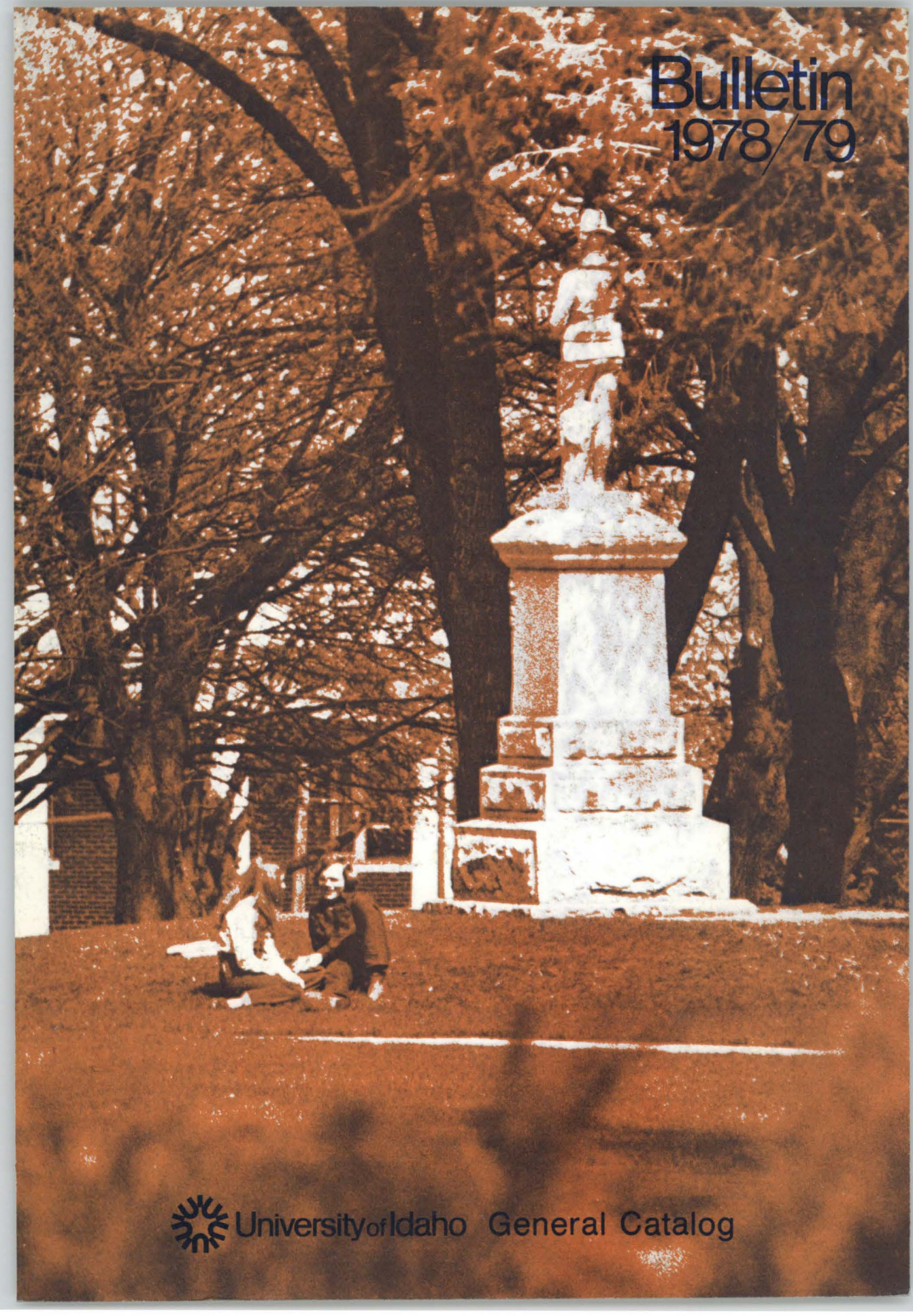

Bulletin 1978/79

University of Idaho General 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 does not discriminate on the basis of race, color, religion, national origin, sex, age, or disability, in employment or in the admission to or operation of its education programs and activities, as required by Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Executive Order 11246 as amended, the Vocational Rehabilitation Act of 1973, and other state and federal laws and regulations. Inquiries concerning the application of these regulations to the university may be directed to the university's Affirmative Action Office or to the director, Office of Civil Rights, U.S. Department of Health, Education, and Welfare.

The university is an EO/AA employer and educational institution.

