coreq: Phys 551.

Phys **ID&WS566 Nuclear Physics** (3 cr). WSU Phys 565. Nuclei and nuclear interactions from a theoretical and experimental viewpoint, properties of nuclei, two-body problems, complex nuclei, nuclear spectroscopy, nuclear reactions, interaction of nuclei with radiation, nuclear models, theory of nuclear forces; topics in high energy physics; nucleus-nucleus collisions. Prereq: Phys 465, and 351 or 551.

Phys **ID&WS571-572 Mathematical Methods of Physics** (3 cr). WSU Phys 571. Methods and problems. Prereq: Phys 322 or perm.

Phys **ID573 Group Theory and Its Applications in Physics** (3 cr). WSU Phys 573. Intro to group theory with application to atoms, molecules, solids, elementary particles and nuclei. Prereq: Phys 551 or perm.

Phys **R585-R586 Fundamental Reactor Kinetics** (3 cr). Complex plane transformations, transfer functions for various systems, derivation of reactor kinetics equations; analysis of nuclear feedback systems; statistical control theory applied to nuclear systems. Prereq: perm.

Phys **R587 Reactor Physics for Engineers** (3 cr). Review of nuclear physics, nuclear fission, chain reaction, and reactor theory. Prereq: Math 310 or equivalent.

Phys **600 Doctoral Research and Dissertation** (cr arr).

Physiology

Faculty: Danny L. Barney, Richard C. Bull, James E. Butler, Joseph G. Cloud, Donald L. Crawford, Mark DeSantis, Dennis G. Dolny, Robert B. Dwelle, Charlotte Eberlein, Victor P. Eroschenko, Esmaeil Fallahi, Jeffrey D. Griffin, Thomas C. Griggs, Stephen K. Herbert, Carl W. Hunt, Rolf L. Ingermann, Gale E. Kleinkopf, Marc J. Klowden, Michael B. Laskowski, Robert L. Mahler, Thomas B. McFadden, Thomas A. McKean, Rodney A. Mead, Glen A. Murray, Richard A. Roeder, R. Francis Rosenzweig, Arthur W. Rourke, R. Garth Sasser, Gerald T. Schelling, Kiran K. Shetty, Elizabeth South, Jeffrey C. Stark, Anne W. Sylvester, Donald C. Thill, Michael K. Thornton, Anthony Trent, Robert R. Tripepi, Dale O. Wilson, Jr., Gordon L. Woods.

Teaching and research programs in physiology are available in several colleges and departments of the university. Master's and doctoral programs with concentration in animal or plant physiology are available through the Departments of Animal and Veterinary Sciences, Biological Sciences, and Plant, Soil, and Entomological Sciences.

The following courses are available for those students interested in animal and plant physiology and related areas. Full course descriptions are found under the designated departmental/program sections.

ANIMAL PHYSIOLOGY

AVS **218 Artificial Insemination and Pregnancy Detection** (2 cr).

AVS **371 Anatomy and Physiology** (4 cr).

AVS **J411/J511 Microbiology and Physiology of Ruminant Nutrition** (3 cr).

AVS **ID&WS413 Physiology of Lactation** (3 cr).

AVS **J430/J530 Advanced Topics in Embryo Physiology** (3 cr).

AVS **J451/J551 Endocrine Physiology** (3 cr).

AVS **452 Physiology of Reproduction** (4 cr).

AVS **514 Physiology of Nonruminant Nutrition** (3 cr).

AVS **ID&WS520 Seminar in Animal Physiology** (1 cr, max arr).

AVS **WS526 Advanced Reproduction** (4 cr).

AVS **552 Advanced Endocrine Physiology** (3 cr).

AVS **ID&WS560 Domestic Animal Growth and Development** (3 cr).

Ent **J484/J584 Insect Anatomy and Physiology** (4 cr).

MedS **ID&WS512 Basic Mechanisms in Cellular Physiology** (4 cr).

MedS **ID&WS532 Nervous System** (5 cr).

MMBB **460 Microbial Physiology** (5 cr).

MMBB **560 Advanced Microbial Physiology** (3 cr).

PE **418 Physiology of Exercise** (3 cr).

PE **J493/J593 Fitness Assessment and Prescription** (3 cr).

PE **518 Advanced Physiology of Exercise** (3 cr).

PISc **432 Tree Physiology** (3 cr).

Psyc **372 Physiological Psychology** (3 cr).

VS **WS518 Veterinary Physiology** (5 cr).

Zool **121 Human Physiology** (4 cr).

Zool **324 Comparative Vertebrate Anatomy** (4 cr).

Zool **ID-J411/ID-J511 Comparative Vertebrate Reproduction** (3 cr).

Zool **J414/J514 Cell Physiology** (3 cr).

Zool **415 Cell Physiology Lab** (2 cr).

Zool **J417/J517 Endocrine Physiology** (3 cr).

Zool **J423/J523 Comparative Vertebrate Physiology** (4 cr).

Zool **427 Vertebrate Histology and Organology** (4 cr).

Zool **J472/J572 Developmental Biology** (3 cr).

Zool **473 Comparative Embryology Lab** (1 cr).

Zool **WS505 Generation, Degeneration, and Regeneration in Nervous System** (2 cr).

PLANT PHYSIOLOGY

Bot **311 Plant Physiology** (4 cr).

Bot **J401/J510 Techniques of Plant Tissue Culture** (2 cr).

Bot **J413/J515 Mineral Nutrition** (3 cr).

Bot **512 Plant Growth Substances** (3 cr).

MMBB **486 Plant Biochemistry** (3 cr).

PISc **401 Crop Physiology** (3 cr).

PISc **ID-J410/ID-J510 Biology of Weeds** (3 cr).

PISc **WS418 Post-Harvest Biology and Technology** (3 cr).

PISc **461 Tree Fruit Production Techniques** (3 cr).

PISc **WS535 Molecular Genetics of Plant and Pathogen Interactions** (2 cr).

PISc **ID&WS539 Herbicide Fate and Mode of Action** (4 cr).

PISc **ID569 Applied Seed Physiology** (2 cr).

Soil **446 Soil Fertility** (1-3 cr, max 3).

Soil **WS541 Soil-Plant Relationships in Mineral Nutrition** (3 cr).

Plant Science

Lawrence E. O'Keeffe, Head, Dept. of Plant, Soil, and Entomological Sciences (242 Iddings Wing, Ag. Sc. Bldg 83844-2339; phone 208/885-6274).

PISc **102 The Science of Plants in Agriculture** (3 cr). Principles of structure, biology, and management of agronomic and horticultural crops; interaction of crop plants and cropping systems with environment; current issues related to crop science. Two lec and one 2-hr lab a wk.

PISc **202 Plant Propagation** (3 cr). Alt/yrs. Sexual and asexual propagation techniques of herbaceous and woody ornamental plants; propagation methods covered including seed, cuttings, layering, grafting, and cloning/tissue culture. Two lec and one 3-hr lab a wk. Prereq: PISc 102 or Biol 201, or perm.

PISc **WS234 Controlled Environments for Horticultural Production** (3 cr). WSU Hort 234.

PISc **WS301 Turfgrass Culture** (3 cr). WSU CropS 301.

PISc **308 Forage and Grassland Management** (3 cr). Principles of biology, management, and use of cultivated hay and pasture plants; plant-animal-environment interactions in forage-livestock systems; design of sustainable grassland production systems. Two lec and one 2-hr lab a wk. Prereq: PISc 102 or equivalent, or perm.

PISc **WS320 Olericulture—Commercial Vegetable Crops** (3 cr). WSU Hort 320.

PISc **WS321 Olericulture Lab—Commercial Vegetable Crops** (1 cr). WSU Hort 321.

PISc **338 Weed Control** (3 cr). Nature and scope of weed problems, identification and biology of weeds, principles, theory, and practice of mechanical, chemical, and biological control of weeds; legal considerations; integration of methods into functional management systems. Two lec and one 2-hr lab a wk. Prereq: PISc 102 or equivalent, or perm.

PISc **ID340 Nursery Management** (3 cr). WSU Hort 340. Alt/yrs. Management of commercial nurseries from plant propagation through sale of the plants. Two lec and one 2-hr lab a wk; one 1-day field trip.

PISc **WS360 World Agricultural Systems** (3 cr). WSU CropS 360. Study of agro-environmental characteristics of world agriculture; historical and contemporary features of world food production. Prereq: 2 semesters physical or biological sciences.

PISc **398 Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

PISc **399** (s) **Directed Study** (1-2 cr, max 2). Prereq: perm.

PISc **400** (s) **Seminar** (1 cr). Prereq: perm.

PISc **401 Crop Physiology** (3 cr). Alt/yrs. Application of physiology to crop management. Prereq: Bot 311.

PISc **404** (s) **Special Topics** (cr arr). Prereq: perm.

PISc **405 Plant Pathology** (4 cr). Biology of diseases and disorders of crop, forest, and ornamental plants, with emphasis on plant-microbe interactions and on disease cause, development, diagnosis, and control. Three 1-hr lec and one 2-hr lab a wk. Prereq: PISc 102 or Biol 203, and MMBB 250 (or perm).

PISc **407 Field Crop Production** (3 cr). Management and use of crops in Idaho and the Northwest.

PISc **409 Scientific Photography and Data Presentation** (1 cr). Alt/yrs. Principles and techniques for photographic documentation and presentation of data; seven technique areas: field photography, aquarium photography, museum photography, photocopy, microphotography, insect photography, and computer graphics. Prereq: Own or have access to a 35mm SLR camera.

PISc **ID-J410/ID-J510 Biology of Weeds** (3 cr). WSU CropS 413/513. Alt/yrs. Biology, ecology, and physiology of weeds with emphasis on crop and weed interactions. Requirements for grad cr include comprehensive term paper and class presentation on weed-crop interaction. Two lec and one 3-hr lab a wk. Prereq: Bot 311 or perm.

PISc **WS411 Seed Science and Technology** (3 cr). WSU CropS 410. Alt/yrs.

PISc **WS418 Post-Harvest Biology and Technology** (3 cr). WSU Hort 418.

PISc **WS-J420/WS-J570 Potato Physiology and Production Technology** (2 cr). WSU Hort 420/520. Alt/yrs.

PISc **WS421 General Mycology** (4 cr). WSU Pl P 421. Alt/yrs.

PISc **WS-J422/WS-J522 Genetic and Molecular Aspects of Plant Reproduction** (2-3 cr). WSU Hort 405/505.

PISc **WS430 Ornamental Plant Production I** (3 cr). WSU Hort 438.

PISc **WS431 Ornamental Plant Production II** (3 cr). WSU Hort 439.

PISc **432 Tree Physiology** (3 cr). See For 432.

PISc **J433/ID&WS-J533 Experimental Approaches to Plant Regeneration** (3 cr). WSU Hort/CropS 533. Alt/yrs. Laboratory-oriented course involving tissue culture techniques used to regenerate herbaceous and woody plant species from organs or tissues. Requirements for grad cr include completion of a special project and report. One lec and 5 hrs of lab a wk. Prereq: Bot 311 and PISc 202 or Bot J401/J510, or perm.

PISc **438 Pesticides in the Environment** (3 cr). See Soil 438.

PlSc **J446/ID-J546 Plant Breeding** (3 cr). WSU CropS 504. Alt/yrs. Application of genetic principles to improvement of crop plants. Grad students reqd to complete additional term paper. Prereq: Gene 314 or equiv.

PlSc **ID461 Tree Fruit Production Techniques** (3 cr). WSU Hort 310. Alt/yrs. Relationships between physiological processes in fruit trees and management decisions necessary for successful commercial production. One 2-day field trip.

PlSc **464 Landscape Maintenance** (3 cr). Alt/yrs. Use and culture of landscape plants to enhance man's environment. Two lec and one 2-hr lab a wk; one 1-day field trip. Prereq: PlSc 102 or Biol 203 or perm; prereq or coreq: Soil 205 and LArc 288, or perm.

PlSc **WS469 Seed Production** (3 cr). WSU CropS/Hort 469. Alt/yrs. Crops indigenous to the Northwest; seedhouse operations and seed regulation. Prereq: perm.

PlSc **480 Field Trip** (1 cr, max 2). Five-day field trip to production areas. Prereq: perm.

PlSc **ID-J490/J590 Potato Science** (3 cr). WSU Hort 470. Alt/yrs. History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Requirements for grad cr include comprehensive term paper and class presentation on selected topic.

PlSc **500 Master's Research and Thesis** (cr arr).

PlSc **501** (s) **Seminar** (cr arr). Prereq: perm.

PlSc **502** (s) **Directed Study** (cr arr). Prereq: perm.

PlSc **504** (s) **Special Topics** (cr arr). Prereq: perm.

PlSc **WS506 Diseases of Plants** (4 cr). WSU Pl P 501.

PlSc **WS507 Plant Transmission Genetics** (3 cr). WSU CropS 504.

PlSc **WS508 Advanced Crop Physiology I** (3 cr). WSU CropS 508. Alt/yrs.

PlSc **WS509 Advanced Crop Physiology II** (3 cr). WSU CropS 509. Alt/yrs.

PlSc **ID510 Biology of Weeds** (3 cr). See PlSc J410/J510.

PlSc **WS511 Viruses and Virus Diseases of Plants** (4 cr). WSU Pl P 511.

PlSc **WS514 Phytobacteriology** (4 cr). WSU Pl P 514.

PlSc **WS515 Molecular Approaches for Improving Crop Quality and Adaptation** (3 cr). WSU CropS 505. Alt/yrs.

PlSc **ID516 Advanced Plant Virology and Molecular Biology** (3 cr). WSU Pl P 516. Alt/yrs. Molecular biology of plant viruses including replication and translation mechanisms; formal and informal discussions, literature review, and lab demonstrations and experiments involving selected plant viruses.

PlSc **ID517 Plant Disease Epidemiology** (3 cr). WSU Pl P 517. Alt/yrs. Theory and practical implications of disease processes, incidence, and severity in plant populations; lec, discussions, outside reading, and hands-on exercises. Prereq: PlSc 405, upper-division or grad standing.

PlSc **ID520 Plant Cytogenetic Techniques** (3 cr). WSU CropS 520. Alt/yrs. Techniques to study plant genes and chromosomes. Two lec and 4 hrs of lab a wk. Prereq: Gene 314 or equivalent.

PlSc **WS522 Genetic and Molecular Aspects of Plant Reproduction** (2-3 cr). See PlSc WS-J422/WS-J522.

PlSc **WS527 Experimental Methods in Weed Science (2 cr).** WSU CropS 527. Alt/yrs.

PlSc **ID&WS533 Experimental Approaches to Plant Regeneration** (3 cr). See PlSc J433/J533.

PlSc **WS535 Molecular Genetics of Plant and Pathogen Interactions** (2 cr). WSU Pl P 535. Alt/yrs.

PlSc **539 Herbicide Fate and Mode of Action** (4 cr). Alt/yrs. Fate of herbicides in plants, soil, and water; physiological and biochemical mode of herbicide action; mechanisms of herbicide resistance. Prereq: PlSc 338, Bot 311, and MMBB 380 or perm.

PlSc **ID541 Analytical Methods for Phytopathological Research** (3 cr). WSU Pl P 541. Alt/yrs. Survey of various techniques used in current research in plant pathology; historical background, principles, and current applications. Two 1-hr lec and one 3-hr lab a wk. Prereq: PlSc 405, MMBB 250 or equiv, or perm.

PlSc **ID546 Plant Breeding** (3 cr). See PlSc J446/J546.

PlSc **547 Biometrics for Plant Scientists** (3 cr). Alt/yrs. Use of biometrical techniques in research with particular emphasis on designing, analyzing, and interpreting agricultural and biological experiments; application of statistical methods to biological experiments and problems that may be encountered when applying these techniques to biological systems. Prereq: PlSc 102 and Stat 401 or equiv.

PlSc **WS550 Advanced Cell Biology** (3 cr). WSU GenCB 550. Alt/yrs.

PlSc **WS557 Herbicides: Toxicology and Mode of Action** (1 cr). WSU CropS 557. Alt/yrs. Herbicides in terms of historical perspective, classification, synthesis, toxicity, mode of action, and metabolism. Prereq: organic chemistry, biochemistry, and insect physiology.

PlSc **WS558 Pesticide Topics** (1 cr). WSU Entom 558. Alt/yrs. Current issues concerning pesticides in terms of toxicity, mode of action, and metabolism. Prereq: organic chemistry, biochemistry, and plant, insect, or animal physiology.

PlSc **WS570 Potato Physiology and Production Technology** (2 cr). See PlSc J420/J570.

PlSc **WS571 Plant Molecular Genetics** (3 cr). WSU GenCB 570. Alt/yrs.

PlSc **590 Potato Science** (3 cr). See PlSc J490/J590.

PlSc **WS592** (s) **Advanced Topics in Cell Biology** (1-3 cr, max 7). WSU GenCB 592.

PlSc **597** (s) **Practicum** (cr arr). Prereq: perm.

PlSc **598** (s) **Internship** (cr arr). Prereq: perm.

PlSc **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

PlSc **600 Doctoral Research and Dissertation** (cr arr).

Political Science

Donald W. Crowley, Chair, Dept. of Political Science and Public Affairs Research (205 Admin. Bldg. 83844-3165; phone 208/885-6328).

PREREQUISITES: Two-semester courses in this field may be taken in either order. Students may enroll in second-semester courses without having had the first.

PolS **101 Introduction to Political Science and American Government** (3 cr) (C). Satisfies core requirement J-3-d. Introduction to the study of politics focusing on basic concepts, processes, and institutions; emphasis on government and politics of the U.S. examined in comparative perspective; probable topics include nature of constitutional democracy, ideology, parties and elections, and formation of public policy.

PolS **C102 U.S. Government: Policies and Issues** (3 cr). Survey of major policies and issues conflicts in the U.S.

PolS **C152 Politics and Pollution** (1 cr) (C). Political, government, and administrative aspects of overcoming air, water, and other types of pollution of our environment.

PolS **200** (s) **Seminar** (cr arr). Prereq: perm.

PolS **203** (s) **Workshop** (cr arr). Prereq: perm.

PolS **204** (s) **Special Topics** (cr arr). Prereq: perm.

PolS **205 Introduction to Comparative Politics** (3 cr). Basic structures, patterns, and sociocultural environment of foreign political systems; includes case studies of the government and politics in selected countries.

PolS **237 International Politics** (3 cr). Survey of the major approaches in the study of international politics: Realism, Idealism/Internationalism; special emphasis on games of international strategic interaction.

PolS **275 American State and Local Government** (3 cr) (C). Idaho state and local politics from a comparative perspective; focus on parties, interest groups, voting behavior, legislative and executive government, intergovernmental relations, and public policies.

PolS **299** (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

PolS **ID380 Canadian Political System** (3 cr). WSU Pol S 380. General exam of Canadian cultural identity, constitutional principles, federalism, govt structure, political process, and electoral behavior.

PolS **381 Politics of Western Europe** (3 cr). Comparison of political systems of Britain and selected European nations; evaluation of European Community; their relation to new governments of Eastern Europe.

PolS **382 Post-Communist Politics** (3 cr). Politics and foreign policies of former communist states; the break-up of the Soviet Union and formation of independent states including Commonwealth of Independent States (CIS) as well as the break-up of the Eastern Bloc and formation of new states including Yugoslavia and the secession of Slovenia and Croatia.

PolS **400** (s) **Seminar** (cr arr). Prereq: perm.

PolS **403** (s) **Workshop** (cr arr). Prereq: perm.

PolS **404** (s) **Special Topics** (cr arr). Prereq: perm.

PolS **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

PolS **WS-J412/WS-J512 Government of the U.S.S.R.** (3 cr). WSU Pol S 412/512.

PolS **J425/J525 History of Political Philosophy I** (3 cr). Perennial problems of politics examined through study of seminal authors of classical antiquity (Plato, Aristotle, Cicero); medieval confrontation of theology with classical political philosophy (Augustine, Aquinas, Marsilius). Additional projects/assignments reqd for grad cr.

PolS **J426/J526 History of Political Philosophy II** (3 cr). Foundations and development of modern liberalism; analysis of its characteristic goals, and democratic, socialist, and communitarian critics of the project; study of authors including Hobbes, Locke, Rousseau, Marx, and contemporary theorists such as Rawls. Additional projects/assignments reqd for grad cr.

PolS **J428/J528 American Political Thought** (3 cr). Major themes and debates in the American search for political self-understanding; topics include representative democracy, religion and politics, the frontier and its legacy, and individualism vs. communitarian claims; study of original sources—Founding Fathers, Thoreau, Lincoln, Populists—and contemporary implications. Additional projects/assignments reqd for grad cr.

PolS **J429/J529 Contemporary Political Ethics** (3 cr). Current controversies concerning status and substance of ethical claims about deception, violence, coercion, and economic justice in politics and public action. Additional projects/assignments reqd for grad cr.

PolS **430 Political Participant Internship** (1-9 cr, max 9). Directed student internship as a participant-observer in the political process, work during a campaign with a candidate, party, or interest group. Graded P/F. Prereq: perm.

PolS **431 American Political Parties and Elections** (3 cr). Development and present character of American political parties and of electoral system, functions of parties in periods of relative consensus and of critical choice regarding fundamental principles, party reform, and future prospects for party system.

PolS **432 American Congress** (3 cr). Theories of representation, recruitment of legislators, legislative organization and behavior, structure of power, relationship to the executive, lobbying, and role in the political system.

PolS **433 American Political Culture** (3 cr). Relation of public opinion and political action and affiliation to broad economic, social, religious, and intellectual developments.

PolS **435 Political Research Methods and Approaches** (3 cr). Development of research designs; methods of data collection; measurement of political phenomena; data analysis and the use of statistics; data processing techniques. Prereq: Stat 251.

PolS **J437/J537 American Presidency** (3 cr). Roles, power, and functions of the presidency; relationships with other structures and institutions in the U.S. political system. Additional projects/assignments reqd for grad cr.

PolS **438 Conduct of American Foreign Policy** (3 cr). Analysis of how key decision makers, such as the President and Congress, convert inputs from the international, national, and societal systems into foreign policy outputs.

PolS **J439/J539 Public Policy** (3 cr). Processes by which domestic policies are formulated and administered; analysis of intentional and unintentional impact of these policies on society. Additional projects/assignments reqd for grad cr.

PolS **J440/J540** (s) **International Organizations and International Law** (3 cr). Same as Mrtn 496. League of Nations, United Nations, and role of international law in international relations; the UN's contribution to international security and economic and social development. Additional projects/assignments reqd for grad cr.

PolS **WS-J445/WS-J545 Public Personnel Administration** (3 cr). WSU Pol S 445/545.

PolS **J449/J549 World Politics and War** (3 cr). A critical analysis of several competing theories that explain why wars occur; some focus on the attempts to control and eliminate warfare as a tool of international diplomacy. Additional projects/assignments reqd for grad cr. Cr not granted for both PolS J449/J549 and Mrtn 490.

PolS **451 Public Administration** (3 cr) (C). Environment of public administration, politics of organizations, public decision-making, public relations, leadership, personnel administration, financial administration, administration morality; related topics.

PolS **J452/ID-J552 Administrative Law and Regulation** (3 cr). WSU Pol S 552. Rule-making, adjudication, and other modes of regulation of administrative agencies; judicial review and Congressional oversight of administrative acts. Additional projects/assignments reqd for grad cr.

PolS **J453/J553 Public Management Techniques** (3 cr). Emphasizes management styles and the empirical basis for decision; focus on conflict management through control or participatory strategies, and the acquisition and analysis of management information. Additional projects/assignments reqd for grad cr.

PolS **J454/J554 Public Organization Theory** (3 cr). Organization theory and behavior in public and nonprofit sector, organization structure and environment, individual behavior in organizations. Additional projects/assignments reqd for grad cr.

PolS **458 Management Internship** (1-9 cr, max 9). Directed internship in an agency of federal, state, or local government or special projects involving federal, state, or local government. One cr for each week of internship work. Graded P/F. Prereq: perm.

PolS **459 Legislative Internship** (1-9 cr, max 9). Directed internship in a national, state, municipal, or corporate legislative body. Supervised work experience. Report required. Graded P/F. Prereq: perm.

PolS **460 Law and Society** (3 cr). Overview of legal reasoning and functions of law in society; emphasis on capacity of law to affect social change as well as ways in which law responds to social change.

PolS **461 Western Environmental Legal History** (3 cr). Examination of the role of the environment in history; focus on the West, its resources and the role of the law; content will vary depending on interests of instructor and students.

PolS **J464/J564 Politics of the Environment** (3 cr). Political factors that influence formation, implementation, and impact of public policies aimed at protecting the environment. Additional projects/assignments reqd for grad cr.

PolS **465 Politics and the Economy** (3 cr). Analysis of factors that influence political institutions in making economic policy.

PolS **J467/J567 Constitutional Law** (3 cr). The Supreme Court as a constitutional policymaker; federal jurisdiction; constitutional principles concerning judicial review, federalism, implied powers, separation of powers, and due process. Additional projects/assignments reqd for grad cr.

PolS **J468/J568 Civil Liberties** (3 cr). The Supreme Court and its role in protecting civil liberties; freedom of speech, press, and religion; due process, the Bill of Rights, and its application to the states; criminal justice. Additional projects/assignments reqd for grad cr.

PolS **J469/J569 The Judicial Process** (3 cr). Judicial and legal processes, court structure, procedures; judicial behavior and decision-making; selection of judges. Additional projects/assignments reqd for grad cr.

PolS **J471/J571 Intergovernmental Relations** (3 cr). Analysis of fiscal and administrative interdependencies among governmental units in the U.S., with an emphasis on public policies. Additional projects/assignments reqd for grad cr.

PolS **J480/J580 Politics of Development** (3 cr). Role of the state in development, political economy of change, transition to democracy in the Third World, problems of ethnic conflict, overpopulation, and poverty. Additional projects/assignments reqd for grad cr.

PolS **J482/J582 Latin American Politics** (3 cr). Comparative description and analysis of distinctive Latin American political institutions and processes; cultural influences; basic institutions; dependency and development; authoritarianism and democratization; international dimensions. Additional projects/assignments reqd for grad cr.

PolS **J483/J583 Middle Eastern Politics** (3 cr). Comparative analyses of political processes in Middle East and North Africa, Islam and politics, role of the military, and Arab-Israeli conflict. Additional projects/assignments reqd for grad cr.

PolS **ID-J484/J584 Politics of India and the Subcontinent** (3 cr). WSU Asia 484. Comparative analysis of the political process in India, Pakistan, Bangladesh, Sri Lanka, and Nepal; historical development; cultural and social influences on politics; political institutions and behavior. Additional projects/assignments reqd for grad cr.

PolS **J485/J585 African Politics** (3 cr). Comparative description and analysis of politics of Africa south of the Sahara, colonialism, nationalism, and economic problems; politics of selected African countries examined including South Africa and apartheid. Additional projects/assignments reqd for grad cr.

PolS **487 Political Violence and Revolution** (3 cr). Survey of the dominant theories attempting to understand why humans rebel; from political demonstrations to terrorism to revolution; case study analyses of the important historical and modern revolutions. Cr not granted for both PolS 487 and Mrtn 491.

PolS **499** (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

PolS **500 Master's Research and Thesis** (cr arr). Graded P/F.

PolS **501** (s) **Seminar** (cr arr). Areas normally offered incl U.S. politics, U.S. foreign policy, African and Asian politics, community power and politics, U.S. political thought, public law, public administration, and political development. One 2-day field trip is authorized for the seminar in public administration. Prereq: perm.

PolS **502** (s) **Directed Study** (cr arr). Prereq: perm.

PolS **503** (s) **Workshop** (cr arr). Prereq: perm.

PolS **504** (s) **Special Topics** (cr arr). Prereq: perm.

PolS **WS512 Government of the U.S.S.R.** (3 cr). See PolS J412/J512.

PolS **525 History of Political Philosophy I** (3 cr). See PolS J425/J525.

PolS **526 History of Political Philosophy II** (3 cr). See PolS J426/J526.

PolS **528 American Political Thought** (3 cr). See PolS J428/J528.

PolS **529 Contemporary Political Ethics** (3 cr). See PolS J429/J529.

PolS **WS530 Scope of Political Science** (3 cr). WSU Pol S 530.

PolS **WS531 Research Methods in Political Science** (3 cr). WSU Pol S 531.

PolS **537 American Presidency** (3 cr). See PolS J437/J537.

PolS **539 Public Policy** (3 cr). See PolS J439/J539.

PolS **540 International Organizations and International Law** (3 cr). See PolS J440/J540.

PolS **WS545 Public Personnel Administration** (3 cr). See PolS J445/J545.

PolS **549 World Politics and War** (3 cr). See PolS J449/J549.

PolS **551 Seminar in Public Administration** (3 cr). Review of significant issues and methodological problems in the field.

PolS **ID552 Administrative Law and Regulation** (3 cr). See PolS J452/ID-J552.

PolS **553 Public Management Techniques** (3 cr). See PolS J453/J553.

PolS **554 Public Organization Theory** (3 cr). See PolS J454/J554.

PolS **ID555 Seminar in Administrative Theory** (3 cr). WSU Pol S 552. Alt/yrs. Major writers in political theory and concepts such as leadership, supervision, authority, decision-making, and human relations.

PolS **ID556 Governmental Policy and Program Analysis** (3 cr). WSU Pol S 556. Techniques used to analyze policy alternatives and to evaluate program; developing program objectives, management by objectives, productivity analysis, program evaluation, and policy analysis.

PolS **557 Governmental Budgeting** (3 cr). Theory and practice of budgeting in a political environment; focus on potentials and limitations of various budgeting systems, particular viz the federal experience.

PolS **WS561 Seminar in International Security** (3 cr). WSU Pol S 531. U.S. defense and arms control policies; current strategies and weapons issues.

PolS **564 Politics of the Environment** (3 cr). See PolS J464/J564.

PolS **567 Constitutional Law** (3 cr). See PolS J467/J567.

PolS **568 Civil Liberties** (3 cr). See PolS J468/J568.

PolS **569 The Judicial Process** (3 cr). See PolS J469/J569.

PolS **571 Intergovernmental Relations** (3 cr). See PolS J471/J571.

PolS **580 Politics of Development** (3 cr). See PolS J480/J580.

PolS **582 Latin American Politics** (3 cr). See PolS J482/J582.

PolS **583 Middle Eastern Politics** (3 cr). See PolS J483/J583.

PolS **584 Politics of India and the Subcontinent** (3 cr). See PolS J484/J584.

PolS **585 African Politics** (3 cr). See PolS J485/J585.

PolS **WS589 Seminar: International Politics** (3 cr). WSU Pol S 589.

PolS **ID&WS591 Seminar in Public Policy Formation** (3 cr). WSU Pol S 591.

PolS **ID&WS592 Topics in Public Administration** (3 cr). WSU Pol S 542.

PolS **ID&WS593 Seminar in Public Law** (3 cr). WSU Pol S 593. Emphasis on substantive law or judicial process.

PolS **ID&WS594 Seminar in Political Theory** (3 cr). WSU Pol S 594.

PolS **ID&WS595 Seminar in Comparative Politics** (3 cr). WSU Pol S 534.

PolS **598** (s) **Internship** (cr arr). Prereq: perm.

PolS **600 Doctoral Research and Dissertation** (cr arr). Graded P/F.

Psychology

Sallie E. Gordon, Chair, Dept. of Psychology (106 Psych. Bldg. 83844-3043; phone 208/885-6324).

PREREQUISITE: Unless otherwise stated, Psyc 101 is a prerequisite to all other courses in this field. Unless a prerequisite is specifically stated, the prerequisite to all graduate courses is permission of department and instructor.

Psyc **101 Introduction to Psychology** (3 cr) (C) (Psyc 100). Satisfies core requirement J-3-d. Intro to psychology topics, including sensation and perception, learning and thinking, motivation, personality and adjustment, social processes, psychological testing; emphasis on fundamental principles. Two lec and one 1-1/2 hr recitation a wk.

Psyc **200** (s) **Seminar** (cr arr). Prereq: perm.

Psyc **203** (s) **Workshop** (cr arr). Prereq: perm.

Psyc **204** (s) **Special Topics** (cr arr). Prereq: perm.

Psyc **218 Introduction to Research in the Behavioral Sciences** (4 cr). Primarily for majors in psychology. Logic and method of empirical research in the behavioral sciences; design, execution, and reporting of psychological experimentation and research. Three lec and one 2-hr lab a wk. Prereq: Stat 251.

Psyc **299** (s) **Directed Study** (cr arr). Prereq: perm.

Psyc **305 Developmental Psychology** (3 cr) (C). Conception to preadolescence; genetics, anatomy, physiology, biological changes during development, learning, socialization, cognition, and personality.

Psyc **309 Personality and Social Development in Children** (3 cr) (C). Personality and social development from birth to adolescence, including areas of attachment, aggression, impulse control, sex differences, development of a sense of self, conscience development, and effects of parental childrearing styles upon child. Prereq: Psyc 218, 305.

Psyc **310 Psychology of Personality** (3 cr) (C). Theories of personality, basic concepts, techniques of measurement, and experimental methods; the normal personality.

Psyc **311 Abnormal Psychology** (3 cr) (C). Nature, causes, treatment, and prevention of patterns of emotional disturbances and personality disorders, including neuroses and psychoses.

Psyc **316 Industrial Psychology** (3 cr). Contributions of experimental, social, counseling, and clinical psychology to the everyday problems of organization; emphasis on industrial organizations.

Psyc **320 Introduction to Social Psychology** (3 cr) (C). Theories, concepts, and research on the social bases of behavior and social interaction; topics of personal and social relevance, aggression, prejudice, altruism and helping behavior, interpersonal attraction, behavior in groups, conformity, attitudes, authoritarianism, and obedience to authority. Prereq: Psyc 218.

Psyc **J325/J525 Cognitive Psychology** (3 cr). Survey and analysis of major topics in field; emphasis on contemporary research and theory; related topics in perception, memory, and information processing and transformation. Additional projects/assignments reqd for grad cr. Prereq: Psyc 218 or perm.

Psyc **J330/J530 Human Sexuality** (3 cr) (C). Introduction to the fundamentals of human sexuality; emphasis on current trends and research. Additional projects/assignments reqd for grad cr. No prerequisite.

Psyc **372 Physiological Psychology** (3 cr). Physiological bases of animal and normal human behavior. Prereq: Biol 201 or 202, or perm.

Psyc **390 Psychology of Learning** (3 cr). Experimental literature of the nature and conditions of classical and operant conditioning, verbal learning, and cognition. Prereq: Psyc 218.

Psyc **400** (s) **Seminar** (cr arr). Prereq: perm.

Psyc **403** (s) **Workshop** (cr arr). Prereq: perm.

Psyc **404** (s) **Special Topics** (cr arr). Prereq: perm.

Psyc **409 Cognitive Development** (3 cr). Intellectual development of child from birth to maturity, mechanisms of intellectual growth, relationship between language and cognitive development. Prereq: Psyc 218, 305.

Psyc **411 Clinical Psychology** (3 cr). Survey of the field of clinical psychology including history, models, interviewing skills, diagnostic testing, psychotherapy methods, and professional issues.

Psyc **415 History and Systems of Psychology** (3 cr). History of psychology as a field of scientific inquiry; overview of development of schools of thought, prominent figures, and key theories. Prereq: Two upper-division psychology courses.

Psyc **419 Psychology of Aging** (3 cr). Analysis of intellectual and memory changes with aging; diagnosis of senile dementia and pseudodementia; study of psychological problems of aging, plasticity of functioning, and ingredients of successful aging.

Psyc **430 Tests and Measurements** (3 cr). Review of the major principles of test development including test construction and methods for determining test validity and reliaiblity, some of the currently used scales, and study of scaling methods such as Thurstone scales, Likert scales, and semantic differentials. Prereq: Psyc 218.

Psyc **435 Personnel Psychology** (3 cr). Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Prereq: Psyc 430 or perm.

Psyc **444 Sensation and Perception** (3 cr). Fundamental processes and variables in sensory, perceptual, and cognitive experiences of humans. Prereq: Psyc 218.

Psyc **446 Engineering Psychology** (3 cr). Application of principles of experimental psychology to analysis of interaction of the human operator with machine systems and work environments; emphasis on psychological aspects of human performance. Prereq: Psyc 218 or Stat 301 or perm.

Psyc **448 Psycholinguistics** (3 cr). See Engl 448.

Psyc **J450/J550 Training and Performance Support** (3 cr). Review of applicable theory and various methods for developing training programs and performance support systems; emphasis on developing skills for front-end analysis, training program and performance support design, and program evaluation. Additional project/assignments reqd for grad cr. Prereq: Psyc 325 or perm.

Psyc **456 Psychology of Emotion** (3 cr). Theories of emotion; biological and social variables influencing the activation of emotion.

Psyc **496 Applied Behavior Analysis** (3 cr). Analysis and assessment of behavior in real-life settings, e.g., home, business, industry, and institutions such as prisons and psychiatric hospitals; structured programs of intervention and assessment of behavior change; special emphasis on self-management of behavior. Prereq: Psyc 218 and 390.

Psyc **497** (s) **Practicum in Instruction** (1-3 cr, max 6). Tutoring and/or instructional services performed by advanced students under faculty supervision. Prereq: perm.

Psyc **498** (s) **Internship** (1-6 cr, max 6). Directed internship in an approved setting that features psychological applications. Prereq: perm.

Psyc **499** (s) **Directed Study** (cr arr). Prereq: perm.

Psyc **500 Master's Research and Thesis** (cr arr).

Psyc **501** (s) **Seminar** (cr arr). Prereq: perm.

Psyc **502** (s) **Directed Study** (cr arr). Prereq: perm.

Psyc **503** (s) **Workshop** (cr arr). Prereq: perm.

Psyc **504** (s) **Special Topics** (cr arr). Prereq: perm.

Psyc **517 Industrial and Organizational Psychology** (3 cr). Applications of theories, methods, and findings of psychology to problems of organizations and industry. Prereq: perm.

Psyc **WS520 Advanced Social Psychology** (3 cr). WSU Psych 550.

Psyc **525 Cognitive Psychology** (3 cr). See Psyc J325/J525.

Psyc **528 Psychopathology** (3 cr). Review of symptoms, causes, and treatments in adult psychopathology; training in use of DSM-IV for differential diagnosis; may include practicum experience. Prereq: perm.

Psyc **530 Human Sexuality** (3 cr). See Psyc J330/J530.

Psyc **541 Social Psychology in the Workplace** (3 cr). Study of social theory and methods as applied in industry and organizations; includes topics such as attitudes and values, behavior change, conformity, group dynamics and communication, leadership, and cultural norms. Prereq: perm.

Psyc **550 Training and Performance Support** (3 cr). See Psyc J450/J550.

Psyc **552 Ergonomics and Biomechanics** (3 cr). Principles of anthropometry, biomechanics, and work physiology applied to workplace.

Psyc **555 Safety Analysis** (3 cr). Effect of environmental, job, and personal stressors on work performance; systems analysis; safety analysis and accident prevention.

Psyc **561 Human-Computer Interaction** (3 cr). Overview of human-computer interaction (HCI) topics, including user models, dialog, display design, usability, software development, groupware, and multimedia. Prereq: Psyc 446 or perm..

Psyc **562 Advanced Human Factors** (3 cr). Review of topics and theories germane to human factors such as performance measurement systems, design specifications, research issues, controls and displays, human reliability, and illumination. Prereq: ME 409, Psyc 446, and Psyc 586 or Stat 401; or perm.

Psyc **WS570 Psychology of Visual Perception** (3 cr). WSU Psych 585.

Psyc **WS575 Psychopathology/Psychopharmacology I** (3 cr). WSU Psych 533.

Psyc **585 Research Methods** (3 cr). Philosophy of research, types of design, data analysis, research report. Prereq: Psyc 218 or equivalent, or perm.

Psyc **586 Advanced Research Methods** (3 cr). Types of research designs and data analyses; use of mainframe computer packages for data analysis. Prereq: perm.

Psyc **595 Professional Issues and Ethics in Psychology** (3 cr) (C). See Psyc J495/J595.

Psyc **598** (s) **Internship** (cr arr). Prereq: perm.

Psyc **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Range Resources

Kendall L. Johnson, Head, Dept. of Range Resources (205B FWR Bldg. 83844-1135; phone 208/885-6536).

PREREQUISITE: Courses in this subject field numbered above 299 are not open to any undergraduate student who is on academic probation.

Rnge **200** (s) **Seminar** (cr arr). Prereq: perm.

Rnge **203** (s) **Workshop** (cr arr). Prereq: perm.

Rnge **204** (s) **Special Topics** (cr arr). Prereq: perm.

Rnge **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Rnge **221 Natural Resources Ecology** (3 cr). Principles of plant and animal ecology with emphasis on concepts applied in natural resources; includes interactions between organisms and their physical environment, evolutionary processes, populations, communities, energy flow and ecosystems, and conservation biology. Recommended preparation: Biol 202 and 203. Prereq: Biol 100 or 201, or perm. [http://www.uidaho.edu/ecology]

Rnge **251 Principles of Range Resources Management** (2 cr). Development of range use and range resource management, rangeland vegetation types, current management issues, relationship of grazing use with other land uses and values.

Rnge **299** (s) **Directed Study** (cr arr). Prereq: perm.

Rnge **301 Wildland Field Ecology I** (1 cr). Introduction to field ecology; the rationale for and importance of studying terrestrial, aquatic, and human ecosystems; practical experience with tools and skills used to measure wildland ecosystem processes. One 5-hr lab a wk. Prereq or coreq: For/RRT/Soc 235 and For/Rnge/WLF 221.

Rnge **302 Wildland Field Ecology II** (2 cr). Field studies of ecological and socio-political processes in terrestrial, aquatic, and human ecosystems at individual, population, community, landscape, regional, and global scales; application of ecological principles to integrated natural resource management. Two weeks all-day lec/lab immediately following spring semester; overnight field excursions required. Prereq: For/ForP/Rnge/WLF/RRT/Fish 301.