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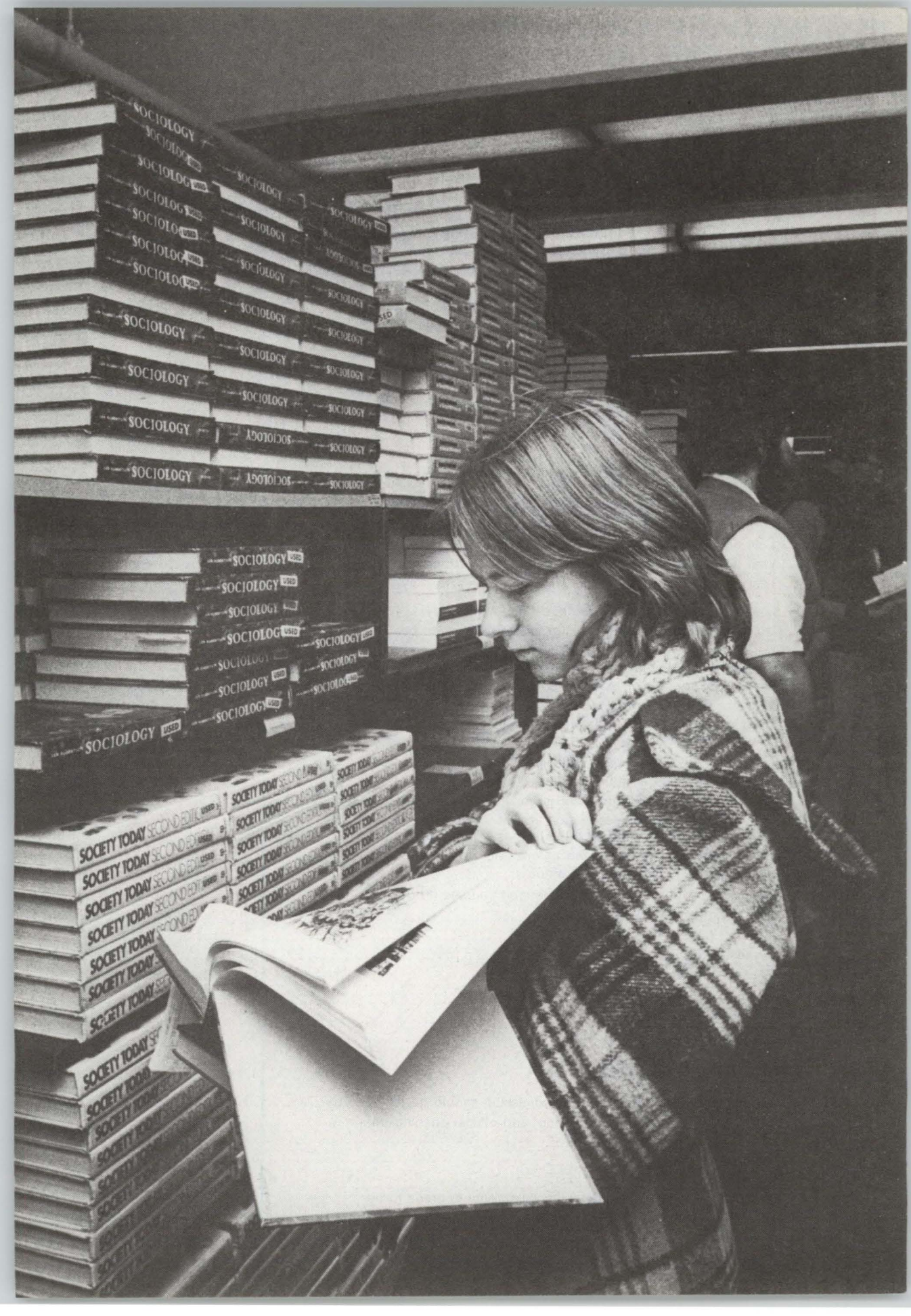
SOCIOLOGY
SOCIETY TODAY

Academic Calendar for 1978-79

Dates in this calendar are subject to change without notice; those appearing in admission and registration instructions take precedence over those in this catalog.

FALL SEMESTER 1978-79

Applications for fall-semester admission should be received by	Aug. 1
Faculty meeting (Friday, 2 p.m.)	Aug. 25
Last day of preregistration advising, and official opening date of fall semester (Monday)	Aug. 28
Registration (Tuesday)	Aug. 29
Classes begin (Wednesday)	Aug. 30
Labor Day holiday (Monday)	Sept. 4
Last day to file applications for baccalaureate degrees to be completed this semester (Monday)	Sept. 11
Last day to register without late fee (Tuesday)	Sept. 12
Last day to add courses or change course sections (Tuesday)	Sept. 12
Last day to change to or from pass-fail basis (Tuesday)	Sept. 12
Last day to change to or from audit basis (Tuesday)	Sept. 12
Last day to file applications for graduate degrees to be completed this semester (Monday)	Sept. 18
Classes WILL MEET this date (Columbus Day)	Oct. 9
Last day to remove or extend incompletes (Wednesday)	Oct. 11
Midsemester grade reports due (Monday, 1 p.m.)	Oct. 23
Classes WILL MEET this date (state holiday because Veterans' Day falls on weekend)	Nov. 10
Thanksgiving recess begins (Tuesday, 10 p.m.)	Nov. 21
Thanksgiving recess ends (Monday, 8 a.m.)	Nov. 27
Last day to withdraw from a course or from the university (Monday)	Nov. 27
Last day to file thesis/dissertation and abstract for graduate degrees to be completed this semester (Monday)	Nov. 27
Fields trips must be completed before (Monday, 8 a.m.)	Dec. 11
No-examination week (Monday-Friday)	Dec. 11-15
Last day to report grades for challenged courses (Friday)	Dec. 15
Final examinations (Monday-Friday)	Dec. 18-22
Close of fall semester (Friday, 5 p.m.)	Dec. 22
Semester grade reports due (Wednesday, 5 p.m.)	Dec. 27
Special programs sessions	Dec. 26-Jan. 12

SPRING SEMESTER 1978-79

Applications for spring-semester admission should be received by	Dec. 15
Last day of preregistration advising, and official opening date of spring semester (Monday)	Jan. 15
Registration (Tuesday)	Jan. 16
Classes begin (Wednesday)	Jan. 17
Last day to file applications for baccalaureate degrees to be completed this semester (Monday)	Jan. 29

Last day to register without late fee (Tuesday) ..... Jan. 30
Last day to add courses or change course sections (Tuesday) ..... Jan. 30
Last day to change to or from pass-fail basis (Tuesday) ..... Jan. 30
Last day to change to or from audit basis (Tuesday) ..... Jan. 30
Last day to file applications for graduate degrees to be completed this semester (Monday) ..... Feb. 5
Washington's Birthday holiday (Monday) ..... Feb. 19
Last day to remove or extend incompletes (Wednesday) ..... Feb. 28
Spring recess begins (Friday, 5 p.m.) ..... March 16
Midsemester grade reports due (Monday, 1 p.m.) ..... March 19
Spring recess ends (Monday, 8 a.m.) ..... March 26
Last day to withdraw from a course or from the university (Friday) ..... April 20
Last day to file thesis/dissertation and abstract for graduate degrees to be completed this semester (Monday) ..... April 23
Field trips must be completed before (Monday, 8 a.m.) ..... May 7
No-examination week (Monday-Friday) ..... May 7-11
Last day to report grades for challenged courses (Friday) ..... May 11
Final examinations (Monday-Friday) ..... May 14-18
Close of spring semester (Friday, 5 p.m.) ..... May 18
Commencement (Saturday) ..... May 19
Semester grade reports due (Monday, 5 p.m.) ..... May 21
Special programs sessions ..... May 21-June 8

SUMMER SESSIONS 1979

Forestry Summer Camp ..... May 21-July 13
Geology Summer Camp ..... May 28-July 6
Applications for regular eight-week summer session should be received by (Monday) ..... May 21
Memorial Day holiday (Monday) ..... May 28
Official opening date for regular eight-week session (Monday) ..... June 11
Registration (Monday) ..... June 11
Classes begin (Tuesday) ..... June 12
Classes WILL MEET this date (Saturday) ..... June 16
Classes WILL MEET this date (Independence Day) ..... July 4
Holiday in lieu of Independence Day (Friday) ..... July 6
Last day to remove or extend incompletes (Tuesday) ..... July 24
Summer sessions close (Friday, 5 p.m.) ..... Aug. 3
Special programs sessions ..... Aug. 6-24

The academic regulations and requirements in this bulletin cover the catalog year and are subject to change without notice. The catalog year begins with the official opening date of the fall semester and ends with the opening date of the succeeding fall semester.

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Regents and Administration

April 8, 1978

Board of Regents of the University of Idaho

BOARD MEMBERS

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J. Clint Hoopes, *Vice President,* Rexburg (1980*)
John W. Swartley, *Secretary,* Boise (1980*)
A. L. Alford, Jr., Lewiston (1983*)
Janet S. Hay, Nampa (1979*)
Cheryl Heiss Hymas, Jerome (1982*)
J. P. Munson, Sandpoint (1981*)
Roy E. Truby, *State Superintendent of Public Instruction,* Boise (ex officio)

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Milton Small, *Executive Director,* Boise

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Robert W. Coonrod, *Ph.D., Academic Vice President/Acting Coordinator of Research*
Sherman F. Carter, *Ph.D., Financial Vice President/Bursar*
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Warren S. Owens, *M.A.L.S., Dean of Instructional Services/Director of Libraries*
Matt E. Telin, *M.Ed., Director of Admissions/Registrar*