Rnge **352 Natural History of Western Rangelands** (3 cr). Survey of rangeland plant communities of western North America, focusing on their natural history, including the effects of use by human beings, based on their physical, climatic, and biological characteristics. Prereq: Rnge/For/WLF 221 or equiv.

Rnge **354 Rangeland Vegetation Management** (3 cr). Objectives, methods, benefits, and environmental impact of rangeland vegetation management; role of vegetation management in multiple-use rangeland management. One 1-wk field trip. Prereq: Rnge 251 and Rnge/For/WLF 221 or perm.

Rnge **358 Natural Resources of the World** (3 cr). Forest, range, wildlife, fisheries, recreation, soil, water, and mineral resources of the world: their occurrence and nature as well as current and future use and demands including international trade, tourism, and conservation.

Rnge **398** (s) **Renewable Natural Resources Internship** (cr arr). Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F. Prereq: perm of dept.

Rnge **400** (s) **Seminar** (cr arr). Prereq: perm.

Rnge **401** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Rnge **403** (s) **Workshop** (cr arr). Prereq: perm.

Rnge **404** (s) **Special Topics** (cr arr). Prereq: perm.

Rnge **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Rnge **430 Riparian Ecology and Management** (2 cr). Structure, function, and management of riparian ecosystems; interrelationships of terrestrial and aquatic components of riparian areas. Prereq: WLF/For/Rnge 221.

Rnge **453 Rangeland Vegetation Inventory and Analysis** (3 cr). Inventory and monitoring techniques for measuring rangeland vegetation; interpretation of data with respect to range condition and trend, watershed protection, value for livestock and wildlife habitat. Two lec and one field trip/lab a wk. Prereq: Rnge 251 and Stat 251.

Rnge **456 Integrated Rangeland Resource Management and Planning** (4 cr). Vegetation-soil-herbivore interactions influencing multiple-use management of forest and rangeland ecosystems; nutritional relationships between plants and free-ranging ungulates; management planning and strategies for integrating wildlife, livestock, water, timber, and recreation values on forests and rangelands. One 1-week field trip. Prereq: Rnge 251.

Rnge **457 Classification and Identification of Range Plants** (3 cr). Classification, description, and identification of the most important plants found on rangelands in North America. Prereq: Bot 241 or perm.

Rnge **J458/ID-J558 Agroforestry** (3 cr). Same as For J458/J558. WSU NATRS 504. Interdisciplinary approach to sustainable land management that involves ecological, social, and economic integration of forest and woodland production with grazing and/or agriculture crops. Particularly suited to students from less-developed countries. Additional projects/assignments reqd for grad cr.

Rnge **459 Rangeland Ecology** (3 cr). Application of ecological principles in rangeland management; stressing response and behavior of range ecosystems to various kinds and intensity of disturbance and management practice. Two 1-day field trips. Prereq: a course in general ecology or perm.

Rnge **470 Interdisciplinary Natural Resource Planning** (3 cr). Land use planning and decision-making theories, legislation and techniques applied to natural resource case studies from public and private sector, including impact assessment, creation and valuation of alternatives, and public involvement. Two hrs of lec, 3 hrs of lab, and 1 hr of recitation a wk; one 1-day field trip. Prereq: senior standing; For/RRT/Soc 235; For/Rnge/WLF 221; For/Rnge/ForP/RRT/WLF/Fish 302; and four of the following: ForP 250, Rnge 251, For 270, WLF 290, Fish 290, RRT 287.

Rnge **480 Senior Research and Thesis** (cr arr). A research investigation, selected and designed jointly by the student and professor, during which the student has the opportunity to learn research techniques of experimental design, proposal writing, data collection and analysis, scientific writing, and publication; at completion, the student will produce a publishable journal manuscript and/or a conference presentation. Prereq: senior status and perm.

Rnge **493 Environmental Law** (2 cr). See WLF 493.

Rnge **499** (s) **Directed Study** (cr arr). For the individual student; conferences, library, field, or lab work. Prereq: sr standing, GPA 2.5, and perm.

Rnge **500 Master's Research and Thesis** (cr arr).

Rnge **501** (s) **Seminar** (cr arr). Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Prereq: perm.

Rnge **502** (s) **Directed Study** (cr arr). Prereq: perm.

Rnge **503** (s) **Workshop** (cr arr). Selected topics in the conservation and management of natural resources. Prereq: perm.

Rnge **504** (s) **Special Topics** (cr arr). Prereq: perm.

Rnge **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Rnge **WS525 Experimental Plant Ecology** (3 cr). WSU NATRS 525.

Rnge **526 Fire Ecology** (3 cr). See For 526.

Rnge **527 Landscape Ecology of Forests and Rangelands** (2-3 cr). Ecological relationships of biotic communities in heterogeneous environments, spatial and temporal patterns, importance of landscapes in maintenance of ecosystem diversity and function. One 2-hr discussion a week based on extensive reading of current literature. Independent study project and instructor perm reqd for 3 cr. Prereq: upper-division plant or animal ecology.

Rnge **530 Stream Ecology** (2 cr). Alt/yrs. Structure and function of running water ecosystems; principles of population, community, and ecosystem ecology in streams and rivers.

Rnge **541 Issues of Renewable Natural Resource Industries** (2 cr). Overview of renewable natural resource base industries with focus on forest products, range livestock, and tourism; review of historical and economic base for industries and current social, biological, and economic issues of importance.

Rnge **ID551 Rangeland Vegetation Ecology** (3 cr). WSU NATRS 551. Alt/yrs. Ecological concepts of the nature, dynamics, and distribution of plant communities; secondary successional processes, soil-vegetation relations, and development of vegetation-classification schemes for better land management. Prereq: plant ecology and perm.

Rnge **552 Restoration Ecology** (2 cr). Restoration of disturbed or damaged ecosystems; fundamental principles from stress physiology and community ecology and review of case studies in restoration ecology used to examine how damaged ecosystems can be restored. Prereq: Rnge 459 or equivalent course in plant ecology, or perm [http://www.uidaho.edu/ecology]

Rnge **553 Foraging Behavior of Rangeland Herbivores** (2 cr). Behavioral processes of rangeland herbivore foraging, including domestic livestock and wild ungulates; techniques for researching rangeland herbivore foraging behavior; application of theoretical concepts to grazing management.

Rnge **555 Current Issues in Rangeland Resource Management** (2 cr). Alt/yrs. Investigation and disc of current issues in range resources and closely related fields. Prereq: perm.

Rnge **ID558 Agroforestry** (3 cr). See Rnge J458/J558.

Rnge **ID560 Plant Autecology** (3 cr). WSU NATRS 524. Adaptations of individual species in rangeland and forest communities; emphasizing morphological and physiological mechanisms that influence plant establishment, below- and above-ground productivity, plant competition, and grazing sensitivity. Two days of field trips. Prereq: Rnge 221, Bot 311 or perm. [http://www.uidaho.edu/ecology]

Rnge **595** (s) **Problems in World Resources** (1-3 cr, max 3). Prereq: perm.

Rnge **597** (s) **Practicum** (cr arr). Prereq: perm.

Rnge **598** (s) **Internship** (cr arr). Prereq: perm.

Rnge **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Rnge **600 Doctoral Research and Dissertation** (cr arr). Prereq: admission to the doctoral program in "forestry, wildlife and range sciences" and perm of dept.

Recreation

Calvin W. Lathen, Director, Div. of Health, Physical Education, Recreation and Dance, and Coordinator of Recreation (101 Phys. Ed. Bldg 83844-2401; phone 208/885-7921).

Rec **102 Introduction to Recreation Professions** (1 cr). Intro to recreation and its related management problems, resources, and professional opportunities. Graded P/F.

Rec **ID110 Recreation for Special Populations** (3 cr). WSU RLS 110. Overview of recreation for special populations with emphasis on history, etiology, characteristics, services, resources, professional competencies and opportunities, and recreation programs. Two 1-day field trips may be reqd.

Rec **125 Outdoor Leisure Pursuits** (2 cr). Alt/yrs. Focus on wide range of outdoor leisure pursuits available in America, the public and private entities that administer them, and changes that increasing demand will necessitate in the future. Field trips reqd.

Rec **WS181 Introduction to Hospitality Services Industries** (3 cr). WSU H A 181.

Rec **200** (s) **Seminar** (cr arr). Prereq: perm.

Rec **203** (s) **Workshop** (cr arr). Prereq: perm.

Rec **204** (s) **Special Topics** (cr arr). Prereq: perm.

Rec **220 Rock Climbing** (1 cr). Alt/yrs. Intro to fundamentals of basic rock climbing including: equipment, climbing techniques, knots, belaying, and rappelling; emphasis on skill development, risk management, and leadership. Three off-campus field sessions. Prereq: Two courses from Rec 125, 320, 420, RRT 287, 387, 487, 490, or perm.

Rec **221 Mountaineering** (2 cr). Alt/yrs. Intro to fundamentals of mountaineering including: equipment; fundamentals; rock, snow, and ice techniques; climbing equipment; navigation; expedition planning and safety; emphasis on skill development and safety. One 3-day field trip. Prereq: Rec 220 and two courses from Rec 125, 320, 420, RRT 287, 387, 487, 490, or perm.

Rec **222 Cross Country Skiing** (1 cr). Alt/yrs. Intro to skills of cross country skiing including: equipment, waxing, climbing techniques, turns, downhill, and diagonal glides. One 1-day field trip. Prereq: Two courses from Rec 125, 320, 420, RRT 287, 387, 487, 490, or perm.

Rec **223 Winter Camping** (2 cr). Alt/yrs. Intro to fundamental skills reqd to successfully travel in winter environment, including: equipment, trip planning, avalanche awareness, snow shelters, travel techniques, and safety including psychological and physiological aspects of cold/winter weather. One 1-day and one 2-day field trips. Prereq: Rec 222 and two courses from Rec 125, 320, 420, RRT 287, 387, 487, 490, or perm.

Rec **224 Whitewater Rafting** (1 cr). Alt/yrs. Intro to skills of whitewater rafting including: equipment, trip planning, permits, safety, river hazards and accidents, river reading and water situations, techniques, self rescue, and river impact. One or two field trips. Prereq: Two courses from Rec 125, 320, 420, RRT 287, 387, 487, 490, or perm.

Rec **225 Kayaking** (1 cr). Alt/yrs. Intro to skills of whitewater kayaking including: equipment, eskimo rolls, eddy turns, ferrying, rapid maneuvering, river hazards, and safety/rescue. One 2-day field trip. Prereq: Two courses from Rec 125, 320, 420, RRT 287, 387, 487, 490, or perm.

Rec **226 Whitewater Canoeing** (2 cr). Introduction to fundamentals of tandem canoe paddling on whitewater rivers; equipment, trip planning, paddling technique, river readings, safety, and rescue techniques will be examined and practiced. One lec and 2 hrs of lab a wk; one 4- to 7-day field trip.

Rec **227 Mountain Biking** (2 cr). Introduction to fundamentals of mountain biking including equipment, trip planning, skill development, off-road riding, bike repair, and safety. One lec and 2 hrs of lab a wk; one 4- to 7-day field trip.

Rec **ID230 Principles of Therapeutic Recreation** (3 cr). WSU RLS 230. Philosophy, design, and development of recreation programs for persons with disabling conditions, as well as theory and rationale of therapeutic recreation. Field experience reqd. Prereq: Rec 110.

Rec **WS235 Principles of Tourism** (3 cr). WSU H A 235.

Rec **243 Recreation Activities** (2 cr). Same as PE 243. Experience in planning, organizing, leading, and evaluating a broad range of games, social recreation, music, drama, arts and crafts, and special events activities.

Rec **254 Camp Leadership** (2-3 cr, max 3). Alt/yrs. Objectives, program, and philosophy of private, organizational, and school camp programs. One 3-4 day field trip.

Rec **255 Backpacking and Camping Skills** (2 cr). Lec, disc, dem, and practical applications in backpacking and camping skills. Field trips reqd. Prereq: Two courses from Rec 125, 320, 420, RRT 287, 387, 487, 490, or perm.

Rec **256 Camp Counseling Practicum** (2-3 cr, max 3). For camp counselors who are employed by or assigned to approved camps. Cr granted on the basis of one cr for each two wks of camping. Student contracts with instructor for written work. Prereq: perm.

Rec **260 Leisure and Society** (3 cr). Expanding role of leisure in U.S. life; emphasis on factors influencing leisure; analysis of leisure values as related to the individual and society.

Rec **275 Computer Applications in Leisure Services** (2 cr). Introduction to computer software applicable to the recreation and leisure profession; software used to produce graphic presentation material and print material for the leisure profession; Internet access to recreation services in E-mail, gopher, newsgroups, and Netscape. One lec and 1 hr of lab a wk.

Rec **280 Recreation Practicum** (1 cr, max 2). Practical experience in agency recreation and leisure services. Forty clock hrs reqd a cr. Graded P/F. Prereq: perm of adviser.

Rec **299** (s) **Directed Study** (cr arr). Prereq: perm.

Rec **300 Swimming Pool Management** (2 cr). Professional pool and spa operator training that will yield certification through the National Swimming Pool and Spa Foundation. Pool and spa chemistry; plant maintenance and operation; chemical safety; energy considerations; health and safety codes; mechanical aspects of pools and spas. Two 1-day field trips.

Rec **320 Outdoor Recreation Leadership** (2 cr). Alt/yrs. Theory and practice of outdoor leadership techniques necessary for successful outdoor leaders. One 2-day field trip. Prereq: Rec 255 and one outdoor recreation skill course or perm.

Rec **321 Wilderness Medicine and Evacuation** (1 cr). Alt/yrs. Fundamentals of handling wilderness emergencies; instruction including prevention, recognition, evaluation, treatment, and evacuation of injured people in remote situations. One 2-day field trip.

Rec **329 Leadership in Recreation** (3 cr). Alt/yrs. Intro to theories, methods, and styles of effective leadership; includes motivation, group dynamics, leadership skills, and abilities in the recreation and leisure setting.

Rec **ID330 Therapeutic Recreation Programming for People with Disabilities** (3 cr). WSU RLS 330. Alt/yrs. Prevalent disabling conditions (including etiology, symptomatology, and characteristics) and their implications for programming intervention in clinical settings. Field trips reqd.

Rec **340 Leisure and Tourism Enterprises** (3 cr). Alt/yrs. Intro to resort and commercial leisure enterprises including history, types of services, trends, careers, and relationship between business and leisure programs, services, and products. Field trips reqd.

Rec **ID341 Assessment and Evaluation in Therapeutic Recreation** (2 cr). WSU RLS 344. Alt/yrs. Standardized assessment and evaluation tools currently used in therapeutic recreation services; integration of assessment practices into therapeutic recreation programs and how to choose standardized tools appropriate to both client and professional setting; practical assessment situations.

Rec **ID342 Therapeutic Recreation in Psychiatric Settings** (3 cr). WSU RLS 342. Alt/yrs. Therapeutic recreation delivery in psychiatric settings, including long-term settings such as state hospitals, acute inpatient psychiatric settings, and community mental health centers; major psychiatric disorders, how to work as a part of an interdisciplinary team, and the viable role of recreation in the treatment process. Ten hrs of outside experience reqd.

Rec **349 Municipal Park Administration and Maintenance** (2 cr). Alt/yrs. Prin, practices, and problems involved in public park management; emphasis on maintenance, finances, and administration. Two 1-day field trips may be reqd.

Rec **ID365 Leisure and the Aging Process** (3 cr). WSU RLS 365. Alt/yrs. Recreation programming for the elderly based on aging process, cultural influences, and psychological and sociological aspects; visitation and field experience reqd.

Rec **WS382 Hospitality Management and Organization** (3 cr). WSU H A 381.

Rec **400** (s) **Seminar** (cr arr). Prereq: perm.

Rec **403** (s) **Workshop** (cr arr). Prereq: perm.

Rec **404** (s) **Special Topics** (cr arr). Prereq: perm.

Rec **J405/J505 Professional Development** (cr arr). Cr earned may not be applied toward grad degree program. Professional development and enrichment of recreational professionals. Additional projects/assignments reqd for grad cr.

Rec **410 Trends and Issues in Leisure Services** (3 cr). Alt/yrs. Current trends and issues in recreation and parks field; group discussion; background and experience in solving recreation problems through selected topics of current importance in recreation/parks field.

Rec **420 Experiential Education** (2 cr). Alt/yrs. Philosophy and administration of adventure activities, initiative games, ropes courses, and their application to individual and group development; program development and staff development. Field trips reqd.

Rec **425 Leisure Education** (2 cr). Alt/yrs. Historical and philosophical basis of leisure education and leisure counseling; emphasis on identification of individual interests and attitudes in relationship to recreation and leisure needs; review of existing programs, description of methods, techniques, instruments utilized; methods for developing individual leisure profiles.

Rec **ID-J431/J531 Medical Terminology** (1 cr). WSU RLS 431. Alt/yrs. Intro to basic concepts of medical terminology and symbols related to working with people with disabilities. Additional projects/assignments reqd for grad cr.

Rec **ID-J435/ID-J535 Clinical Aspects of Therapeutic Recreation** (3 cr). WSU RLS 430. Alt/yrs. Orientation to the practice of therapeutic recreation as a clinical modality; conceptual framework for understanding importance of using activities in the helping process used by TR profession in clinical settings. Cr earned in Rec 530 by completion of additional projects/assignments. Field trip reqd. Coreq: Rec 280.

Rec **445 Professional Seminar** (1 cr). Orientation to rec internship, professionalism, and employment techniques including development of a vita and interviewing skills. Graded P/F.

Rec **460 History and Philosophy of Recreation and Leisure** (3 cr). Alt/yrs. Development of recreation movement and its cultural, social, and economic background; philosophies of significant leaders in the field; students develop a personal philosophy of recreation.

Rec **ID-J467/ID-J567 Therapeutic Recreation for People with Developmental Disabilities** (3 cr). Same as PE J467/J567. WSU RLS 467. Alt/yrs. Programming models for people with developmental disabilities; TR intervention from developmental sequencing to community reintegration; assessment and treatment planning incorporated into lab experience. Cr earned in Rec 567 by completion of additional projects/assignments. Field trip reqd.

Rec **486 Recreation Program Planning and Marketing I** (2 cr). Planning and development of recreation programs and implementation of marketing techniques; theoretical emphasis with recreation special event programmed at end of semester.

Rec **487 Recreation Program Planning and Marketing II** (2 cr). Planning and development of recreation programs and implementation of marketing techniques; practical application emphasis. Prereq: Rec 486 or perm.

Rec **J493/J593 Management of Leisure Services** (3 cr). Alt/yrs. Planning and development; leadership, facilities, finances, services, and public relations. Cr earned in Rec 593 by completion of additional projects/assignments.

Rec **495** (s) **Practicum in Tutoring** (1 cr, max arr). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Rec **498** (s) **Internship in Recreation** (cr arr). Supervised field work with a professional recreation agency. Prereq: Rec 280, 445, and sr standing.

Rec **499** (s) **Directed Study** (cr arr). Prereq: perm.

Rec **505 Professional Development** (cr arr). See Rec J405/J505.

Rec **WS522 Administrative Perspectives** (3 cr). WSU RLS 522.

Rec **WS529 Historical and Philosophical Concepts of Leisure** (3 cr). WSU RLS 529.

Rec **531 Medical Terminology** (1 cr). See Rec J431/J531.

Rec **WS532 Urban Outdoor Recreation** (3 cr). WSU RLS 530.

Rec **ID535 Clinical Aspects of Therapeutic Recreation** (3 cr). See Rec J435/J535.

Rec **ID567 Therapeutic Recreation for People with Developmental Disabilities** (3 cr). See Rec J467/J567.

Rec **WS582 Recreation Law and Risk Management** (3 cr). WSU RLS 582.

Rec **593 Management of Leisure Services** (3 cr). See Rec J493/J593.

Rec **ID594 Sport and Recreation Budget and Finance** (3 cr). WSU RLS 594. Policies and practices involved in acquisition, control, and financial management in sport and recreation agencies.

Rec **595 Sport and Recreation Facility Management** (3 cr). Management techniques and philosophies applied to recreation and sport facilities; includes operation, marketing, legislation and legal issues, personnel and technical design and planning. Field trips.

Rec **596 Recreation and Sport Management Behavior** (3 cr). Management behavior and strategies related to recreation and sport agencies, including leadership, supervision, and a variety of administrative issues.

Rec **ID597 Computer Applications in Recreation and Leisure Studies** (3 cr). WSU RLS 597. Identifying different computer applications in recreation and leisure fields; acquiring specific computer skills in use of specialized software packages for registration, scheduling, budgeting, and league operations; production of schedules and registration forms.

Rec **598** (s) **Internship** (cr arr). Supervised field experience in an appropriate leisure agency. Graded P/F. Prereq: perm.

Rec **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Religious Studies

Nicholas F. Gier, Coordinator (405 Morrill Hall 83844-3016; phone 208/885-6284).

ReIS **101 Introduction to Religious Studies** (3 cr) (C). Intro to academic study of religion by analyzing history and development of Judaism, Christianity, and Islam.

ReIS **133 Religion and Family** (2 cr). Overview of influence of religion on dating, courtship, marriage, and family life.