Major Academic Divisions

GRADUATE SCHOOL

Robert W. Coonrod, *Ph.D., Acting Dean*

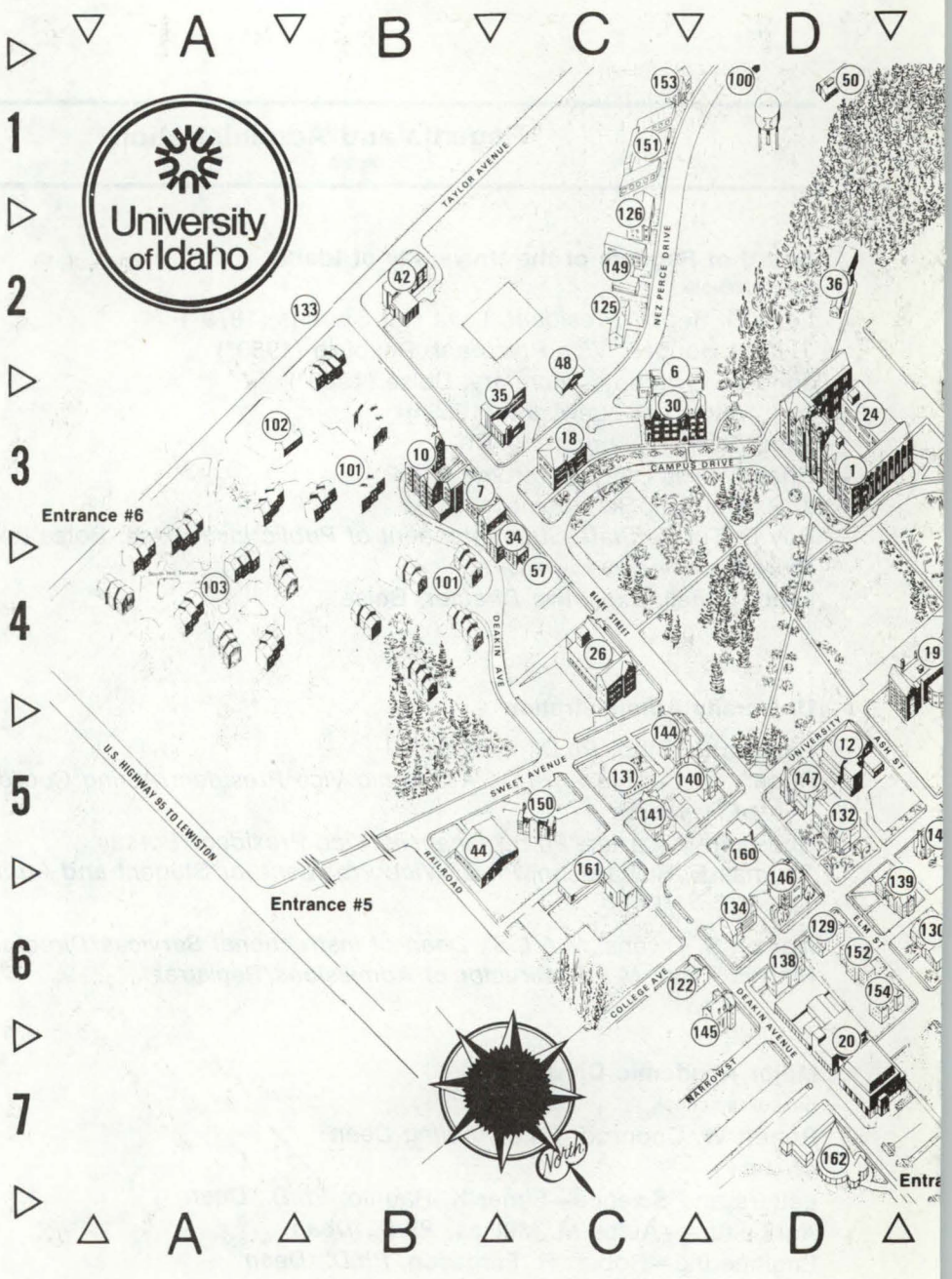
COLLEGES**

Letters and Science—Elmer K. Raunio, *Ph.D., Dean*
Agriculture—Auttis M. Mullins, *Ph.D., Dean*
Engineering—Robert R. Furgason, *Ph.D., Dean*
Law—Albert R. Menard, *J.D., Dean*
Mines and Earth Resources—Maynard M. Miller, *Ph.D., Dean*
Forestry, Wildlife and Range Sciences—John H. Ehrenreich, *Ph.D., Dean*
Education—Everett V. Samuelson, *Ed.D., Dean*
Business and Economics—John W. Knudsen, *Ph.D., Acting Dean*

UI FACULTY OF THE NORTHWEST COLLEGE OF VETERINARY MEDICINE

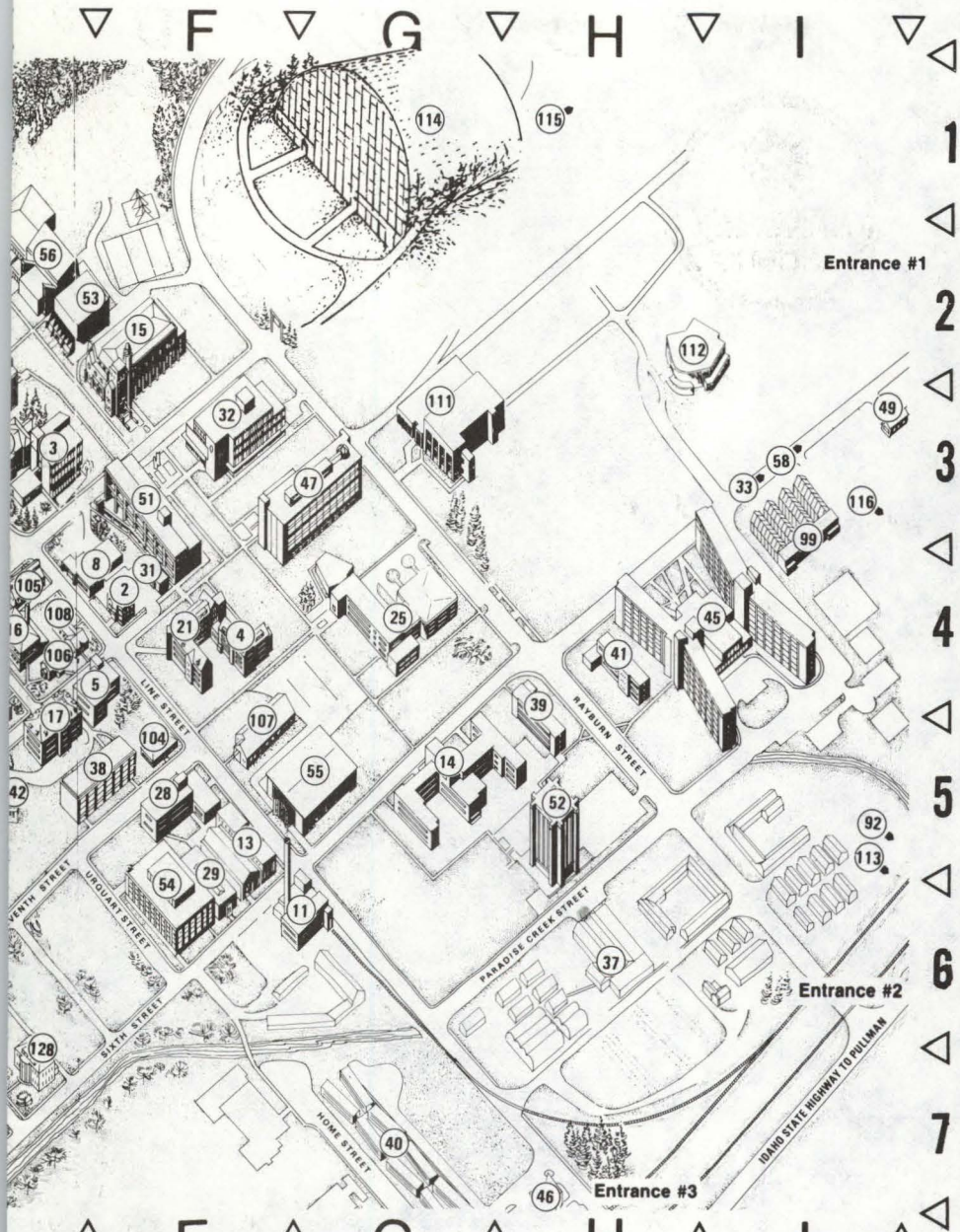
Floyd W. Frank, *Ph.D., Dean*

*Date current appointment expires.
**Colleges are listed in order of their founding.



MAP KEY

1	Administration 3D
24	Administrative Office 3D
8	Agricultural Engineering 4F
25	Agricultural Science 4G
10	Alumni Center 3B
58	Animal Research Pavillion (3I)
3	Art and Architecture 3E
22	Art and Architecture South 3E
54	Buchanan Engineering Lab 6F
102	Child Care Center 3A
2	Communication 4F
7	Continuing Education 3C
92	Dairy Research Center (5I)
43	Education 3E
	Engineering Complex 5 & 6F
49	Engineering Isotopes Lab 3I
21	Faculty Office Complex East 4F
4	Faculty Office Complex West 4F
5	Food Research Center 4F
55	Forestry 5G
13	Gauss M Engr Lab 5F
100	Golf Course (1D)
6	Graduate Art Students 3C
99	Greenhouse 3I
112	E.W. Hartung Theatre 2H
30	Home Economics 3C
48	Home Management House 2C
44	Industrial Education 5B
46	Information Center 7H
28	Janssen Engineering 5F
29	Johnson E Engr Lab 6F
108	Journalism 4E
114	Kibbie - ASUI Activity Center (Dome) 1G
111	Law 3G
32	Library 3F
19	Life Sciences 4E
113	Manis Ento Res Lab (5I)
15	Memorial Gym 2F
38	Mines 5F
17	Morrill Hall 5E
26	Music 4C
18	Music Annex (Ridenbaugh) 3C
122	Native American Center 6D
107	Navy 5F
40	Park Village 7G
104	Personnel and Purchasing 5F
37	Physical Plant 6H
47	Physical Science 3G
11	Power Plant 6G
50	President's Residence 1D
16	Psychology 4E
36	Radio-TV Center 2D
31	Small Animals Lab 4F



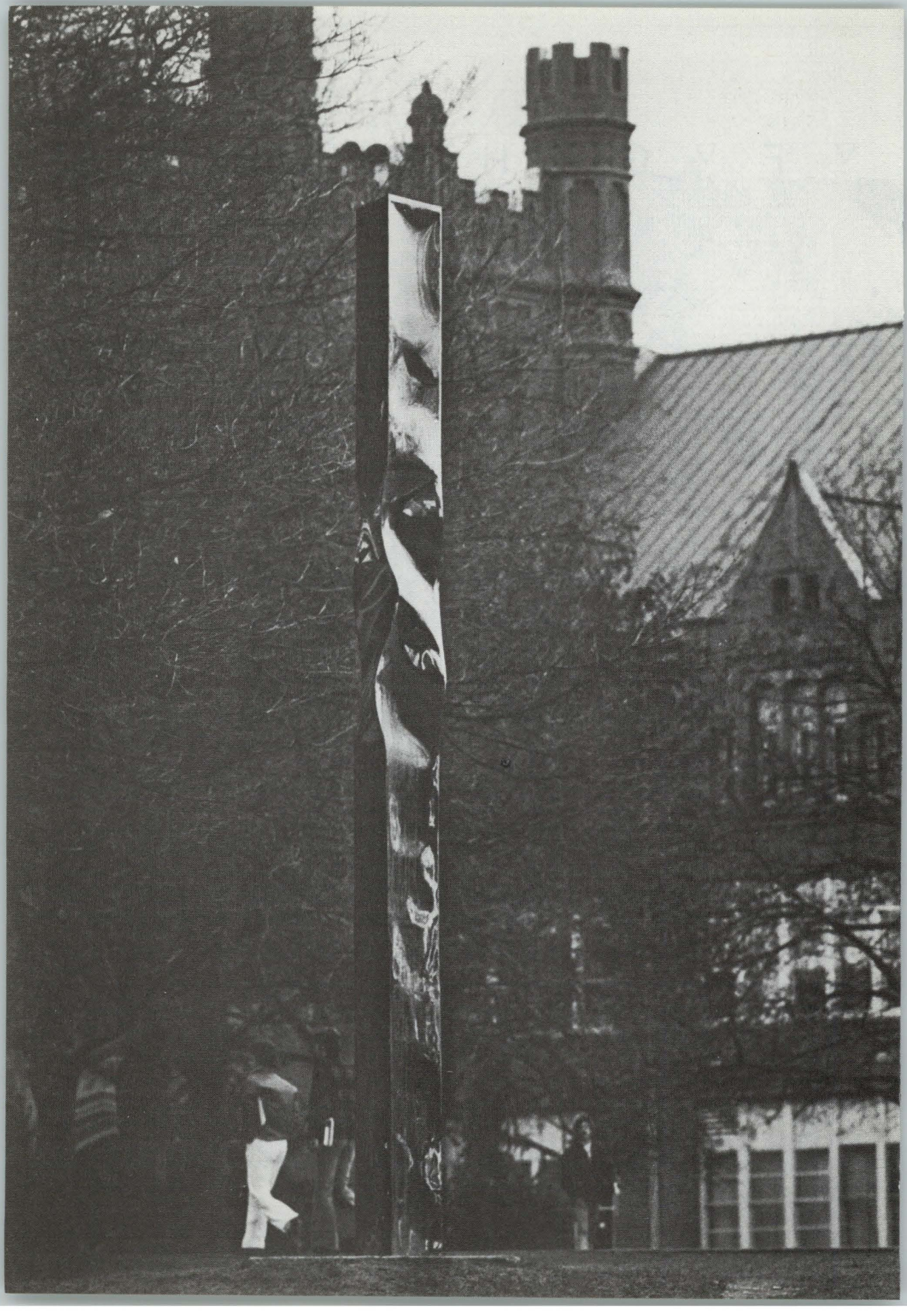
South Hill Apartments 3&4B
South Hill Ter. Apt. 4A
Student Health Service 5D
Student Union 7D
Student Union Satellite 4E
Swimming Center 2E
Talisman House 6E
Theatre Arts (U-Hut) 4E
Theatre Arts Annex 4E
Track (1H)
University Classroom Center 3F
University Gallery 5E
Veterinary Res. Lab (3I)
Women's Health Ed. 2E
Wicks Mem. Baseball Field (3I)