ReIS **201 Introduction to Islam** (3 cr). Introduction to the religion of Islam; histories of the three main forms through which it has been transmitted to the modern era: Sunni, Shi'a, and Sufi; beginnings, development, and distinctiveness of these forms from the perspective of Muslim and non-Muslim scholarship, past and present; examination of Islam's founder, Muhammad, the Quran, dominant practices and beliefs, and the faith's historical relation to others.

ReIS **204** (s) **Special Topics** (cr arr).

ReIS **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

ReIS **302 Biblical Judaism: Texts and Thought** (3 cr). See Phil 302.

ReIS **303 Early Christianity: Texts and Thought** (3 cr). See Phil 303.

ReIS **305 Philosophy of Religion** (3 cr). See Phil 305.

ReIS **306 Hindu Thought** (3 cr). See Phil 306.

ReIS **307 Buddhism** (3 cr). See Phil 307.

ReIS **308 Confucianism and Taoism** (3 cr). See Phil 308.

ReIS **321 Twentieth Century Theology** (3 cr). Recent developments in theology, with emphasis on American experience; includes evangelical, process, narrative, liberation, and feminist theologies.

ReIS **322 Religious Movements in America** (3 cr). History and analysis of religion in America from native traditions through emerging religions on the contemporary scene.

ReIS **327 Belief Systems** (3 cr). See Anth 327.

ReIS **375 The Bible as Literature** (3 cr). See Engl 375.

ReIS **404** (s) **Special Topics** (cr arr).

ReIS **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

ReIS **414 Development of Social Theory** (3 cr). See Soc 414.

ReIS **442 The Medieval Church: Europe in the Early and High Middle Ages** (3 cr). See Hist 442.

ReIS **447 The Age of the Renaissance and the Reformation** (3 cr). See Hist 447.

Resource Recreation and Tourism

John D. Hunt, Head, Dept. of Resource Recreation and Tourism (19 FWR Bldg. 83844-1139; phone 208/885-7911; e-mail rrt@uidaho.edu).

PREREQUISITE: Courses in this subject field numbered above 299 are not open to any undergraduate student who is on academic probation.

RRT **WS181 Introduction to Hospitality Services Industries** (3 cr). WSU H A 181.

RRT **200** (s) **Seminar** (cr arr). Prereq: perm.

RRT **203** (s) **Workshop** (cr arr). Prereq: perm.

RRT **204** (s) **Special Topics** (cr arr). Prereq: perm.

RRT **235 Society and Natural Resources** (3 cr). See For 235.

RRT **WS236 Principles of Tourism** (3 cr). WSU H A 235.

RRT **287 Principles of Resource Recreation and Tourism Management** (2 cr). Overview of development of wildland recreation and tourism resources in contemporary society; integration of political, economic, and behavioral issues and concepts into an overall land use management framework.

RRT **299** (s) **Directed Study** (cr arr). Prereq: perm.

RRT **301 Wildland Field Ecology I** (1 cr). Introduction to field ecology; the rationale for and importance of studying terrestrial, aquatic, and human ecosystems; practical experience with tools and skills used to measure wildland ecosystem processes. One 5-hr lab a wk. Prereq or coreq: For/RRT/Soc 235 and For/Rnge/WLF 221.

RRT **302 Wildland Field Ecology II** (2 cr). Field studies of ecological and socio-political processes in terrestrial, aquatic, and human ecosystems at individual, population, community, landscape, regional, and global scales; application of ecological principles to integrated natural resource management. Two weeks all-day lec/lab immediately following spring semester; overnight field excursions reqd. Prereq: For/ForP/Rnge/WLF/RRT/Fish 301.

RRT **303 Resource Recreation and Tourism Field Studies I** (1 cr). Preparation and overview of field site evaluation of resource recreation and tourism planning, development, marketing, and management cases.

RRT **304 Resource Recreation and Tourism Field Studies II** (2 cr). Field site evaluation of resource recreation and tourism planning, development, marketing, and management cases. Two-week field trip during summer session. Prereq: RRT 303 or perm.

RRT **305 Field Research in Wilderness Ecology** (3 cr). See WLF 305.

RRT **310 Leisure Services Research and Evaluation** (3 cr). Empirical research methods used in leisure service delivery programs; how to choose and apply selective research methods and software packages; design, collection, and analysis of information; program evaluation; reporting results; interpreting research literature. Prereq: basic computer skills and Stat 150 or 251 or 301, or perm.

RRT **311 Leisure Services Research and Evaluation Lab** (1 cr). Lab exercises for experience in designing research; collecting data; using computer technology to collect, analyze, and present information; various research methods. Two hrs of lab a wk. Coreq: RRT 310.

RRT **WS381 Hospitality Management and Organization** (3 cr). WSU H A 381.

RRT **385 Resource Recreation and Tourism Management** (3 cr). Alt/yrs. Comprehensive intro to theory, processes, and techniques for managing natural resources recreation and tourism systems; tourist, resource/attraction, and program management strategies demonstrating budgeting, contracting, and human resource management stressed. Prereq: RRT 287, 310, 311 or perm.

RRT **386 Resource Recreation and Tourism Planning** (3 cr). Integration of regional area aspects of land use planning relevant to provision of natural resource recreation and tourism opportunities; applied case studies in private and public sector used to demonstrate styles of planning, planning frameworks, and analysis techniques. Prereq: RRT 287, 310, 311 or perm.

RRT **387 Environmental Interpretive Methods** (3 cr). Introduction to environmental interpretation; communication psychology and media applied to noncaptive audiences in leisure and natural resource settings. Prereq: RRT 287 or perm.

RRT **396 Wilderness Research Internship** (3 cr). See WLF 396.

RRT **398** (s) **Internship** (cr arr). Prereq: perm.

RRT **400** (s) **Seminar** (cr arr). Prereq: perm.

RRT **401** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

RRT **403** (s) **Workshop** (cr arr). Prereq: perm.

RRT **404** (s) **Special Topics** (cr arr). Prereq: perm.

RRT **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

RRT **470 Interdisciplinary Natural Resource Planning** (3 cr). Land-use planning and decision-making theories, legislation and techniques applied to natural resource case studies from public and private sector, including impact assessment, creation and valuation of alternatives, and public involvement. Two hrs of lec, 3 hrs of lab, and 1 hr of recitation a wk; one 1-day field trip. Prereq: senior standing, For/RRT/Soc 235, For/Rnge/WLF 221, For/Rnge/ForP/RRT/WLF/Fish 302; and four of the following: ForP 250, Rnge 251, For 270, WLF 290, Fish 290, RRT 287.

RRT **484 Management of Recreation Sites and Leisure Settings** (2 cr). Introduction to theory, processes, and techniques for managing natural resource-based recreation and tourism sites; emphasis on site impacts and their management, visitor/customer management, liability and risk management, and the proper care of landscape trees and other amenity resources.

RRT **486 Public Involvement in Natural Resource Management** (3 cr). Same as Mrtn 486. Alt/yrs. Theoretical and applied concepts of public involvement in both public and private sectors of natural resource management; historical and legal mandates, government agency responsibilities, applied methods and techniques, case studies, and practical experience. Three lec and three hrs of lab a wk; field trip may be reqd.

RRT **487 Field Environmental Education** (3 cr). Alt/yrs. Concept and techniques of environmental education with emphasis on application at camps, parks, and similar recreation and tourism informal settings.

RRT **488 Interpretive Methods Lab** (3 cr). Development and application of interpretive materials and techniques; concentration on equipment and methods commonly used by natural resource agencies for communicating management programs and interpreting natural environments to visitors. One 3-day field trip. Prereq: RRT 387 or perm.

RRT **489 Personalities and Philosophies in Conservation** (2 cr). Same as WLF 489. Lives and thinking of people who have significantly influenced conservation practice or issues surrounding it.

RRT **490 Wilderness Management** (3 cr). Alt/yrs. Historical and legal aspects of the wilderness concept; conceptual and applied approaches, considering both ecological and sociological elements; recent research.

RRT **491 Use of Wilderness Environments for Personal Growth** (3 cr). Diverse approaches used in wilderness experience programs, theoretical bases for different approaches, and hands-on experience with soft skills approaches to wilderness experience. Three field trips.

RRT **492 International Land Preservation Systems** (3 cr). Alt/yrs. Growth and scope of international land preservation systems from early to recent times; worldwide application of concepts of national parks, nature reserves, wilderness reserves, nature sanctuaries, biosphere reserves, refuges, and other protective designations.

RRT **493 International Issues in Nature Conservation** (3 cr). Examination of international conservation issues and their impact on human societies; analysis of social, cultural, economic, and political constraints to environmental problem solving.

RRT **494 Resource-Based Public Relations and Marketing** (3 cr). Public relations and marketing principles and techniques applied to natural resource and recreation resource management and tourism. One all-day field trip.

RRT **496 Monitoring Human Impacts in Wilderness** (3 cr). Alt/yrs. Theoretical and applied concepts of identifying, measuring, and monitoring changes in wilderness ecosystems caused by human influences, including recreation use, management practices, and both on-site and off-site development. Field trips may be reqd.

RRT **498** (s) **Internship** (cr arr). Prereq: perm.

RRT **499** (s) **Directed Study** (cr arr). For the individual student; conferences, library, field, or lab work. Prereq: sr standing, GPA 2.5, and perm.

RRT **500 Master's Research and Thesis** (cr arr).

RRT **501** (s) **Seminar** (cr arr). Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Prereq: perm.

RRT **502** (s) **Directed Study** (cr arr). Prereq: perm.

RRT **503** (s) **Workshop** (cr arr). Selected topics in the conservation and management of natural resources. Prereq: perm.

RRT **504** (s) **Special Topics** (cr arr). Prereq: perm.

RRT **506 Fundamentals of Research** (3 cr). Research approaches, designs, and methods as applied in natural resources, leisure, and tourism professions. Prereq: basic statistics.

RRT **541 Issues of Renewable Natural Resource Industries** (2 cr). Overview of renewable natural resource base industries with focus on forest products, range livestock, and tourism; review of historical and economic base for industries and current social, biological, and economic issues of importance.

RRT **583 Nature-Based Tourism** (3 cr). Alt/yrs. Current methods and approaches to natural resource tourism and its social, economic, and resource impacts, organizations involved, and management styles used by travel and tourism industry.

RRT **586 Social Ecology of Natural Resources** (3 cr). Same as For 586. Social theory and methods relevant to resource management; interdisciplinary examination of specific natural resource issues such as fire management, wilderness, fisheries disputes, energy policy; emphasis on understanding social aspects of natural resources within an ecological perspective.

RRT **587 Research Literature in Resource Recreation and Tourism** (3 cr). Readings in research literature pertinent to problems, practices, and theories of recreation and tourism; evolution of literature and critical evaluation of scientific methods used.

RRT **591 Theories of Recreation and Tourism Behavior** (3 cr). Same as Soc 591. Application of social science perspectives to the analysis of recreation and tourism behavior; pertinent social science frameworks are explored.

RRT **595** (s) **Advanced Topics in International Conservation** (1-3 cr, max 3). Focused analysis of selected international nature conservation issues.

RRT **597** (s) **Practicum** (cr arr). Graded P/F. Prereq: perm.

RRT **598** (s) **Internship** (cr arr). Prereq: perm.

RRT **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

RRT **600 Doctoral Research and Dissertation** (cr arr). Prereq: admission to the doctoral program in "forestry, wildlife and range sciences" and perm of dept.

Sociology

Donald E. Tyler, Chair, Dept. of Sociology and Anthropology (101 Phinney Hall 83844-1110; phone 208/885-6751).

PREREQUISITE: The successful completion of Soc 101 and three additional credits of lower-division sociology course work are required for enrollment in upper-division sociology courses; exceptions by permission.

Soc **101 Introduction to Sociology** (3 cr) (C) (Soc 110). Satisfies core requirement J-3-d. Basic theories, concepts, and processes involved in scientific study of society; includes socialization process, social inequality, the family, religion, deviance, population, the environment, and social change.

Soc **200** (s) **Seminar** (cr arr). Prereq: perm.

Soc **203** (s) **Workshop** (cr arr). Prereq: perm.

Soc **204** (s) **Special Topics** (cr arr). Prereq: perm.

Soc **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Soc **209 Alternatives to Violence (ATV) Training** (2 cr). Participation in the training for ATV advocates that includes background information on domestic violence and sexual assault (35 hours) and entry-level techniques of working with victims; requires service in the agency for the duration of the year. Graded P/F. Limited enrollment. Prereq: perm.

Soc **220 Marriage and the Family** (3 cr). Introduction to traditional and alternative marriage styles; gender role socialization, mate selection, parenting, divorce, and remarriage.

Soc **230 Social Problems** (3 cr) (C). Contemporary social issues and personal deviations; crime and delinquency, poverty and wealth, drugs, sexual variations, racism, sexism, and the environment.

Soc **235 Society and Natural Resources** (3 cr). See For 235.

Soc **240 Introduction to Social Services** (3 cr). Survey of the field of social welfare and contemporary social services. Prereq: Soc 101 and 230.

Soc **299** (s) **Directed Study** (cr arr). Prereq: perm.

Soc **310 Rural Sociology** (3 cr) (C). Exploration of contemporary issues and trends as they relate to rural America; includes interaction of sociological, economic, and demographic factors with environmental issues. Two 1-day field trips.

Soc **312 Sociology of Organizations** (3 cr). Analysis of positions, roles, norms, and authority structures in organizations.

Soc **313 Collective Behavior** (3 cr) (C). Analysis of such episodes of behavior as riots, demonstrations, panics, hysteria, as well as interaction of sociological, political, and communication processes involved in public acceptance of fashion, fads, and ideology in a mass society.

Soc **315 Community Service Learning** (1-4 cr, max 4). Directed community service, requiring 67 to 140 hours, with concurrent seminar that integrates service experience with theories of human behavior. Prereq: Soc 101, 230, 240, and sociology major, or perm.

Soc **320 Sociology of Substance Abuse** (3 cr). Sociological-psychological analysis of etiology, epidemiology, prevention, and treatment of substance abuse in U.S.; major focus on family issues (including marital relationships, co-dependency) and lifestyle changes; dynamics of social change, subcultures, and symbolic functions attached to drug abuse; issues related to gender, occupational functioning, AIDS, and other topics.

Soc **322 Racial and Ethnic Relations** (3 cr). Same as Anth 322. Theories of race relations, historical and contemporary experiences of minority groups in U.S.

Soc **323 Social Stratification** (3 cr). Major dimensions of status and power in modern society with emphasis on the American social class structure.

Soc **325 Sociology of the Family** (3 cr). Comparative and historical analysis of family systems, principles of social organization of the family; macroanalysis of kinship structures.

Soc **330 Juvenile Delinquency** (3 cr) (C). Extent, causes, and control of juvenile delinquent behavior.

Soc **331 Criminology** (3 cr). Extent, criminal patterns, causes, correctional institutions, alternatives to incarceration. One 1-day field trip.

Soc **332 Corrections** (3 cr). Same as CJ 332. History, facilities, processes, and strategies for correction and punishment of offenders; analysis of concepts of prevention and control of crime.

Soc **360 Population Dynamics and Distribution** (3 cr). See Geog 360.

Soc **400** (s) **Seminar** (cr arr). Prereq: perm.

Soc **403** (s) **Workshop** (cr arr). Prereq: perm.

Soc **404** (s) **Special Topics** (cr arr). Prereq: perm.

Soc **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

Soc **410 Methods of Social Research** (3 cr). Principal methods of data collection, analysis, and interpretation. Prereq: Stat 150 or 251; departmental major or minor.

Soc **412 Society and Personality** (3 cr). Development of self concept from social interaction; how perception, learning, thinking, motivation, and attitude formation relate to social structure. Prereq: upper-division status and Soc 101 or equivalent.

Soc **J414/J514 Development of Social Theory** (3 cr). Same as Anth J414/J514; Soc 414 same as ReIS 414. Development of social theory from classical roots through contemporary schools; biographical accounts and original works in sociological and anthropological theory Additional projects/assignments reqd for grad cr.

Soc **423 Sociology of Gender** (3 cr). Historical and comparative analysis of the various roles, statuses, and life opportunities of men and women; emphasis on how gender roles develop in society and their effect on social structure, social institutions, and interpersonal interaction; consideration of both the women's and men's movements.

Soc **J430/J530 Deviance** (3 cr). Analysis and critique of theories of deviant behavior as applied to delinquency, prostitution, chemical dependencies, mental disorders, etc. Additional projects/assignments reqd for grad cr. Prereq: Soc 330 or 331 or perm.

Soc **ID&WS31 Personal and Social Issues in Aging** (3 cr). WSU Soc 336. Social, psychological, and physical impacts of aging on the individual and on society.

Soc **434 Family Violence** (3 cr). Explanations, patterns, and treatment of spouse abuse, child abuse, sexual exploitation of family members, and elder abuse.

Soc **443 Medical Sociology** (3 cr). Social and organizational characteristics and dynamics of health care system; social roles, social status, and interpersonal relationships of patients and various health care professionals incl physicians and nurses.

Soc **453 Sociology of Mental Health** (3 cr). Analysis of social psychological and cultural factors related to mental health and mental disorders; patterns of response by individuals and groups to mental illness.

Soc **463 Issues in International Health Care** (3 cr). An international comparison of health care systems in western industrialized countries including Canada, United Kingdom, Germany, France, Sweden, and Japan; interdisciplinary analysis of health care systems in each country focusing on basic similarities and differences including physician roles, organizational structure, cost and utilization of medical services.

Soc **470 Senior Seminar in Applied Research** (3 cr). Conducting sociological research focused on community needs and social policy evaluation. Prereq: upper-division status, Soc 410 and Stat 251 or 150, or perm.

Soc **495** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

Soc **498** (s) **Internship** (1-6 cr, max 6). Supervised professional field experience in human service organizations. Graded P/F. Prereq: departmental major and perm.

Soc **499** (s) **Directed Study** (cr arr). Intended to accommodate a wide variety of sociological topics. Prereq: perm.

Soc **501** (s) **Seminar** (cr arr). Subjects normally offered: sociological research, social problems, and social theory. Prereq: perm.

Soc **502** (s) **Directed Study** (cr arr). Subjects normally offered: sociological theory, human ecology, and race relations. Prereq: perm.

Soc **504** (s) **Special Topics** (cr arr). Prereq: perm.

Soc **507** (s) **Research Methodology** (3 cr). See AgEc 507.

Soc **514 Social Theory** (3 cr). See Soc J414/J514.

Soc **530 Deviance** (3 cr). See Soc J430/J530.

Soc **533 History of Indian-White Relations** (3 cr). See Hist J431/J531.

Soc **591 Theories of Recreation and Tourism Behavior** (3 cr). Same as RRT 591. Application of social science perspectives to the analysis of recreation and tourism behavior; pertinent social science frameworks are explored.

Soils

Lawrence E. O'Keeffe, Head, Dept. of Plant, Soil, and Entomological Sciences (242 Iddings Wing, Ag. Sc. Bldg. 83844-2339; phone 208/882-6274).

Soil **205 General Soils** (3 cr). Introduction to the physical, chemical, and biological nature of soils. Prereq: Chem 101 or satisfy prereq for Chem 111.

Soil **206 General Soils Lab** (1 cr). Lab study relevant to Soil 205. Experiments and demonstrations on basic and applied aspects of soil science. One 3-hr lab a wk. Coreq: Soil 205.

Soil **398 Internship** (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

Soil **401 Undergraduate Research** (1-2 cr, max 4). Individual study. Prereq: sr standing and perm.

Soil **404** (s) **Special Topics** (cr arr). Prereq: perm.

Soil **415 Soil Physics** (3 cr). Alt/yrs. Physical properties of soils and their relationships to moisture, aeration, and temperature; cultural practices and erosion problems. Two lec and one 3-hr lab a wk. Prereq: Soil 205, 206, and Phys 111.

Soil **J419/J519 Solute Transport in Porous Media** (2 cr). Alt/yrs. Transport processes and interactions of inorganic and organic solutes in soil; convective and diffusive processes, hydrodynamic dispersion. Term project required for grad cr. Prereq: Soil 205 or perm.

Soil **422 Chemistry of Soil Environment** (3 cr). Alt/yrs. Chemical processes in soil environment. Prereq: Soil 205, 206, and Chem 112 or 113.

Soil **J423/J523 Soil-Plant Analysis** (2 cr). Alt/yrs. Quantitative inorganic chemical analysis of soil-water-plant system. Special project reqd for grad cr. One lec and one 3-hr lab a wk. Prereq: Soil 205, 206, and Chem 113 or perm.

Soil **J425/J525 Microbial Ecology** (4 cr). See MMBB J425/J525.

Soil **437 Soil Biology** (3 cr). Alt/yrs. Introduction to soil organisms including bacteria, fungi, and macroinvertebrates and the influence of their activities on soil processes. Two lec and one 3-hr lab a wk. Prereq: Soil 205 and MMBB 250 or perm.

Soil **438 Pesticides in the Environment** (3 cr). Same as Ent, Intr, and PlSc 438. Alt/yrs. Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Prereq: Chem 275.