GIOUS INSTITUTES
Campus Christian Center 5D
LDS Institute 6C
St. Augustine's Catholic Center 7D

RESIDENCE HALLS
14-27 Gault-Upham 5G
39 McConnell 5H
41 Shoup 4H
34 Steel House 4C
42 Targhee Residence 2B
52 Theophilus Tower 5H
45 Wallace Complex 4I

SORORITIES
125 Alpha Chi Omega 2C
126 Alpha Gamma Delta 1C
127 Alpha Phi 7E
128 Delta Delta Delta 7E
129 Delta Gamma 6D
130 Gamma Phi Beta 6E
131 Kappa Alpha Theta 5C
132 Kappa Kappa Gamma 5D
133 Lambda Delta Sigma 2B
134 Pi Beta Phi 6D

FRATERNITIES
57 Alpha Kappa Lambda 4C
138 Alpha Tau Omega 6D
139 Beta Theta Pi 6D
140 Delta Chi 5D
141 Delta Sigma Phi 5C
142 Delta Tau Delta 5E
35 Farmhouse 3C
144 Kappa Sigma 5C
145 Lambda Chi Alpha 6D
146 Phi Delta Theta 6D
147 Phi Gamma Delta 5D
148 Phi Kappa Tau 5E
149 Pi Kappa Alpha 2C
150 Sigma Alpha Epsilon 5C
151 Sigma Chi 1C
152 Sigma Nu 6D
153 Tau Kappa Epsilon 1C
154 Theta Chi 6C



The University

A multipurpose institution, the University of Idaho was founded in 1889 by an act of the 15th territorial legislature of Idaho. This statute, commonly known as the university's charter, became a part of Idaho's organic law by virtue of its confirmation under article IX, section 10, of the state constitution when Idaho was admitted to the union in 1890. As provided in the territorial act and the state constitution, an appointed board of regents is vested with the ultimate authority for the government of the university; in turn, the board appoints the university president, who also serves as president of the faculty and of the several constituent faculties. The president's responsibilities include giving "general direction to the instruction and scientific investigation of the university." Under the charter, the immediate government of the university is entrusted to the faculty. The tradition of consultative and mutual responsibility among the faculty, president, and regents has continued to the present time.

When the university opened its doors, October 3, 1892, there were about 30 students and 2 professors, one of whom, Franklin B. Gault, also served as president. By 1977, the on-campus enrollment has grown to more than 7,700 students representing a broad spectrum of social and economic backgrounds. Although most of the students come from Idaho, every state and approximately 50 foreign countries are represented on campus. Since its founding, the university has granted more than 41,500 degrees.

Mission, Functions, and Objectives

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 mission, functions, and objectives of the university were redefined November 1, 1973, by the State Board of Education/Board of Regents of the University of Idaho as follows:

Mission. In the widest sense, the mission of the University of Idaho, a publicly supported, land-grant institution, is to serve the people of the state and nation as a major center of learning for the advancement, preservation, dissemination, and use of knowledge. Deriving from this multifaceted mission 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 of the University. 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: (a) 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, prepared for a lifetime of learning and equipped with a sound general education as well as the professional and technical skills needed by society; (b) 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; and (c) to make readily available to all people of the state the results of the research and the rich heritage of human culture embodied in the arts and sciences.

Unique Functions of the University. As a part of a coordinated state system of higher education that encompasses the senior institutions and the public community colleges, the university historically has had certain unique functions. Specifically, the university has the responsibility to serve as: (a) the land-grant institution for the state of Idaho, with the exclusive responsibility for instruction, research, extension, and public services in the fields of agriculture, forestry, mining, and related areas, as well as the principal responsibility in the field of engineering; (b) the chief research center for the state, and the chief center for research-oriented graduate education; (c) a principal center for professional education, operating fully accredited professional programs in architecture, chemistry, education, engineering, forestry, home economics, law, musical performance, and wildlife and range sciences, and also fulfilling the major responsibility for comprehensive programs in the preparation of public school teachers, administrators, and counselors; and (d) the state's preeminent center for comprehensive graduate programs, with responsibility for the granting of the degree of Doctor of Philosophy. Because of the unique land-grant and Ph.D.-awarding functions of the University of Idaho, its faculty members conduct research as a clearly defined professional responsibility.

Specific Objectives. As a means of attaining the broad objectives cited above, the regents and the university community have identified the following specific objectives relating to students, faculty members, the general public, and other institutions of higher education:

STUDENTS. In relation to students, the university will provide the opportunity and means of learning, along with encouragement to develop the mind. In particular, the university will: (a) maintain a teaching faculty of the greatest possible competence and variety of cultural backgrounds, of noteworthy scholarly attainments and promise, motivated to teach; (b) encourage the development and use of effective instructional and advising techniques; (c) foster unhurried personal contact between students and faculty members so that the love of learning

may be contagious; (d) keep current and improve the library, museum, laboratory and demonstration equipment, audiovisual apparatus, and collections; (e) consider the needs of students as individuals in the designing of academic programs; (f) foster an academic environment conducive to their mental, physical, and social development and well-being; and (g) provide for student participation in university affairs, both as a means of influencing policy and of gaining experience in the democratic participatory process.

FACULTY. In relation to the faculty, the university will: (a) gather into one community a group of capable and committed scholars and assure them maximum freedom of both thought and academic activity; (b) provide the facilities for their continuing study and research, and for their teaching; (c) encourage scholarly and creative output, such as publications, performances, creation of works of art, and development of new procedures and superior biological strains; (d) maintain adequate salaries and other benefits, as well as an organizational structure conducive to good faculty morale; (e) foster improvement in teaching techniques, including multidisciplinary approaches to contemporary problems; (f) encourage faculty participation in professional and civic activities; and (g) provide for the effective functioning of faculty governance in accordance with the principles set forth in the university's charter and the constitution of the university faculty.

GENERAL PUBLIC. In relation to the general public, the university will: (a) apply the benefits of knowledge by making expert faculty available to individuals or organizations for consultation or research on problems in the state, by maintaining programs of public service for northern Idaho, as well as extension and public services for the entire state in fields exclusive to the University of Idaho, and by participating in continuing education programs; (b) contribute to the cultural life of the state by such means as publications, symposia, concerts, dramatic productions, and art and museum exhibits; (c) provide for and foster communication with various segments of the public, e.g., through advisory bodies, so that the citizenry may be aware of the values accruing to the state of Idaho from her institutions of higher education and encourage support for the educational system; and (d) extend all possible assistance to the elementary and secondary schools of the state.

OTHER INSTITUTIONS OF HIGHER EDUCATION. In relation to other institutions of higher education, the university will: (a) cooperate in the coordination of its academic programs with other institutions in the state system of higher education so that the maximum benefit may be realized from special capabilities and unnecessary duplication of efforts may be avoided; (b) cooperate in the encouragement of multi-institutional research and instructional programs that capitalize upon the areas of special competence and advanced studies; and (c) cooperate in the development of systems for faculty and student exchange for the enrichment of the educational process.

The University Today

The central academic division of the university is the College of Letters and Science, which offers a broad, liberal education in the arts and sciences coupled with preparation for leadership in the student's selected field of concentration. Other academic divisions are: College of Agriculture, College of Business and Economics, College of Education, College of Engineering, College of Forestry, Wildlife and Range Sciences, College of Law, College of Mines and Earth Resources, the University of Idaho faculty of the Northwest College of Veterinary Medicine, and the Graduate School. The School of Communication, the School of Home Economics, and the School of Music function within the administrative framework of the College of Letters and Science.

The faculty is composed of many dedicated teachers and scholars who hold advanced degrees from universities throughout the world. Besides teaching, the faculty is actively involved in research, and many faculty members serve the community-at-large through consulting services, lectures, recitals, exhibitions, dramatic productions, seminars, and similar activities. Examples of research and service agencies associated with the university are the Cooperative Extension Service, the Idaho Water Resources Research Institute, and the Bureau of Public Affairs Research.

Many of the university's facilities are among the best to be found. The College of Law Building is an excellent example, and the J. E. Buchanan Engineering Laboratory features advanced equipment found in few other institutions in the nation. A further example is the Forestry, Wildlife and Range Sciences Building, which is fully equipped for research and instruction, and considered by many to be the best facility of its kind in the country. Architectural honors were also awarded to the Women's Physical Education Building and adjoining Swimming Center.

Within a short drive from the campus are rich mineral deposits, which make the area valuable for the study of mining. Also nearby are mountains, rivers, semiarid areas, all important to the study of the environmental sciences. The farmlands in the region are well suited for agricultural research; and for the interested student, the locale offers much in the way of native American history and artifacts. For students of recreational management, there are wildlands and state and national parks nearby.

The educational climate of the university is

enhanced by the proximity of Washington State University in Pullman, only eight miles to the west. The interchange of library materials, programs, and course offerings between the two campuses makes the entire area a true university center.

Outside the classroom, students may enhance their university experience in many ways. In addition to a range of campus-wide social and cultural events, the various living groups hold their own activities. A large variety of varsity and intramural sports is offered, and dramatic, musical, and dance productions, as well as art and museum exhibitions, enrich the cultural life.