Soil **446** (s) **Soil Fertility** (1-3 cr, max 3). Principles of soil fertility management; availability of plant nutrients and their relationship to plant growth and fertilization practices. Prereq: Soil 205, 206.

Soil **J447/ID-J547** (s) **Soil Fertility Management** (1-3 cr, max 3). WSU Soils 547. Philosophy of fertilizer recommendations based on soil and plant tissue testing; principles of fertilizer manufacture, placement, and use for improving plant growth. Project reqd for grad cr. Prereq: Soil 446.

Soil **454 Soil Development and Classification** (3 cr). Relationship of soil development to soil properties; soil profile descriptions and classification. Two lec and one 2-hr lab a wk; two 1-day or one 2-day field trips. Prereq: Soil 205, 206.

Soil **499** (s) **Directed Study** (cr arr). Prereq: perm.

Soil **500 Master's Research and Thesis** (cr arr).

Soil **501** (s) **Seminar** (cr arr). Prereq: perm.

Soil **502** (s) **Directed Study** (cr arr). Prereq: perm.

Soil **504** (s) **Special Topics** (cr arr). Prereq: perm.

Soil **WS513 Models for Vadose Zone Transport** (2 cr). WSU Soils 513. Alt/yrs.

Soil **519 Solute Transport in Porous Media** (2 cr). See Soil J419/J519.

Soil **WS521 Chemistry of Soil Constituents** (3 cr). WSU Soils 521. Alt/yrs. Chemical properties of soil colloidal systems. Prereq: Soil 422, Chem 253, or perm.

Soil **523 Soil-Plant Analysis** (2 cr). See Soil J423/J523.

Soil **525 Microbial Ecology** (4 cr). See MMBB J425/J525.

Soil **526 Soil Mineralogy** (2 cr). Alt/yrs. Distribution and significance of common soil minerals; weathering and general reactivity as related to mineral structures; techniques of mineral identification including x-ray diffraction, chemical dissolution procedures, optical and electron microscopy. One lec and one 3-hr lab a wk. Prereq: Soil 422, 454 or perm.

Soil **528 Advanced Chemistry of Soil Environment** (3 cr). Alt/yrs. Practical treatment of physical and chemical processes affecting ion retention and bioavailability in soils and sediments including speciation, adsorption, precipitation, dissolution and redox reactions. Prereq: Soil 422 or perm.

Soil **WS531 Advanced Soil Biochemistry and Microbiology** (2 cr, max 4). WSU Soils 531.

Soil **ID537 Soil Biochemistry** (3 cr). WSU Soils 537. Alt/yrs. Same as MMBB 537. Origin, chemical structure, and significance of soil biochemical compounds. Prereq: Soil 422, MMBB 380, MMBB 250 or perm.

Soil **WS541 Soil-Plant Relationships in Mineral Nutrition** (3 cr). WSU Soils 541. Alt/yrs.

Soil **ID547** (s) **Soil Fertility Management** (1-3 cr, max 3). See Soil J447/J547.

Soil **549 Tropical Soils** (3 cr). Same as For 549. Alt/yrs. Management of tropical soils in relation with nitrogen, acidity, liming, phosphorus, and other nutrients; effects of cropping/forestry systems on soil productivity; survey of types and potential uses of soils in the tropics. Prereq: Soil 205 or perm.

Soil **WS551 Advanced Pedology** (3 cr). WSU Soils 551. Alt/yrs.

Soil **ID557 Advanced Soil Genesis and Classification** (3 cr). WSU Soils 557. Alt/yrs. Processes of soil genesis as influenced by environmental factors; rationale and development of soil taxonomy; field study of pedological problems. Two lec and one 2-hr lab a wk; 1/2-day and 1-day field trips reqd. Prereq: Soil 454 or perm.

Soil **597** (s) **Practicum** (cr arr). Prereq: perm.

Soil **598** (s) **Internship** (cr arr). Graded P/F. Prereq: perm.

Soil **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Soil **600 Doctoral Research and Dissertation** (cr arr).

Special Education

Jeanne Christiansen, Coord., Dept. of Special Education (111 Educ. Bldg. 83844-3081; phone 208/885-6159).

EDSP **190** (s) **Special Education/Field Experience** (1-3 cr, max 3). Supervised observation and/or instruction with students with disabilities; group discussion sessions. Graded P/F.

EDSP **200** (s) **Seminar** (cr arr). Prereq: perm.

EDSP **204** (s) **Special Topics** (cr arr).

EDSP **275 Education of People with Disabilities** (3 cr) (C). History of provision of services, major movements, and philosophical changes; overview of legal issues and mandates; discussion of disabilities and their relation to learning and instruction. Prereq: sophomore standing; coreq: EDSP 190 or perm.

EDSP **280 Classroom Applications of Learning Theories** (3 cr) (C). Overview of learning theories, their histories, and applications in instructional settings; emphasis on behavioral principles and their relationship to instructional strategies; completion of a project in an applied setting. Prereq: EDSP 275 or perm.

EDSP **290** (s) **Special Education/Field Experience** (1-3 cr, max 3). See EDSP 190.

EDSP **299** (s) **Directed Study** (cr arr). Prereq: perm.

EDSP **377 Designing Instructional Programs** (2 cr). Overview of assumptions, current trends, legal and cultural issues; application of learning principles and strategies for curriculum development; collaborative development of individual Education, Instruction and Transition Plans; methods for evaluating student progress and instructional effectiveness. Prereq: EDSP 280 or perm; coreq: EDSP 290.

EDSP **378 Curriculum Development and Adaption** (3 cr). Orientation to philosophies of curriculum development; advantages and disadvantages of curricular approaches; selection, evaluation, and adaptations of curricula and materials; implementation and evaluation of an IIP and lessons in a school setting; models of collaboration and staffing strategies; legal and cultural issues. Prereq: EDSP 377; coreq: EDSP 390.

EDSP **390** (s) **Special Education/Field Experience** (1-3 cr, max 3). See EDSP 190.

EDSP **400** (s) **Seminar** (cr arr). Prereq: perm.

EDSP **403** (s) **Workshop** (cr arr). Prereq: perm.

EDSP **404** (s) **Special Topics** (cr arr).

EDSP **J405/J505** (s) **Professional Development** (cr arr). Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

EDSP **410 Classrooms for Educating All Students** (2 cr). Emphasis on instruction and staffing strategies to enhance interactions, cooperation, attitudes, and learning of all students within age-appropriate regular classrooms. Prereq: ED 201, EDSP 275, or a methods course.

EDSP **421 Family and Community Involvement** (3 cr). Orientation to theory and practice for working with parents and families in the education of persons with disabilities; school and community systems and resources; parent-teacher communication, home-school operation, and use of school and community resources; skills in collaborating with other professions.

EDSP **425 Evaluation of Children and Youth** (2 cr). Assessment procedures for determining eligibility and identifying educational needs of students with disabilities, including legal issues and current trends. Prereq: EDSP 280 or perm; coreq: EDSP 290.

EDSP **450 Students with Behavioral and Emotional Issues** (3 cr). Trends, issues, and strategies for developing and implementing educational programs for students with various behavioral and emotional issues, including those who qualify as seriously emotionally disturbed; discussion of assessment, programming, legal, and cultural issues. Completion of field work in applied settings is required. Prereq: EDSP 280 or perm.

EDSP **477 Generating Curricula: Inclusive Classrooms** (3 cr). Philosophic assumptions guiding curriculum, use of an ecological approach for assessment, family involvement, and integrating developmental and academic perspectives; instructional strategies; legal issues. Prereq: EDSP 377 or perm; coreq: EDSP 390.

EDSP **480 Practicum** (7 or 14 cr). Dual majors enroll for 7 cr; single majors for 14 cr. Supervised classroom experience with students with disabilities. Graded P/F. Prereq: admission to teacher education, 2.5 GPA, and perm of dept. (Submit application to director of clinical experiences in teacher education by December 1 of school year before enrolling.)

EDSP **487 Language and Communication Development and Disorders** (3 cr). Overview of language, communication, and socio/emotional orientations and development; legal and cultural issues; use of informal assessments for teaching; models for collaboration; strategies for designing and implementing collaborative IIP's. Includes a field component and project. Prereq: EDSP 377.

EDSP **499** (s) **Directed Study** (cr arr). Prereq: perm.

EDSP **500 Master's Research and Thesis** (cr arr).

EDSP **501** (s) **Seminar** (cr arr). Prereq: perm.

EDSP **502** (s) **Directed Study** (cr arr). Prereq: perm.

EDSP **503** (s) **Workshop** (cr arr). Prereq: perm.

EDSP **504** (s) **Special Topics** (cr arr). Prereq: perm.

EDSP **505** (s) **Professional Development** (cr arr). See EDSP J405/J505.

EDSP **522 Advanced Evaluation Techniques** (3 cr). Evaluation tools, practices, and processes that extend beyond eligibility decisions to specialized assessments for early childhood, elementary, and secondary students with disabilities; integration of assessment and curriculum; legal, cultural, and ethical issues.

EDSP **540 Behavioral Analysis for Children and Youth** (3 cr). Application of learning theory to instruction; principles of behavior analysis with application to teaching; applied research techniques, ethical, legal, and cultural issues. Completion of field work in applied setting required.

EDSP **541 Special Education Trends and Issues** (3 cr). Current problems and issues in education of exceptional individuals; alternative solutions to those problems; research bearing on problems and solutions; may include broader social issues in addition to education.

EDSP **542 Families: Issues of Disability and Culture** (3 cr). Issues of families and individuals with disabilities; theories and strategies for forming partnerships with families across curricula, assessment, vocational, residential, and related areas; strategies for working with various cultural perspectives; legal issues. Completion of field work in applied setting required.

EDSP **543 Physical and Medical Issues** (3 cr) (C). Legal and other issues; implications of physical and medical conditions; models for coordination of services provided in instructional settings; includes field component.

EDSP **548 Special Education Curriculum** (3 cr). Theories of curriculum; models of teaching, instructional strategies, evaluation of student progress and service delivery; issues and trends in special education.

EDSP **549 Language, Communication, and Social/Emotional Enhancement** (3 cr). Overview of theory and research findings; discussion of current issues, rationale, and intervention programs and strategies with an emphasis on social relations and interactions, legal mandates, and cultural issues. Includes a field component and project.

EDSP **550 Alternative and Augmentative Communication Strategies for Persons with Moderate or Severe Disabilities** (3 cr) (C). A process for decision making, models for assessment, assessment strategies, and implementation steps for designing an alternative or augmentative communication system.

EDSP **560 Early Childhood Development and Assessment** (3 cr). Overview of development of young children; emphasis on a review of ethical/legal issues and methods and tools for evaluation and assessment, including process of developing an IFSP or IEP with functional goals.

EDSP **561 Early Childhood Special Education Instruction** (3 cr). Overview of instructional strategies and methods for teaching young children with disabilities in natural settings with age appropriate peers; emphasis on strategies for adapting the environment, schedule, and teaching methods to promote inclusion for young children; the link between curriculum and assessment is reviewed and expanded.

EDSP **562 Collaboration and Teaming** (3 cr). Overview and specific application of teaming practices that promote collaboration among disciplines and across agencies and settings serving persons with disabilities; interagency agreements, strategic planning for system change to promote collaboration, and methods for evaluating success.

EDSP **577 Generating Curricula: Issues and Strategies for Inclusive Classrooms** (3 cr). Philosophic issues, reform agendas and legal precedents guiding curriculum, ecological model for assessment, instructional strategies, and curricula integrated with developmental and academic perspectives; staffing strategies, family-school partnerships, administrative issues. Coreq: EDSP 597 (Practicum: Low Incidence).

EDSP **580 Consulting Teacher** (3 cr). Emphasis on models of consultation; role and responsibility of positions; skills necessary to establish productive, collaborative relationships with school personnel; systems change theory.

EDSP **582 Administration of Special Education** (3 cr). Overview of administration of special education including legal issues, leadership skills, systems change theory, management of personnel, budget, and effective use of human and fiscal resources.

EDSP **597** (s) **Practicum** (cr arr). Prereq: perm.

EDSP **598** (s) **Internship** (cr arr). Supervised field experience in an appropriate public or private agency. Graded P/F. Prereq: perm.

EDSP **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

EDSP **600 Doctoral Research and Dissertation** (cr arr).

Statistics

C. Randall Byers, Interim Director, Division of Statistics (415 Carol Ryrie Brink Hall 83844-1104; phone 208/885-7341).

CREDIT LIMITATIONS: Credit is not given for both Stat 251 and 301.

Stat **150 Introduction to Statistics** (3 cr). Satisfies core requirement J-3-c. Intro to statistical reasoning with emphasis on examples and case studies; topics include design of experiments, descriptive statistics, measurement error, correlation and regression, probability, expectation, normal approximation, sample surveys, tests of significance.

Stat **251 Principles of Statistics** (3 cr). Satisfies core requirement J-3-c. Cr not allowed for both Stat 271 and 251 or for both Stat 251 and 301. Same as Math 253. Intro to statistical methods including descriptive statistics, probability, confidence intervals, hypothesis testing, chi-square, analysis of variance, regression, and correlation. Prereq: Math 130 or 143 or 2 yrs of high school algebra.

Stat **271 Statistical Inference and Decision Analysis** (4 cr). Credit not allowed for both Stat 271 and 251 or Stat 271 and 301. Introduction to statistical methods including probability, decision theory, confidence intervals, hypothesis testing, correlation, regression, and nonparametric techniques. May involve evening exams. Prereq: Math 160 or 170.

Stat **ID&WS301 Probability and Statistics** (3 cr). WSU Stat 360. Intended for engineers, mathematicians, and physical scientists. Cr not given for both Stat 251 and 301. Intro to sample spaces, random variables, statistical distributions, hypothesis testing, basic experimental design, regression, and correlation. Prereq: Math 175.

Stat **ID401 Statistical Analysis** (3 cr). WSU Stat 401. Concepts and methods of statistical research including multiple regression, contingency tables and chi-square, experimental design, analysis of variance, multiple comparisons, and analysis of covariance. Prereq: Stat 251 or 271 or 301.

Stat **WS412 Biometry** (3 cr). WSU Stat 412.

Stat **WS-J420/WS-J520 Statistical Analysis of Qualitative Data** (3 cr). WSU Stat 420/520.

Stat **ID&WS422 Sampling Methods** (2 cr). WSU Stat 422. Simple and stratified random sampling, systematic sampling, cluster sampling, double sampling, area sampling, and estimation of sample size. Prereq: Stat 251 or 271 or 301.

Stat **ID428 Geostatistics** (3 cr). See GeoE 428.

Stat **433 Econometrics** (3 cr). See Econ 453.

Stat **437 Statistics for Business Decisions** (3 cr). See Bus 437.

Stat **ID&WS451-ID&WS452 Probability Theory and Mathematical Statistics** (3 cr). See Math 451-452.

Stat **ID&WS-J453/ID&WS-J544 Stochastic Models** (3 cr). See Math J453/J544.

Stat **455 Applied Actuarial Science II** (0 cr). Review of mathematical and applied statistics in preparation for actuarial exam 2. Prereq: Stat 301 and Math 451-452.

Stat **456 Quality Management** (3 cr). See Bus 456.

Stat **499** (s) **Directed Study** (cr arr). Prereq: perm.

Stat **500 Master's Research and Thesis** (cr arr).

Stat **502** (s) **Directed Study** (cr arr). Prereq: perm.

Stat **503** (s) **Workshop** (cr arr). Prereq: perm.

Stat **504** (s) **Special Topics** (cr arr). Prereq: perm.

Stat **R505 Engineering Statistics** (1-3 cr). Theory of probability, statistics, and stochastic processes applied to selected areas of engineering. Prereq: perm.

Stat **507 Experimental Design** (3 cr). Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Prereq: Stat 401.

Stat **ID&WS510 Regression** (3 cr). WSU Stat 535. Simple multiple and polynomial regression in matrix format; estimation, testing, and prediction; stepwise and other numerical methods, examination of residuals, weighted least squares and nonlinear models. Prereq: Stat 451 and Math 330.

Stat **ID514 Nonparametrics** (3 cr). WSU Stat 514. Conceptual development of nonparametric methods including one, two, and k-sample tests for location and scale, randomized complete blocks, rank correlation, and runs test; power, sample size, efficiency, and ARE. Prereq: Stat 401.

Stat **WS520 Statistical Analysis of Qualitative Data** (3 cr). See Stat J420/J520.

Stat **ID&WS521 Multivariate Analysis** (3 cr). WSU Stat 519. The multivariate normal, Hotelling's T^2, multivariate general linear model, discriminant analysis, covariance matrix tests, canonical correlation, and principle component analysis. Prereq: Stat 401.

Stat **525 Econometrics** (3 cr). See AgEc 525.

Stat **ID&WS533 Theory of Linear Models** (3 cr). WSU Stat 533. Theory of least squares analysis of variance models and the general linear hypothesis; small sample distribution theory for regression, fixed effects models, variance components models, and mixed models. Prereq: Stat 452 and Math 330.

Stat **WS539 Time Series** (3 cr). WSU Stat 516.

Stat **ID&WS544 Stochastic Models** (3 cr). See Math J453/J544.

Stat **WS548-WS549 Statistical Theory I-II** (3 cr). WSU Math 548-549.

Stat **ID555 Statistical Ecology** (3 cr). See WLF 555.

Stat **ID&WS571 Reliability Theory** (3 cr). WSU Math 571. Alt/yrs. Statistical concepts; stochastic material strengths and lifetimes; strength versus safety analysis; reliability of coherent systems; maintenance models; complex systems. Prereq: Math 451.

Stat **WS572 Data Analysis** (3 cr). WSU Stat 572.

Stat **597** (s) **Practicum** (cr arr). Prereq: perm.

Stat **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Teacher Education

Lowell D. Jackson, Director, Div. of Teacher Education (405C Educ. Bldg. 83844-3082; phone 208/885-5707).

RELATED AREAS: For other offerings in the field of education, see: agricultural education, art, business education, counseling, educational administration, family and consumer sciences, music, physical education, special education, and vocational teacher and adult education.

PREREQUISITE: For registration in upper-division courses in education, students must have been admitted to the teacher-education program and have a minimum GPA of 2.50, unless a higher average is stated as a prerequisite in the course description.

EDTE **200** (s) **Seminar** (cr arr). Prereq: perm.

EDTE **202 Introduction to Teaching Laboratory** (1 cr). Intro to the "world of teaching" through classroom observation and participation. Graded P/F. Two hrs of lab a wk. Prereq: sophomore standing; prereq or coreq: ED 201.

EDTE **203** (s) **Workshop** (cr arr). Prereq: perm.

EDTE **204** (s) **Special Topics** (cr arr). Prereq: perm.

EDTE **299** (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

EDTE **C302 The Child and Society** (3 cr). Child in the social milieu; family, social group, community, school; social pressures and conditioning upon the child and the education process.

EDTE **326 Elementary School Mathematics Education** (3 cr). Specific methods, research, curricula, and media in teaching elementary-school mathematics. Prereq: Math 235 and 236.

EDTE **336 Reading in the Elementary School** (4 cr). Basic principles and techniques for teaching reading in the elementary school; emphasis on content, methods, and materials.

EDTE **338 Children's Literature** (3 cr) (C). For each grade level; story plays, dramatizations, effective reading and telling children's stories, and their place in elementary school. Prereq: EDTE 336 or perm.

EDTE **375 Elementary School Art Methods** (3 cr). Techniques, materials, and processes used in teaching elementary art; relationship of art to the elementary curricula.

EDTE **381 Elementary School Music Methods I** (3 cr). See MusT 381.

EDTE **400** (s) **Seminar** (cr arr). Prereq: perm.

EDTE **402 Practicum: Field Experience in Public School Settings** (1 cr, max 2). Coreq: EDTE 420.

EDTE **403** (s) **Workshop** (cr arr). Prereq: perm.

EDTE **404** (s) **Special Topics** (cr arr). Prereq: perm.

EDTE **J405/J505** (s) **Professional Development** (cr arr). Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

EDTE **J416/J516** (s) **College Teaching** (1-2 cr, max 2). Techniques for effective teaching at college level. Additional projects/assignments reqd for grad cr.

EDTE **418 Identifying and Correcting Mathematics Deficiencies** (3 cr). Study of teaching arithmetic including appropriate diagnostic-prescriptive strategies for correcting arithmetic deficiencies; microcomputers and calculators as instructional tools; consumer mathematics as an area of application.

EDTE **420 Language, Learning, and Literacy Development** (3 cr). Understanding of literacy development, the connections between language and learning, and how to support the use of reading, writing, listening, and talking to explore literature and other content areas in a diverse, collaborative, learning-centered community. Prereq: EDTE 338; coreq: EDTE 402 or perm.

EDTE **421 Elementary School Social Studies Methods** (2-3 cr). Specific methods, research, curricula, and media in teaching elementary-school social studies.

EDTE **J422/J522 Early Childhood and Kindergarten Education** (3 cr). Historical development, theoretical and practical applications in early childhood and kindergarten education. Additional projects/assignments reqd for grad cr. Two lec and 3-6 hrs of lab a wk.

EDTE **435 Practicum: Elementary School Teaching (Special)** (3 cr). For secondary education students majoring in art or physical education who wish to qualify for Idaho endorsement to teach these subjects at the elementary level. Graded P/F. Prereq: special methods in the subject area and cumulative GPA of 2.50. (Submit application to director of clinical experiences in teacher education by December 1 of school yr before enrolling.)

EDTE **444 Elementary School Science Methods** (2-3 cr). Specific methods, research, curricula and media in teaching elementary-school science.

EDTE **J463/J563 Literacy Methods for Content Learning** (3 cr). Theory of and practical strategies for extending and reinforcing student learning of subject matter through reading and writing. Additional projects/assignments reqd for grad cr. Prereq: ED 314 or perm.

EDTE **473 International Education Scene** (1-9 cr, max 9). Study-tour conducted by a UI faculty member to observe selected education systems and procedures in foreign countries. One cr a wk.

EDTE **ID&WS474 Secondary School Foreign Language Methods** (3 cr). WSU For L 340. Alt/yrs. Specific methods, research, curricula, and media in teaching secondary school foreign language. Prereq: ED 312, 313, 314, EDTE 463, or perm.

EDTE **475 Secondary School English Methods** (3 cr). Specific methods, research, curricula, and media in teaching secondary school English. Enrollment limited to 18 per section. Prereq: ED 312, 313, 314, EDTE 463, Engl 401, 441.

EDTE **476 Secondary School Social Studies Methods** (3 cr). Specific methods, research, curricula, and media in teaching secondary school social studies. Prereq: ED 312, 313, 314, EDTE 463, or perm.

EDTE **477 Secondary School Science Methods** (3 cr). Specific methods, research, curricula, and media in teaching secondary school science. Prereq: ED 312, 313, 314, EDTE 463, or perm.

EDTE **478 Secondary School Mathematics Methods** (3 cr). Specific methods, research, curricula, and media in teaching secondary school mathematics. Prereq: ED 312, 313, 314, EDTE 463, or perm.

EDTE **479 Secondary School Art Methods** (3 cr). Alt/yrs. Specific methods, research, curricula, and media in teaching secondary-school art. Prereq: EDTE 463 or perm.

EDTE **499** (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

EDTE **500 Master's Research and Thesis** (cr arr).

EDTE **501** (s) **Seminar** (cr arr). Prereq: perm.

EDTE **502** (s) **Directed Study** (cr arr). Prereq: perm.

EDTE **503** (s) **Workshop** (cr arr). Prereq: perm.

EDTE **504** (s) **Special Topics** (cr arr). Prereq: perm.

EDTE **505** (s) **Professional Development** (cr arr). See EDTE J405/J505.

EDTE **507 Supervision of Instruction** (3 cr). Preparation of supervisors to aid teachers in the improvement of instruction.

EDTE **510 Philosophy of Education** (3 cr). Analysis of educational objectives, concepts, and theories.

EDTE **511 Planning and Administering the Curriculum** (3 cr). Management skills, concepts, and information needed to administer a district-wide curriculum; audits and other evaluations as part of the curriculum or program development cycle; duties and responsibilities of curriculum developers from a standpoint of several possible roles and assignments; criteria and basic concepts for an audit, including essential curriculum management components, alignment, quality control, standards, and data sources.

EDTE **512 Program Development and Evaluation** (3 cr). Types of instructional systems, systematic educational program development; evaluation methods, issues in measurement and evaluation design.

EDTE **513 History of Educational Thought** (3 cr). Writings that have influenced educational theory and practice.

EDTE **514 The Logic of Teaching** (3 cr). Different kinds of statements (e.g., synthetic, analytic, and value) and different logical operations (e.g., defining, describing, evaluating, and justifying, comparing and contrasting, conditional inferring and explaining), particularly as these occur in classroom situations in a teaching context.

EDTE **516** (s) **College Teaching** (1-2 cr, max 2). See EDTE J416/J516.

EDTE **517 Advanced Elementary School Mathematics Education** (3 cr). Recently developed methods and materials in elementary school mathematics. Prereq: qualified for a standard elementary certificate.

EDTE **521 Advanced Language Arts** (3 cr). Current research in instruction of the language arts, the reading/writing/listening/speaking connection, and teaching/learning; integrated language arts curriculum; assessment/evaluation strategies. Prereq: EDTE 420 or equiv or perm.

EDTE **522 Early Childhood and Kindergarten Education** (3 cr). See EDTE J422/J522.

EDTE **524 Models of Teaching** (3 cr). Examination of information processing, social interaction, personal, and behavioral models of teaching; emphasis on practical implementation of these models in teaching situations.

EDTE **526 Advanced Educational Psychology** (3 cr). Selected psychological theories and their application to instruction, classroom management, reading, testing, and related educational research.

EDTE **527 Instructional Theory into Practice** (3 cr). Applications of instructional theory to the areas: teaching to an objective; diagnostic and prescriptive teaching; teaching to enhance motivation; reinforcement, transfer, retention, and rate and degree of learning; enhancement of pupil self-concept; and critical decisions underlying such techniques.

EDTE **530 Ethical Leadership and Law in Education** (3 cr). Ethical and legal principles undergirding schools in the U.S.; statutory and case laws focusing on Idaho and surrounding states.

EDTE **551 Children's Literature and the Curriculum** (3 cr). How all phases of literature fit into and become a part of the curriculum; developing various areas of the curriculum based on literature; evaluation of literature, authors, and illustrators.

EDTE **ID&WS558 Writing Institute: NW Inland Writing Project** (6 cr). WSU Engl 592-593. Theory, research, and practice of kindergarten through college writing instruction including prewriting, drafting, revising, editing, publishing, grammar, mechanics, writing across the curriculum, error analysis, writing to learn; focus on writing for a variety of audiences and purposes (transactional, poetic, expressive); develops participant's own writing ability and ability to present in-service workshops for school districts. Four lec and four hrs of lab a wk. Prereq: Engl 401 or EDTE 420 or equiv or perm.

EDTE **561 Issues in Literacy** (3 cr). Current issues in literacy and their impact on classroom instructional practice.

EDTE **562 Advanced Reading Techniques** (3 cr). Consideration of the research basis for current instructional practices in reading and development of more effective techniques for teaching reading. Prereq: EDTE 336 or perm.

EDTE **563 Literacy Methods for Content Learning** (3 cr). See EDTE J463/J563.

EDTE **564 Advanced Children's Literature** (3 cr). Contemporary issues in children's literature; theoretical and research bases for current practice; reading children's literature; advanced study of genres, resources, and strategies for using children's books to better understand our multi-cultural society. Prereq: EDTE 338 or equiv, or perm.

EDTE **565 Psycholinguistics and Reading** (3 cr). Examining reading as a socio-psycholinguistic process; analyzing this process using miscue analysis; exploring ways to relate theory to practice. Prereq: EDTE 336 or perm.

EDTE **566 Corrective Reading** (3 cr). Nature, causes, and diagnosis of moderate reading difficulties; translation of diagnostic information into instructional practice. Prereq: EDTE 336, 562, or equivalent.

EDTE **567 Clinical Practicum in Reading** (3 cr). Exercise of diagnostic procedures and individual instructional techniques with small groups of children who have moderate reading difficulties. Prereq: EDTE 566.

EDTE **568 Seminar: Research in Reading** (3 cr). Examination of significant research problems in reading and the procedures used to study such problems. Prereq: doctoral standing or perm.

EDTE **569 Teaching of Reading Methods** (3 cr). Examination of content, instructional methodologies, and evaluation techniques employed in teacher education in reading. Prereq: doctoral standing or perm.

EDTE **572 Measurement and Evaluation** (3 cr). Improvement of testing, examination, and evaluation in schools; practice in making, giving, scoring, and interpreting tests; use of results in counseling.

EDTE **581 Systematic and Objective Analysis of Instruction** (4 cr). Supervision as a change process and analysis of supervisory cycle; application of supervisory cycle in K-12 classroom situations; designed to improve individual skill in analysis of instruction and to relate theory to practice. Graded P/F. Preregistration reqd; enrollment limited to 14 per section.

EDTE **597** (s) **Practicum** (cr arr). Graded P/F. Prereq: perm.

EDTE **598** (s) **Internship** (cr arr). Currently offered in public school teaching and college teaching. Graded P/F. Prereq: perm.

EDTE **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

EDTE **600 Doctoral Research and Dissertation** (cr arr).

Theatre Arts

Charles S. Ney, Chair, Dept. of Theatre Arts (U-Hut 102 83844-3074; phone 208/885-6465).

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: TheA 105-106-305-306-372-373-407-408; TheA 103-104-201-202.

TheA **101 Introduction to the Theatre** (3 cr). Satisfies core requirement J-3-d. For nonmajors. Building an appreciation for theatre as an art form through understanding the creative process of the playwright, the director, the designer, and the actor. Attendance at theatre productions reqd.

TheA **102 Theatrical Make-up** (3 cr). Creation of the make-up mask through sculpting with paint. Limited to 20 students. Two lec and 2 hrs of lab a wk. Prereq: perm.

TheA **103 Theatre Technology I** (2 cr). Intro to theatre production spaces, shop tools, construction materials, and stage equipment; theories and methods used in lighting and in the construction of scenery. Two lec and 4 hrs of lab a wk. Coreq: TheA 190.

TheA **104 Theatre Technology II** (2 cr). Methods of costume construction techniques; intro to masks, sewing, millinery, and costume craft skills. Two lec and 4 hrs of lab a wk. Coreq: TheA 190.

TheA **105-106 Basics of Performance** (3 cr). Intro to performance; techniques of relaxation, observation, and justification; work in improvisation, sensory exploration, image-making, and beginning textual analysis; initial monologue and scene performance. One lec and 2 hrs of lab a wk.

TheA **110 Convocation** (0 cr). One 1-hr weekly seminar.

TheA **125 Summer Theatre I** (2-4 cr, max 4). Theatre production, including public presentation of several plays. Max 10 cr in TheA 125 and 395 combined. Prereq: perm of dept.

TheA **150 Performance Lab I** (1 cr). Fundamentals of voice, speech, and movement techniques for the stage. Two hrs of lab a wk.

TheA **151 Performance Lab II** (1 cr). Continuation of TheA 150; additional techniques in voice, speech, and movement for the stage. Two hrs of lab a wk.

TheA **190** (s) **Theatre Practice I** (1 cr, max arr). Open to nonmajors. Practical experience in all aspects.

TheA **200** (s) **Seminar** (cr arr). Prereq: perm.

TheA **201 Scene Design I** (3 cr). Development of basic skills in visualization, period research, graphic techniques, and script interpretation in scenery. Two lec and 2 hrs of lab a wk.

TheA **202 Costume Design I** (3 cr). Costume design skills including script/character analysis, fabric choices, design process, period research, and drawing/painting skills. Three lec and 1 hr of lab a wk.

TheA **203** (s) **Workshop** (cr arr). Prereq: perm.

TheA **204** (s) **Special Topics** (cr arr). Prereq: perm.

TheA **205 Lighting Design I** (3 cr) (ThA 373). Basic equipment, lighting methods, and theory for theatrical production; basic drafting of realized and hypothetical productions. Three lec and 1 hr of lab a wk.

TheA **299** (s) **Directed Study** (cr arr). Prereq: perm.

TheA **305 Intermediate Acting** (3 cr) (ThA 272). Exploration of Stanislavsky System focused in work on sense and emotional memory, inner monologue, and imagery techniques; emphasis on group improvisation and theatre games; work in action and scene study; performances of selected scenes and monodramas. One lec and 3 hrs of lab a wk. Prereq: TheA 105-106.

TheA **ID306 Intermediate Acting** (3 cr) (ThA 273). WSU Drama 273. Studies in American method acting as exemplified by its leading practitioners (Strasberg, Hagen, and Meisner); textual analysis and individual acting problems; continuing emphasis in scene preparation. One lec and 3 hrs of lab a wk. Prereq: TheA 305 or perm.

TheA **320 Theatre Management** (2 cr). Exploration of standard management practices relating to theatre production and business, funding, and public relations.

TheA **350 Performance Lab III** (1 cr). Continuation of TheA 151; advanced techniques in voice, speech, and movement for the stage. Two hrs of lab a wk. Prereq: TheA 150 and 151 or perm.

TheA **361 Technical Direction** (3 cr). Technical direction and planning for single and multiple set theatre productions; includes shop and personnel management techniques, drafting, budgets, scheduling, and organization.

TheA **371 Play Analysis** (3 cr). Critical intro to plays as drama and theatre; an approach to tragic and comic genres; major dramatists of the 20th century culminating in an analysis of contemporary theatre styles.

TheA **372 Methods in Characterization** (3 cr). Alt/yrs. Developing a character through work in centers, physicalization, and emotional exploration as well as character essences based on studies in animals, paintings, costumes, music, and props. One lec and 3 hrs of lab a wk. Prereq: TheA 306 or perm.

TheA **373 Advanced Acting** (3 cr). Alt/yrs. Theory and practice of comedy playing: exercises, improvisations, and performances in comic genres, farce through comedy of manners; intro to period comedy. One lec and 3 hrs of lab a wk. Prereq: TheA 306 or perm.

TheA **WS381 Creative Drama** (3 cr). WSU Drama 464.

TheA **390** (s) **Theatre Practice II** (cr arr). Open to nonmajors. Continuation of TheA 190. Practical experience in all aspects of theatre.

TheA **395 Summer Theatre II** (2-8 cr, max 8). Continuation of TheA 125. Max 10 cr in TheA 125 and 395 combined. Prereq: perm of dept.

TheA **400** (s) **Seminar** (cr arr). Prereq: perm.

TheA **403** (s) **Workshop** (cr arr). Prereq: perm.

TheA **404** (s) **Special Topics** (cr arr). Prereq: perm.

TheA **405 Individual Instruction in Performance** (cr arr). Individualized coaching in performance. One hr of lab a wk per cr. Prereq: perm of dept.

TheA **406 Individual Instruction in Production** (cr arr). Individualized and research study in technical production and design. One hr of lab a wk per cr. Prereq: perm of dept.

TheA **J407/J507 Acting Shakespeare** (3 cr). Alt/yrs. Shakespearean texts; emphasis on interpreting and performing conventions of his prose and verse plays, as well as a study of the world view of Elizabethan England. Additional projects/assignments reqd for grad cr. One lec and 3 hrs of lab a wk. Prereq: TheA 306 or perm.

TheA **J408/J508 Styles of Acting** (3 cr). Alt/yrs. Study and performance of acting styles based on cultural backgrounds, manners, and customs of a period; selected historical and 20th century styles; continued work in acting Shakespeare. Additional projects/assignments reqd for grad cr. One lec and 3 hrs of lab a wk. Prereq: TheA 306 or perm.

TheA **J410/J510 Costume Design II** (3 cr, max 12). Emphasis on developing characterization, stylization, and fabric choice; explore advanced rendering techniques; continuation of portfolio development. Additional projects/assignments reqd for grad cr. Three lec and 1 hr of lab a wk. Prereq: TheA 202 or perm.

TheA **463 Costume Construction** (3 cr). Development of two-dimensional rendering into a three-dimensional realized costume; emphasis on advanced construction techniques, fabric selection, and costume crafts. Prereq: TheA 104 or perm.

TheA **464 Scenographic Techniques** (3 cr). Practical survey of graphics used in design and execution of scenery for the stage, including drafting, perspective, front and rear elevations, painters elevations, and properties design and drafting. Four hrs of lab a wk. Prereq: TheA 202.

TheA **465 Advanced Scene Design** (3 cr). Development of a conceptual approach to design through assorted design projects. Prereq: TheA 464.

TheA **J467-J468/J567-J568 The Theatre** (3 cr). Alt/yrs. Survey of European and American theatres, dramatists, and actors from the Greeks to Ibsen. Additional projects/assignments reqd for grad cr. Prereq: TheA 371 or perm of dept.

TheA **J469/J569 Modern Theatre** (3 cr). History of the movements, personalities, and representative plays of the modern theatre from Ibsen, Strindberg, and Chekhov through the present. Additional projects/assignments reqd for grad cr. Prereq: TheA 371 or perm of dept.

TheA **J471-J472/J571-J572 Directing** (3 cr). TheA J471/J571: preparation of a play from casting to performance. TheA J472/J572: staging and interpretation of a play; developing a production concept; coaching actors. Additional projects/assignments reqd for grad cr. Three lec and one hr of lab a wk. Prereq or coreq for TheA J471/J571: TheA 305; prereq or coreq for TheA J472/J572: upper-division acting course at 300/400 level.

TheA **J484/J584 Advanced Stage Lighting** (3 cr). Advanced lighting design theories and practice through design of assorted productions in realistic drama, dance, arena, thrust, and mystical theatre. Additional projects/assignments reqd for grad cr. Prereq: TheA 205 or perm.

TheA **498** (s) **Internship** (cr arr). Prereq: perm.

TheA **499** (s) **Directed Study** (cr arr). Prereq: perm.

TheA **500 Master's Research and Thesis** (cr arr).

TheA **501** (s) **Seminar** (cr arr). Prereq: perm.

TheA **502** (s) **Directed Study** (cr arr). Prereq: perm.

TheA **503** (s) **Workshop** (cr arr). Prereq: perm.

TheA **504** (s) **Special Topics** (cr arr). Prereq: perm.

TheA **507 Acting Shakespeare** (3 cr). See TheA J407/J507.

TheA **508 Styles of Acting** (3 cr). See TheA J408/J508.

TheA **509 Summer Theatre III** (2-8 cr, max 8). Theatre production, including public presentation of several plays; emphasis on responsibilities of the grad student including assisting the director, serving as crewhead, and acting. Prereq: 20 cr in the theatre arts and perm of dept.

TheA **510 Costume Design II** (3 cr, max 12). See TheA J410/J510.

TheA **511** (s) **MFA Acting Studio** (2 cr, max 18). Advanced individual study in performance.

TheA **512** (s) **MFA Directing Studio** (2 cr, max 18). Advanced individual study in directing, including work in staging, styles, and interpretation.

TheA **513** (s) **MFA Design Studio** (2 cr, max 18). Advanced individual study in all areas of theatrical design with emphasis on portfolio development. One lec and 2 hrs of lab a wk.

TheA **514** (s) **MFA Production Studio** (2 cr, max 18). Advanced individual study in all areas of technical theatre production and management with emphasis on portfolio development. One lec and 2 hrs of lab a wk.

TheA **515 MFA Jury/Portfolio Review** (1 cr, max arr). Preparation and evaluation of performance monologues and design portfolios. Coreq: MFA studio courses.

TheA **520 Advanced Directing** (3 cr). Techniques and styles of major 20th-century directors; work in directing genres of tragedy, drama, melodrama, comedy, and the absurd.

TheA **522 Directing the Period Play** (3 cr). Interpretation and staging of classical texts in major dramatic periods; social and cultural view of each period.

TheA **535 Production Design** (3 cr, max 12). Design responsibility for a mainstage production. Prereq: perm of dept.

TheA **567-568 The Theatre** (3 cr). See TheA J467-J468/J567-J568.

TheA **569 Modern Theatre** (3 cr). See TheA J469/J569.

TheA **571-572 Directing** (3 cr). See TheA J471-J472/J571-J572.

TheA **584 Advanced Stage Lighting** (3 cr). See TheA J484/J584.

TheA **596 MFA Exit Project** (3 cr). Culminating creative project for MFA candidates. Prereq: perm of dept.

TheA **597** (s) **Practicum** (cr arr). Prereq: perm.

TheA **598** (s) **Internship** (cr arr). Prereq: perm.

TheA **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

Veterinary Science

Richard A. Battaglia, Head, Dept. of Animal and Veterinary Science (213 Ag. Sc. Bldg. 83844-2330; phone 208/885-6345; email bhawk@uidaho.edu).

Courses in this subject field that have a WS prefix are open only to students who have veterinary science graduate student status or by permission of the director of the Idaho faculty of the WOI Regional Program in Veterinary Medical Education.

VS **WS435 Disease Concepts for Wildlife Biologists** (3 cr). WSU V Mic 435.

VS **481 Virology** (3 cr). See MMBB 481.

VS **483 Virology Lab** (1 cr). Same as MMBB 483. Familiarization with tissue culture techniques used in virology; infection of cultures with selected viruses; observation and evaluation of infected cultures by different diagnostic techniques. One 3-hr lab a wk. Prereq or coreq: VS 481.

VS **499** (s) **Directed Study** (cr arr). Prereq: perm.

VS **500 Master's Research and Thesis** (cr arr).

VS **501** (s) **Seminar** (cr arr). Prereq: perm.

VS **502** (s) **Directed Study** (cr arr). Prereq: perm.

VS **504** (s) **Special Topics** (cr arr). Prereq: perm.

VS **WS510 Advanced Food Chemistry** (3 cr). WSU FSHN 510. Alt/yrs.

VS **512 Principles of Comparative Pathology** (4 cr). Alt/yrs. Gross and micro pathology, histological techniques, neoplasia. Prereq: Zool 324, 427 or equivalent, or perm.

VS **WS518 Veterinary Physiology** (5 cr). WSU V M 518.

VS **WS570 Advanced Immunology** (3 cr). WSU Micro 570.

VS **598** (s) **Internship** (cr arr). Prereq: perm.

Vocational Teacher Education

Jerry L. Tuchscherer, Director, Div. of Adult, Counselor, and Technology Education (210 Educ. Bldg. 83844-3083; phone 208/885-6556).

MAJORS: Vocational education majors fulfill their major requirements from the courses listed in this section.

RELATED FIELDS: For those course offerings in vocational teacher education, see agricultural education, counseling, and family and consumer sciences.

VoEd **200** (s) **Seminar** (cr arr). Prereq: perm.

VoEd **203** (s) **Workshop** (cr arr). Prereq: perm.

VoEd **204** (s) **Special Topics** (cr arr). Prereq: perm.

VoEd **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

VoEd **270 Technical Competence I** (1-10 cr, max 10). Technical competence is gained from experience in areas of concentration related to the bachelor of science degree in vocational education or technology. Grades for successful completion of VoEd/ITED 270, 370, and 470 will be transcripted as P (pass) during the student's last semester and completion of all degree requirements. Prereq: 9 cr in residence in vocational teacher education.

VoEd **299** (s) **Directed Study** (cr arr). Prereq: perm.

VoEd **306 Preservice for New Vocational Teachers** (3 cr). Fundamental skills necessary for new vocational teachers in secondary and postsecondary schools to be successful in meeting students.

VoEd **307 Inservice for New Vocational Teachers** (3 cr). Resolution of common problems faced by new teachers through seminars and observations/evaluations/perceptions by UI preceptor; course meets state certification requirements for 30 hrs of inservice for vocational specialist certification. Prereq: perm.

VoEd **J351/J551 Principles and Philosophy of Vocational Education** (3 cr) (C, 351 only). VoEd 351 same as AgEd 351. Overview and interpretation of history, aims, and purposes of public education and vocational education; issues and programs comprising vocational education in Idaho and the U.S. Students who take course at grad level are reqd to complete additional assignments, papers, and/or presentations.

VoEd **370 Technical Competence II** (1-10 cr, max 10). See VoEd 270. Prereq: completion of jr yr in vocational teacher education.

VoEd **400** (s) **Seminar** (cr arr). Prereq: perm.

VoEd **403** (s) **Workshop** (cr arr). Graded P/F. Prereq: perm.

VoEd **404** (s) **Special Topics** (cr arr). Prereq: perm.

VoEd **J405/J505 Professional Development** (cr arr). Cr earned in this course will not be accepted toward grad degree programs. Professional development and enrichment. Additional projects/assignments reqd for grad cr.

VoEd **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

VoEd **J418/J518 Learning Styles** (3 cr). Same as AdEd J418/J518. Identify and provide experience in administration, interpretation, and elements of theoretical bases for contemporary learning styles instruments. Additional projects/assignments reqd for grad cr.

VoEd **420 Evaluation in Vocational Education** (3 cr). Methods and techniques; construction and use of objective tests, performance tests, rating scales, check lists.

VoEd **426 Analysis, Curriculum, and Evaluation** (3 cr). Same as ITED 426. Principles of occupational analysis and course construction; competency-based; course and curriculum development, trends, and concepts.

VoEd **430 Advisory Committees and Vocational Student Organizations** (3 cr). Organizing and maintaining effective advisory committees; development of leadership skills; techniques and procedures for establishing a vocational student organization.

VoEd **443 Introduction to Special-Needs Education** (1 cr). History, background, and concept of special needs.

VoEd **444 Diverse Populations and Individual Differences** (2-3 cr). Same as FCS 444. Examines the impact of individual differences on teaching and learning. Prereq or coreq: VoEd 443.

VoEd **445 Proseminar in Vocational Education** (1 cr, max 2). Professional issues in education; orientation to practicum, career placement, and entry level teaching. Coreq: enrollment in senior practicum. Fall semester will require an additional 8-hr Saturday session for CPR and first aid training.

VoEd **450 Industrial Safety** (3 cr). Same as ITED 450. Organization and administration of safety programs in industry and vocational-technical education laboratories; materials, research literature, methods, and techniques for industrial safety education.

VoEd **451 School Lab Planning and Administration** (3 cr). Same as ITED 451. For those in or entering occupational education who seek a competency-based approach to planning, organizing, and managing a school teaching lab/shop.

VoEd **453 Task Analysis** (1 cr). Intro to task analysis methods, tech, and procedures.

VoEd **457 Transitioning to Work** (3 cr). Same as BuEd 457. Planning and managing cooperative, technical preparation, and other transitional programs.

VoEd **460 Methods of Comprehensive Guidance for New Teachers** (2 cr). Preparation of new teacher candidates to assist secondary-level students in their social, career, and educational development; practice delivery of activities contained in Idaho's Comprehensive Guidance Model.

VoEd **464 Vocational Guidance** (3 cr). Same as Coun 464. Identification of individuals who can profit from vocational-technical education program; information for realistic vocational and educational planning; adjustments in vocational-educational program; occupational placement and adjustment; follow-up procedures.

VoEd **470 Technical Competence III** (1-12 cr, max 12). See VoEd 270. Prereq: enrollment in the final semester of the degree program in vocational teacher education.

VoEd **471 Practicum: Vocational Education Teaching** (3-10 cr, max 10). Secondary majors are reqd to enroll for 10 cr. Supervised teaching in approved vocational programs at secondary schools or area vocational-technical schools. Graded P/F. Prereq: ED 314, or VoEd 426, 472, GPA of 2.50, and perm of dept. (Submit application via director of vocational teacher and adult education to director of clinical experiences in teacher education.)

VoEd **472 Vocational Education Methods** (3 cr). Selection and application of appropriate teaching methods; emphasis on demonstration, lecture, problem solving methods, learning activity packages, and instructional media and technology.

VoEd **480 Advanced Technical Competence** (1-6 cr, max 6). Experiences to enable the individual to gain depth in technical competency beyond the basic certification requirements, and to maintain skills in harmony with current industrial practice. Prereq: perm.

VoEd **493 Teaching Marketing Education** (3 cr). See BuEd 493.

VoEd **494 Marketing Education Materials** (2 cr). See BuEd 494.

VoEd **495 Supervising DECA Programs** (2 cr). See BuEd 495.

VoEd **496 Directed Work Experience** (1-3 cr, max 9). See BuEd 496.

VoEd **497** (s) **Practicum** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

VoEd **499** (s) **Directed Study** (cr arr). Prereq: perm.

VoEd **500 Master's Research and Thesis** (cr arr).

VoEd **501** (s) **Seminar** (cr arr). Prereq: perm.

VoEd **502** (s) **Directed Study** (cr arr). Prereq: perm.

VoEd **503** (s) **Workshop** (cr arr). Prereq: perm.

VoEd **504** (s) **Special Topics** (cr arr). Prereq: perm.

VoEd **505 Professional Development** (cr arr). See VoEd J405/J505.

VoEd **506** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

VoEd **507 Issues in Vocational and Adult Education** (3 cr). Philosophies, objectives, trends, research, organizational patterns, and governmental relationships for vocational and adult education programs.

VoEd **512 Classroom Management and Student Motivation** (2 cr) (C). Techniques and strategies to motivate student interest and encourage learning.

VoEd **514 Career Development and Lifestyle Planning** (3 cr). See Coun 514.

VoEd **515 Instructional Strategies** (3 cr). Principles, concepts, aims and applications of program and teaching strategies.

VoEd **518 Learning Styles** (3 cr). See VoEd J418/J518.

VoEd **524 Issues in Marketing Education** (3 cr). See BuEd 524.

VoEd **526 Analysis and Curriculum Development in Vocational and Adult Education** (3 cr). Teaching of occupational analysis; development of competency-based curriculum; selection and organization of instructional materials.

VoEd **543 Administration and Supervision in Vocational Education** (3 cr). Same as ITED 543. Theory and practice of administering and supervising vocational education programs at all levels.

VoEd **551 Principles and Philosophy of Vocational Education** (3 cr). See VoEd J351/J551.

VoEd **555 Program Evaluation in Vocational Education** (3 cr). Principles and procedures used in the evaluation of vocational programs.

VoEd **560 Theories of Vocational Choice** (3 cr). See Coun 560.

VoEd **564 Special Needs Communication Skills** (3 cr). Development of communication skills for use in mainstreaming handicapped and disadvantaged vocational students; makes use of simulations.

VoEd **566 Classroom Counseling Techniques and Strategies** (3 cr). Provides teachers with basic knowledge of counseling techniques for use in classroom and in individual meetings with students; required class for those seeking special needs certificate.

VoEd **570 Principles and Concepts of Research** (3 cr). Same as AdEd 570. Reasons and rationale for quantitative analyses; assumptions needed for selecting an analytical strategy.

VoEd **571 Accessing, Organizing, and Synthesizing Data** (3 cr). Same as AdEd 571. Uses of computer-based statistics packages, document retrieval services, and text-editing systems in research. Prereq: Stat 251 or perm.

VoEd **581 Theory, Practices, and Challenges of Leadership** (3 cr). Same as AdEd 581. Analysis and study of leadership of the human resource in organizations; theories, styles, and methods of effective leadership developed from past leaders blended with current models of leadership.

VoEd **582 Peer Coaching and Supervision for Educators** (2 cr) (C). Observation techniques, conferencing, and feedback skills; structuring peer coaching programs.

VoEd **597** (s) **Practicum** (cr arr). Application of theories and techniques; supervised field experiences in selected settings. Graded P/F. Prereq: perm.

VoEd **598** (s) **Internship** (cr arr). Supervised experience in teacher education, administration, supervision, or ancillary services in vocational education. Graded P/F. Prereq: perm.

VoEd **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

VoEd **600 Doctoral Research and Dissertation** (cr arr).

Wildlife Resources

George W. LaBar, Head, Dept. of Fish and Wildlife Resources (105 FWR Bldg. 83844-1136; phone 208/885-6434).

PREREQUISITE: Courses in this subject field numbered above 299 are not open to any undergraduate student who is on academic probation.

WLF **102 The Wildlife Profession** (1 cr). Overview of the field of wildlife conservation including kinds of professional positions, duties of wildlifers, employment opportunities, and educational preparation.

WLF **200** (s) **Seminar** (cr arr). Prereq: perm.

WLF **203** (s) **Workshop** (cr arr). Prereq: perm.

WLF **204** (s) **Special Topics** (cr arr). Prereq: perm.

WLF **206** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

WLF **221 Natural Resources Ecology** (3 cr). Principles of plant and animal ecology with emphasis on concepts applied in natural resources; includes interactions between organisms and their physical environment, evolutionary processes, populations, communities, energy flow and ecosystems, and conservation biology. Recommended preparation: Biol 202 and 203. Prereq: Biol 100 or 201, or perm.

WLF **290 Principles of Wildlife Biology** (2 cr). Application of biological knowledge and ecological principles to management of wildlife populations and their habitats with emphasis on integrating wildlife management into other land use practices in wildland environments.

WLF **299** (s) **Directed Study** (cr arr). Prereq: perm.

WLF **301 Wildland Field Ecology I** (1 cr). Introduction to field ecology; the rationale for and importance of studying terrestrial, aquatic, and human ecosystems; practical experience with tools and skills used to measure wildland ecosystem processes. One 5-hr lab a wk. Prereq or coreq: For/RRT/Soc 235 and For/Rnge/WLF 221.

WLF **302 Wildland Field Ecology II** (2 cr). Field studies of ecological and socio-political processes in terrestrial, aquatic, and human ecosystems at individual, population, community, landscape, regional, and global scales; application of ecological principles to integrated natural resource management. Two weeks all-day lec/lab immediately following spring semester; overnight field excursions required.

WLF **305 Field Research in Wilderness Ecology** (3 cr). Same as RRT 305. Students assist wilderness scientists in current wilderness research conducted from UI Wilderness Field Station, located at Taylor Ranch in the heart of the Frank Church River of No Return Wilderness of central Idaho; field work augmented by lectures and discussions with wilderness scientists and managers, and assigned readings; three-week summer course. Prereq: general ecology or perm.

WLF **314 Wildlife Ecology** (3 cr). Application of principles of ecology to conservation and management of wildlife in natural and altered habitats. Two lec and one lab a wk; three days of field trips. Prereq: WLF/For/Rnge 221 or perm.

WLF **396 Wilderness Research Internship** (3 cr). Same as RRT 396. Nine-week summer internship at UI Wilderness Field Station, located at Taylor Ranch in the heart of the Frank Church River of No Return Wilderness of central Idaho; research honorarium awarded; lodging and transportation to field station provided. Enrollment limited to 2-3 students based on available funding. Prereq: competitive selection by faculty committee based on research proposal, GPA, and resume; junior standing.

WLF **398** (s) **Renewable Natural Resources Internship** (cr arr). Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F. Prereq: perm of dept.

WLF **401** (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by advanced students under faculty supervision. Graded P/F. Prereq: perm.

WLF **403** (s) **Workshop** (cr arr). Prereq: perm.

WLF **404** (s) **Special Topics** (cr arr). Prereq: perm.

WLF **406** (s) **Study Abroad** (cr arr). Prereq: perm of dept.

WLF **WS419** (s) **Topics in Natural Resource Sciences** (1-3 cr, max 9). WSU NATRS 419.

WLF **440 Conservation Biology** (2 cr). Patterns of biological diversity; factors producing changes in diversity; values of diversity; management principles applied to small populations, protected areas, landscape linkages, biotic integrity, restoration, legal issues, and funding sources. Prereq: perm of dept.

WLF **441 Wildlife Behavioral Ecology and Management** (2 cr). Principles, methodology, and concepts of wildlife behavior and social organization applied to the study and management of wildlife populations. One 2-day field trip. Prereq: WLF 314, Zool 478, or perm.

WLF **442 Wildlife Management** (4 cr). Review of social and biological context for current practice of wildlife management. Three lec and one lab a wk; two days of field trips. Prereq: WLF 314, Bot 241, Zool 482 and 483, and WLF 448, or perm.

WLF **ID445 Nongame Management** (2 cr). WSU Zool 445. Review of principles, methodology, and concepts applied to management and conservation of nongame wildlife in relation to current land-use practices. Prereq: Zool 482, 483, or perm.

WLF **446 Diseases of Wild Birds and Mammals** (2 cr). Alt/yrs. Same as VS 446 and Fish 446. Epidemiology, pathology, treatment, and control. Prereq: perm.

WLF **J447/J547 Predator Ecology and Management** (3 cr). Alt/yrs. Ecology of predators and predator-prey systems with emphasis on mammalian species, discussion of predation theory and contributions of field studies to understanding the role of predation in natural and altered communities; human-predator conflicts and resolution. Additional projects/assignments reqd for grad cr. One 3-day field trip.

WLF **448 Fish and Wildlife Population Ecology** (4 cr). Attributes, natality, mortality, growth forms, fluctuations, and regulation of fish and wildlife populations. Three lec and one lab a wk. Prereq: Stat 251, course in vertebrate ecology.

WLF **470 Interdisciplinary Natural Resource Planning** (3 cr). Land use planning and decision-making theories, legislation and techniques applied to natural resource case studies from public and private sector, including impact assessment, creation and valuation of alternatives, and public involvement. Two hrs of lec, 3 hrs of lab, and 1 hr of recitation a wk; one 1-day field trip. Prereq: senior standing, For/RRT/Soc 235, For/Rnge/WLF 221, For/Rnge/ForP/RRT/WLF/Fish 302; and four of the following: ForP 250, Rnge 251, For 270, WLF 290, Fish 290, RRT 287.

WLF **489 Personalities and Philosophies in Conservation** (2 cr). See RRT 489.

WLF 493 Environmental Law (2 cr). Same as Rnge 493. Laws governing resource administration and environmental impacts. Prereq: senior standing.

WLF **495 Wildlife Seminar** (1-2 cr). Discuss integrating biological, social, political, economic, and philosophic aspects of wildlife problems.

WLF **497 Senior Thesis** (1-3 cr, max 6). Open only to majors in wildlife resources. Preparation of thesis, exhibition, video, computer program, multimedia program, or other creative presentation based on research conducted under the guidance of a faculty mentor. Prereq: cumulative GPA of at least 3.5 in all college courses, completion of at least 90 credits, and permission of a faculty mentor.

WLF **499** (s) **Directed Study** (cr arr). For the individual student; conferences, library, field, or lab work. Prereq: senior standing, GPA 2.5, and perm.

WLF **500 Master's Research and Thesis** (cr arr).

WLF **501** (s) **Seminar** (cr arr). Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Prereq: perm.

WLF **502** (s) **Directed Study** (cr arr). Prereq: perm.

WLF **503** (s) **Workshop** (cr arr). Selected topics in the conservation and management of natural resources. Prereq: perm.

WLF **504** (s) **Special Topics** (cr arr). Prereq: perm.

WLF **515 Advanced Topics in Conservation Biology** (2 cr). Development of a depth of understanding of the basic principles of conservation biology through study of case histories of endangered species recovery efforts; political as well as biological and economic aspect of recovery efforts through a series of lectures and discussions with exposure to new developments in the fast evolving field of conservation biology; emphasis on issues with which professors or visiting lecturers have personal research and experience.

WLF **WS519** (s) **Advanced Topics in Natural Resources** (1-3 cr, max 6). WSU NATRS 519.

WLF **520 Human Dimensions of Wildlife Management** (2 cr). Exploration of elements involved in the management of wildlife for nonconsumptive activities, impacts of such activities on wildlife, the role of national parks and protected areas in providing wildlife viewing opportunities, and public attitudes toward wildlife species.

WLF **541 Advanced Population Biology** (2 cr). Alt/yrs. Readings and discussion of current theories of population control, their biological basis, and applications to wildlife populations. Prereq: WLF 448 or perm.

WLF **542 Waterfowl Management** (3 cr). Alt/yrs. Ecology and management of species using wetland habitats. Lecture-discussion periods, field labs; three days of field trips. Prereq: ecology, population dynamics, and aquatic plants.

WLF **543 Fish and Wildlife Population Analysis** (3 cr). Alt/yrs. Quantitative analysis of fish and wildlife habitat, diet, harvest, population density, survival, and natality data; development and application of population models in fish and wildlife management. Two lec and 3 hrs of lab a wk. Prereq: WLF 448, Stat 401 and CS 112 or perm.

WLF **544 Large Mammal Ecology** (3 cr). Readings and discussion on large mammal management and ecology. One 3-hr lec a wk; two days of field trips. Prereq: WLF 442 or perm.

WLF **545 Wildlife Habitat Ecology** (2 cr). Alt/yrs. Reading and discussion on synecological relationships of wildlife habitats. Two days of field trips. Prereq: WLF 442 or perm, animal and plant ecology.

WLF **ID546 Upland Game Ecology** (2 cr). Alt/yrs. WSU NATRS 546. Ecology and management of forest and rangeland wildlife species. Three days of field trips. Prereq: perm.

WLF **547 Predator Ecology and Management** (3 cr). See WLF J447/J547.

WLF **WS548 Evolutionary Ecology** (3 cr). WSU Zool 548.

WLF **ID555 Statistical Ecology** (3 cr). Same as Stat 555. WSU Stat 555. Alt/yrs. Stochastic models in ecological work; discrete and continuous statistical distributions, birth-death processes, diffusion processes; applications in population dynamics, population genetics, ecological sampling, spatial analysis, and conservation biology. Prereq: Math 451 or perm.

WLF **WS588 Advanced Topics in Wildlife** (1-3 cr, max 10). WSU NATRS 588.

WLF **597** (s) **Practicum** (cr arr). Prereq: perm.

WLF **598** (s) **Internship** (cr arr). Prereq: perm.

WLF **599** (s) **Research** (cr arr). Research not directly related to a thesis or dissertation. Prereq: perm.

WLF **600 Doctoral Research and Dissertation** (cr arr). Prereq: admission to the doctoral program in "forestry, wildlife and range sciences" and perm of dept.

Women's Studies

Joan M. West, Coordinator, Women's Studies Program (308 Admin. Bldg. 83844-3174; phone 208/885-7866).

WmSt **201 Women, Culture, and Society: Introduction to Women's Studies** (3 cr). Survey of and introduction to the study of women's lives; thematic examination of the diversity of women's experiences in families, at work, with the law, in health care, in literature, in the media, in language; exploration of differences and similarities, including ethnicity, sexuality, class, and age.

Zoology

Arthur W. Rourke, Chair, Dept. of Biological Sciences (252 Life Sc. Bldg. 83844-3051; phone 208/885-6280).

Zool **120 Human Anatomy** (4 cr) (Zool 119). Study of the skeletal, muscular, nervous, circulatory, respiratory, urinary, digestive, endocrine, and reproductive systems of the human body with primary emphasis on anatomy; lab consists of studying human gross anatomy models and prosected cadavers. Three lec and one 3-hr lab a wk.

Zool **121 Human Physiology** (4 cr) (Zool 119). Study of the basic physiology of the skeletal, muscular, nervous, circulatory, respiratory, urinary, digestive, endocrine, and reproductive systems of the human body. Three lec and one 3-hr lab a wk. Prereq: Zool 120.

Zool **202 General Zoology** (4 cr). See Biol 202.

Zool **324 Comparative Vertebrate Anatomy** (4 cr). General vertebrate anatomy and evolutionary changes in organ systems. Two lec and two 3-hr labs a wk. Prereq: Biol 202 and junior standing.

Zool **398** (s) **Internship** (1-3 cr, max 3). Supervised internship in professional biological, non-university settings, integrating academic study with work experience; requires formal written plan of activities to be approved by academic adviser and department chair before engaging in the work; a final written report will be evaluated by on-campus faculty. Graded P/F. Prereq: perm.

Zool **ID-J411/ID-J511 Comparative Vertebrate Reproduction** (3 cr). WSU Zool 451/551. Physiology of major events in reproductive cycles of vertebrates with emphasis on mammals. Cr earned in Zool 511 by completion of additional reading in journals, take-home exam with each hr exam, and term paper. Prereq: Biol 202.

Zool **J414/J514 Cell Physiology** (3 cr). Experimental investigation of cells. Cr earned in Zool 514 by completion of research proposal. Prereq: organic chemistry, MMBB 380, and Biol 201; Biol 202 recommended.

Zool **J417/J517 Endocrine Physiology** (3 cr). See AVS J451/J551.

Zool **J423/J523 Comparative Vertebrate Physiology** (4 cr). Comparative physiology of the major organ systems found in vertebrates. Credit earned in Zool 523 by completion of additional projects/assignments. May involve some evening exams. Prereq: Biol 202 and organic chemistry.

Zool **ID427 Vertebrate Histology and Organology** (4 cr). WSU Zool 421. Microscopic anatomy of tissues and major mammalian organs. Two lec and two 3-hr labs a wk. Prereq: Zool 120 or Biol 202.

Zool **435 Limnology** (4 cr). See Fish 415.

Zool **J472/J572 Developmental Biology** (3 cr). Analysis of developmental and regulatory mechanisms at cellular and molecular level during embryogenesis. Cr earned in Zool 572 by completion of additional reading, take-home exam, and term paper. Prereq: Biol 202.

Zool **473 Comparative Embryology Lab** (1 cr). Descriptive embryology of a number of organisms with emphasis on amphibians, birds, and mammals. One 3-hr lab a wk. Prereq or coreq: Zool J472/J572.

Zool **478 Animal Behavior** (3 cr). Evolution, causation, development, and function of behavior in vertebrates and invertebrates. Prereq: Biol 202.

Zool **481 Ichthyology** (4 cr). Same as Fish 411. Anatomy, taxonomy, physiology, distribution, and ecological relationships of fishes. Three lec and one 3-hr lab a wk; one half-day field trip. Prereq: Biol 202.

Zool **482 Natural History of Birds** (3 cr). Two lec and one 3-hr lab a wk; two 1-day field trips. Prereq: Biol 202.

Zool **483 Natural History of Mammals** (3 cr). Two lec and one 3-hr lab a wk. Prereq: Biol 202.

Zool **J484/J584 Invertebrate Zoology** (4 cr). Morphology of freshwater, marine, and terrestrial invertebrates and phylogeny of major groups. Cr earned in 584 by completion of extra project requiring a report. Two lec and two 2-hr labs a wk; one 6-day or two 2-day field trips. Prereq: Biol 202.

Zool **494 Insect Anatomy and Physiology** (4 cr). See Ent 484.

Zool **497 Practicum in Physical Therapy** (1 cr, max 4). Minimum of two hrs a wk of practical experience in a PT clinic. Graded P/F. Prereq: jr standing in pre-PT or related studies and perm of UI allied health adviser.

Zool **499** (s) **Directed Study** (cr arr). Prereq: perm.

Zool **500 Master's Research and Thesis** (cr arr).

Zool **501** (s) **Seminar** (cr arr). Prereq: perm.

Zool **502** (s) **Directed Study** (cr arr). Prereq: perm.

Zool **503** (s) **Workshop** (cr arr). Prereq: perm.

Zool **504** (s) **Special Topics** (cr arr). Prereq: perm.

Zool **ID505 Generation, Degeneration, and Regeneration in Nervous System** (2 cr). WSU Zool 505.

Zool **WS510 Domestic and Exotic Animal Behavior** (2 cr). WSU VM/Neuro 510.

Zool **ID511 Comparative Vertebrate Reproduction** (3 cr). See Zool J411/J511.

Zool **514 Cell Physiology** (3 cr). See Zool J414/J514.

Zool **517 Endocrine Physiology** (3 cr). See AVS J451/J551.

Zool **523 Comparative Vertebrate Physiology** (4 cr). See Zool J423/J523.

Zool **WS543 Ion Channels** (3 cr). WSU Neuro 543.

Zool **WS544 Neurobiology of Drug Abuse** (3 cr). WSU Neuro 544.

Zool **572 Developmental Biology** (3 cr). See Zool J472/J572.

Zool **584 Invertebrate Zoology** (4 cr). See Zool J484/J584.

Zool **600 Doctoral Research and Dissertation** (cr arr).



Faculty

Robert A. Hoover, President; George M. Simmons, Interim Provost; William L. Voxman, Chair of the Faculty Council (1996-97); W. Kent Hackmann, Secretary of the Faculty.

This list was compiled December 1996. Off-campus personnel are identified with an asterisk (*). The date following a name indicates the beginning of service at the university. When two dates are given, the second, in parentheses, is the date of promotion to the rank shown.

*RICHARD D. ABBOTT, 1991, Affiliate Assistant Professor of Chemical Engineering, Moscow; B.S., 1972, Montana State; M.S., 1974, Ph.D., 1983, Idaho.

*ERNEST D. ABLES, 1973, Professor Emeritus of Wildlife Resources (Associate Dean for Academics and Continuing Education, College of Forestry, Wildlife and Range Sciences, 1974-82, 1990-93; Head, Department of Fish and Wildlife Resources, 1982-84, 1985-89, 1994-95; Acting Dean, 1984-85); B.S., 1961, Oklahoma State; M.S., 1964, Ph.D., 1968, Wisconsin. Emeritus since 1996 (now residing in Troy).

*BARBARA B. ABO, 1976 (1995), Extension Professor and Ada County Extension Educator—4-H/Youth, Boise; B.S., 1972, Wisconsin; M.S., 1975, Iowa State.

TERRY P. ABRAHAM, 1984 (1991), Head, Special Collections and Archives, University Library, with rank of Professor; B.A., 1965, Washington; M.F.A., 1968, Washington State; M.L.S., 1970, Oregon.

DAVID L. ADAMS, 1971 (1975), Professor of Forest Resources (Head, Department of Forest Resources, 1979-87); B.S., 1959, Oklahoma State; M.F., 1961, Idaho; Ph.D., 1969, Colorado State.

*DONALD F. ADAMS, 1978, Affiliate Professor of Chemistry, Pullman, Wash.; B.S., 1941, M.S., 1943, Washington State.

DOUGLAS Q. ADAMS, 1972 (1981), Professor of English; Department Chair, 1996- (Secretary of the Faculty, 1992-96); A.B., 1968, A.M., 1971, Ph.D., 1972, Chicago.

GAIL H. ADELE, 1974 (1985), Professor of Mathematics; A.B., 1962, M.A., 1963, Indiana; Ph.D., 1968, Michigan State.

WUDNEH ADMASSU, 1992 (1995), Associate Professor of Chemical Engineering; B.S., 1979, Oregon State; M.S., 1980, Ph.D., 1984, Idaho.

*STEPHEN B. AFFLECK, 1988, Affiliate Associate Professor of Chemical Engineering, Boise; B.S., 1960, Utah; M.S., 1973, Ph.D., 1980, Iowa State.

KATHERINE G. AIKEN, 1984 (1994), Associate Professor of History; B.A., 1972, Idaho; M.A., 1974, Oregon; Ph.D., 1980, Washington State.

*RICHARD K. ALBANO, 1991, Affiliate Assistant Professor of Physics, Idaho Falls; B.S., 1976, Idaho State; M.S., 1980, Alaska; Ph.D., 1989, California (Los Angeles).

CAROL PADGHAM ALBRECHT, 1989, Assistant Professor of Music (oboe, music history); B.A., 1974, M.Mus., 1980, North Texas State.

GARY C. ALEXANDER, 1992, Assistant Professor of Educational Administration; B.S., 1974, M.S., 1975, M.S., 1977, Bemidji State; Ph.D., 1991, Minnesota (Minneapolis).

*ROBERT E. ALLAN, 1976, Affiliate Professor of Plant Science, Pullman, Wash.; B.S., 1952, Iowa State; M.S., 1956, Ph.D., 1958, Kansas State.

*ROBERT C. ALLDAFFER, 1955 (1983), Extension Professor Emeritus; B.S.Ag., 1950, Idaho. Emeritus since 1983 (now residing in Soda Springs).

*CHARLES A. ALLEN, 1986, Affiliate Professor of Chemistry, Idaho Falls; B.S., 1962, Ottawa (Kansas); Ph.D., 1969, Oregon State.

*STEWART D. ALLEN, 1987, Affiliate Assistant Professor of Resource Recreation and Tourism, Bend, Oreg.; B.A., 1976, Utah; M.A., 1978, Claremont Graduate School; Ph.D., 1980, Montana.

*CHRIS M. ALLISON, 1992, Affiliate Assistant Professor of Mechanical Engineering, Idaho Falls; B.S.M.E., 1972, M.S.M.E., 1973, Wyoming; Ph.D., 1987, Idaho.

JAMES ALVES-FOSS, 1991, Assistant Professor of Computer Science; B.S., 1987; M.S., 1989, Ph.D., 1991, California (Davis).

DON A. AMOS, 1963, Business and Real Estate Manager Emeritus; B.S.Bus., 1952, Idaho. Emeritus since 1991 (now residing in Moscow).

JAMES K. AMPOFO, 1992, Affiliate Associate Professor of Entomology, Tanzania; B.Sc., 1972, Ghana; Ph.D., 1981, Queensland, Australia.

DOYLE E. ANDEREGG, 1967, Professor of Biology; Associate Dean, College of Letters and Science, 1989-; Management Information Specialist (Assistant Dean, College of Letters and Science, 1981-89; Head, Department of Biological Sciences, 1967-75); B.Sc., 1952, M.S., 1957, Ph.D., 1959, Ohio State.

*BRUCE C. ANDERSON, 1978 (1984), Professor of Pathology, Caldwell; B.S., 1965, D.V.M., 1965, Ph.D., 1977, California (Davis).

CLIFTON E. ANDERSON, 1972 (1977), Associate Extension Professor of Agricultural Information; Associate Agricultural Editor; B.S., 1947, Wisconsin; M.A., 1954, California (Berkeley).

ERIK T. ANDERSON, 1987 (1990), Assistant Extension Professor of Agricultural Information; Associate Agricultural Editor; B.S., 1983, Idaho; M.A., 1985, Wisconsin (Madison).

*GUY R. ANDERSON, 1946 (1968), Professor of Bacteriology and Director of the WAMI Medical Education Program Emeritus; B.S.Ag., 1942, M.S.Ag., 1947, Idaho; Ph.D., 1956, Washington State. Emeritus since 1984 (now residing in Moscow).

*JAMES H. ANDERSON, 1989, Affiliate Professor of Geology, Fairbanks, Alaska; B.S., 1964, Washington (Seattle); Ph.D., 1970, Michigan State.

JANICE CAPEL ANDERSON, 1985 (1994), Associate Professor of Philosophy and Religious Studies; B.A., 1974, Macalester; M.A., 1975, Ph.D., 1985, Chicago.

KIMBERLY A. ANDERSON, 1992, Adjunct Assistant Professor of Food Science and Toxicology; Inorganic Group Leader, UI Analytical Sciences Laboratory; B.S., 1981, Oregon; M.S., 1985, Boise State; Ph.D., 1989, Washington State.

MARK D. ANDERSON, 1982 (1990), Professor of Law; B.A., 1973, Macalester; J.D., 1977, Chicago.

MICHAEL J. ANDERSON, 1989 (1995), Associate Professor of Mechanical Engineering; B.S.M.E., 1983, Oregon State; M.S.M.E., 1987, Ph.D., 1989, Washington State.

*MOSELLE W. ANDERSON, 1967 (1977), Extension Professor Emerita; B.A., 1967, Idaho State. Emerita since 1977 (now residing in Pocatello).

*TONY J. ANDERSON, Assistant Professor of Mechanical Engineering, Boise; B.S., 1983, Utah State; M.S., 1987, Arizona State; Ph.D., 1993, Virginia Polytechnic.

*GRAHAM ANDREWS, 1987, Affiliate Assistant Professor of Chemical Engineering, Idaho Falls; B.S., 1969, Imperial College (London); M.S., 1975, Ph.D., 1979, Syracuse.

*WILLIAM A. APEL, 1993, Affiliate Professor of Microbiology, Molecular Biology and Biochemistry, Idaho Falls; B.A., 1973, M.S., 1976, Ph.D., 1978, Ohio State.

AHMED A. ARAJI, 1968 (1977), Professor of Agricultural Economics (production economics); Agricultural Economist; B.Sc., 1962, M.Sc., 1964, Nebraska; Ph.D., 1968, Missouri.

*ELDON D. ARCHAMBAULT, 1971, Professor Emeritus of Education; B.A., 1945, Northern Iowa; M.A., 1948, Ph.D., 1967, Iowa. Emeritus since 1983 (now residing in Port Angeles, Wash.).

*JILL E. ARMSTRONG, 1989, Affiliate Associate Professor of Family and Consumer Sciences, Pullman, Wash.; B.S., 1978, M.S., 1981, North Carolina State; Ph.D., 1985, Rhode Island.

*TERRY R. ARMSTRONG, 1969 (1975), Professor of Education and Adjunct Professor of Resource Recreation and Tourism Emeritus (Coordinator of Student Services and Executive Assistant to the President, 1978-89); B.S., 1958, Southern Mississippi; M.Nat.Sc., 1964, Ed.D., 1969, Idaho. Emeritus since 1995 (now residing in Moscow).

ROBERT C. ASH, 1995, Assistant Professor of Operations Management; B.S., 1967, Stanford; M.B.A., 1976, Ph.D., 1995, Arizona State.

*ROGER O. ASHLEY, 1990, Associate Extension Professor and Bonneville County Extension Educator—Crops/Horticulture, Idaho Falls; B.S., 1975, Michigan State; M.S., 1989, Arizona.

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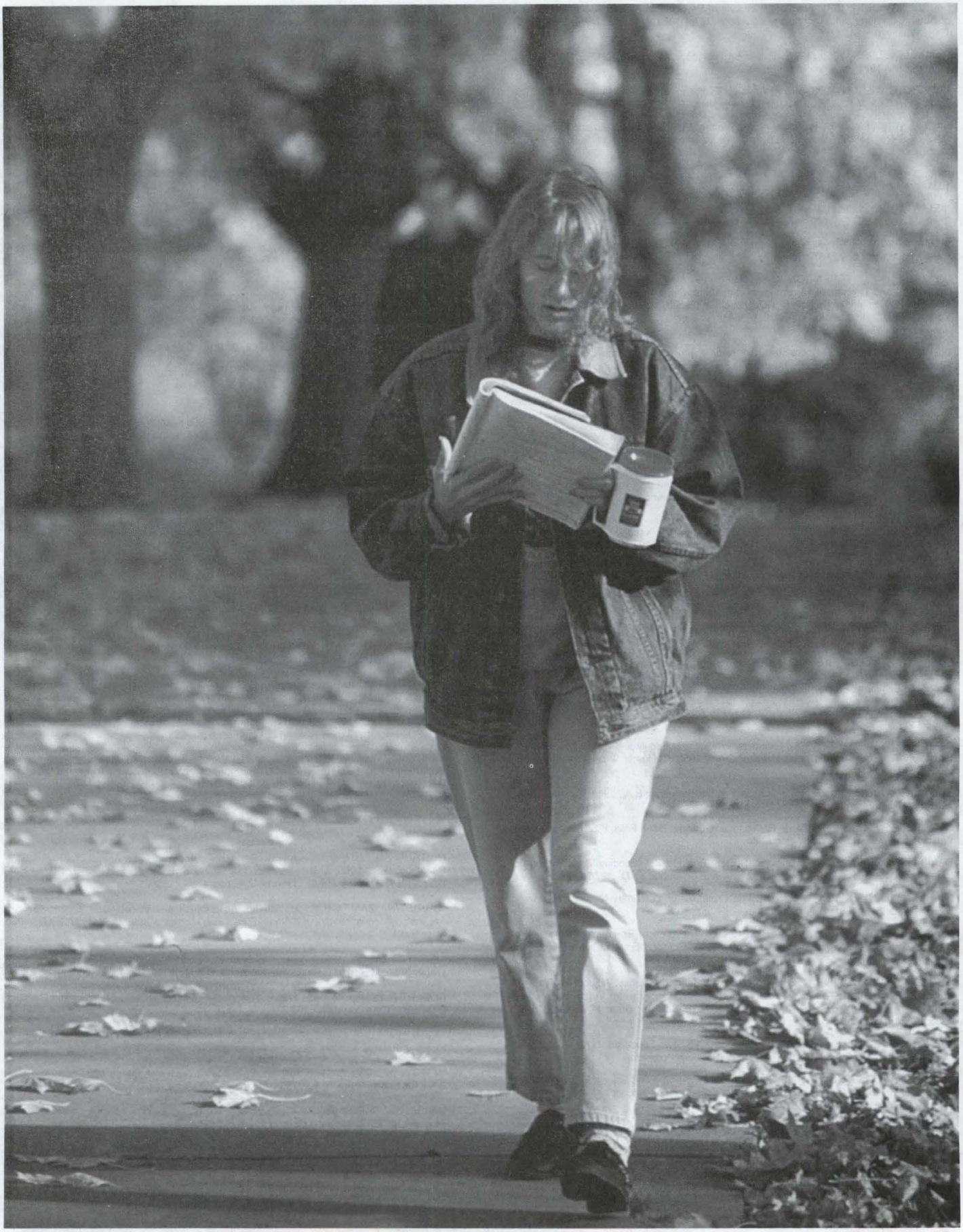
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Correspondence Directory

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Telephone: (208) 885-6111

Further information may be obtained from the following offices. On campus, dial 5 and the number listed. Off campus, dial the prefix 885 and the number listed.

Academic Matters	College in which student plans to major	——
Admission (undergraduate)	Admissions (104G Ad. Office Bldg.)	6326
Admission (graduate)	Graduate Admissions (112 Morrill Hall)	4001
Adult Education	Enrichment Program (112 Continuing Education Bldg.)	6486
Affirmative Action/Equal Opportunity	Affirmative Action (Human Resources and Purchasing Bldg.)	6591
Alumni Association	Alumni Office (Alumni Ctr.)	6154
Associated Students (student government)	Student Union Bldg.	6331
Athletics		
Intercollegiate	Athletic Department (Kibbie-ASUI Activity Ctr.)	0200
Intramurals	Campus Recreation (201 Memorial Gym.)	6381
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Child Care	Early Childhood Learning Center	6414
Computer Information	Computer Services (127 Ad. Bldg.)	2725
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Correspondence Study	Independent Study in Idaho (201 Continuing Education Bldg.)	6641
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Disabled, Services for the	Student Advisory Services (228 Univ. Classroom Ctr.)	7716
Employment (on-campus)	Student Employment Office (Student Union Bldg.)	4500
Financial Aid (scholarships, loans, work/study)	Student Financial Aid (Student Union Bldg.)	6312
General Studies	General Studies Program (112 Ad. Bldg.)	6426
Graduate Assistantships/Financial Aid	Department in which student plans to major	——
Graduate Studies	College of Graduate Studies (106 Morrill Hall)	6243
Honors Program	University Honors Program (102 Psych. Bldg.)	6147
Housing (single and married students)	Housing (Wallace Residence Ctr.)	6571
International Students	International Programs Office (223 Morrill Hall)	8984
Mathematics/Statistics Help	Mathematics and Statistics Assistance Center (7th and Line St.)	5717
Minority Assistance	Minority Student Programs (228 Univ. Classroom Ctr.)	7716
National Student Exchange	National Student Exchange Office (228 Univ. Classroom Ctr.)	7979
New Student Services	New Student Services (Student Union Bldg.)	6163
Parking Control		6424
Registration, Academic Regulations, and Procedures	Registrar's Office (104 Ad. Office Bldg.)	6731
Resident/Nonresident Status	Admissions (104G Ad. Office Bldg.)	6326
ROTC Information (Officer Education Programs)		
Air Force	Student Union Annex	6129
Army	101 Memorial Gym.	6528
Navy-Marine	Navy Bldg.	6333
Student Activities	ASUI Programs (Student Union Bldg.)	6484
Study Abroad	International Student Advising (241 Univ. Classroom Ctr.)	6757
Summer Programs	Summer Programs (112 Continuing Education Bldg.)	6237
Tutoring and Academic Assistance	Tutoring and Academic Assistance Center (Idaho and Line St.)	6307
and Student Support Services (106 Cont. Ed. Bldg.)	6746	
Veterans' Affairs	Veterans' Advising (241 Univ. Classroom Ctr.)	7979
Women's Programs	Women's Center (Journalism Bldg.)	6616



University of Idaho

Office of New Student Services
Moscow, ID 83844-4253

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