Some students contribute to the campus newspaper, the *Idaho Argonaut,* which has the distinction of having been free from faculty or administrative control since it was first published in 1898. Others spend time working in the student-owned and operated radio station, KUOI. The Student Union Building is the headquarters for many of these activities and for student government. Students are also represented on most standing committees of the faculty as well as on the Faculty Council, and thus are active participants in the governance of the university.

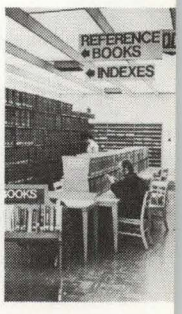
Assistance, whether academic, vocational, or personal, may be obtained from various sources, including Student Advisory Services, the Career Planning and Placement Center, and the Student Counseling Center. Nightline, an independent, volunteer, telephone service for advice in crises, for general information and referrals, and for nutritional information, is always available for students and Moscow residents at 882-0320. In addition, three religious institutes are located adjacent to the campus, and courses may be taken through these centers for college credit.

Accreditation

The university is a member of the American Association of Land-Grant Colleges and Universities, the National Association of State Universities, and the National Commission on Accrediting, and is accredited by the Northwest Association of Schools and Colleges. The following organizations have granted additional approval or accreditation for specific programs: American Bar Association, American Chemical Society, American Dietetics Association, Association of American Law Schools, Engineers' Council for Professional Development, National Architectural Accrediting Board, National Association of Schools of Music, National Council for Accreditation of Teacher Education, and Society of American Foresters.

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

Libraries and Museum



The University Library and Law Library contain a collection of about 900,000 volumes, to which approximately 30,000 volumes are added annually. The library receives more than 10,000 periodicals (serials) and 125 newspapers and, as the regional depository in Idaho for U.S. government documents, houses a collection of over 315,000 official publications. The U.S. Geological Survey and the Army Map Service also use the library as a depository; there are now about 65,000 maps in the library's collection.

Subject librarians administer three open-stack divisional libraries (humanities, social science, and science/technology), which have been organized to conform with the academic divisions of the university. The library shares the university objectives of teaching, research, and service, and offers individual and group instruction in elementary and advanced techniques of bibliographic research.

The Special Collections Room contains rare and curious books, and books that constitute a unique assemblage, such as the Day-Northwest Collection, which consists of more than 8,500 volumes on Idaho and the Pacific Northwest.

The library also maintains a Browsing Room comprised of books of current interest, popular periodicals, and state, out-of-state, and foreign newspapers.

The library is air-conditioned, is open 92 hours a week during the regular school term, and provides photocopy machines at a nominal fee. Free typewriters and hand calculators are available for use in the library, courtesy of ASUI.

As a member of the Pacific Northwest Bibliographic Center in Seattle, the library has access to the collections of other academic libraries within the region.

The University Museum, located in the Faculty Office Complex West, serves the campus, region, and state. An all-university service, the museum strives to teach through the use of objects and to provide a workshop facility for students in museology who are preparing for a museum career. (Museology is one of the disciplines within the Department of Sociology/Anthropology. See part 5 of this catalog for the courses offered.)

The permanent collections in the museum include objects from North America, Africa, the Near East, and southeast Asia. Students, employees, and other friends of the university can help to build the museum's collections of scientific and artistic objects by calling the museum director's attention to significant, available material.

Degrees Granted

Upon completion of appropriate programs 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 appropriate lower-division educational programs at the Idaho National Engineering Laboratory, Idaho Falls.

Baccalaureate Degrees

Bachelor of Architecture, B.Arch.
Bachelor of Arts, B.A.
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 Physics, B.Phys.
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 Mechanization, B.S.Ag.Mech.
- Animal Science, B.S.An.Sc.
- Bacteriology, B.S.Bact.
- Business, B.S.Bus.
- Business Education, B.S.Bus.Ed.
- Chemical Engineering, B.S.Ch.E.
- Civil Engineering, B.S.C.E.
- Computer Science, B.S.C.S.
- Education, B.S.Ed.
- Electrical Engineering, B.S.E.E.
- Entomology, B.S.Ent.
- Fishery Resources, B.S.Fish.Res.
- 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.
- Home Economics, B.S.H.Ec.
- Mechanical Engineering, B.S.M.E.
- Metallurgical Engineering, B.S.Met.E.
- Mining Engineering, B.S.Min.E.
- Office Administration, B.S.O.Ad.
- Plant Protection, B.S.Pl.Prot.
- Plant Science, B.S.Pl.Sc.
- Pre-Dental Studies, B.S.Pre-Dent.
- Pre-Medical Studies, B.S.Pre-Med.
- Range Resources, B.S.Range Res.
- Recreation, B.S.Rec.
- Soil Science, B.S.Soil Sc.
- Veterinary Science, B.S.Vet.Sc.
- Wildland Recreation Management, B.S.Wildland Rec.Mgmt.
- Wildlife Resources, B.S.Wildl.Res.

Bachelor of Technology, B.Tech.

Master's Degrees

Master of Architecture, M.Arch.
Master of Arts, M.A.
Master of Arts in Teaching, M.A.T.
Master of Business Administration, M.B.A.
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 Nuclear Science, M.Nuc.Sc.
Master of Public Administration, M.P.A.
Master of Science, M.S.

Specialist Degrees in Education

Specialist in Education—Ed.Sp.
Specialist in Educational Administration—Ed.Admin.Sp.
Specialist in Guidance and Counseling—Guid.-Couns.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 Education, Ed.D.
Doctor of Philosophy, Ph.D.

*Limited to students enrolled in the educational program of the Idaho National Engineering Laboratory, Idaho Falls.

Programs Offered

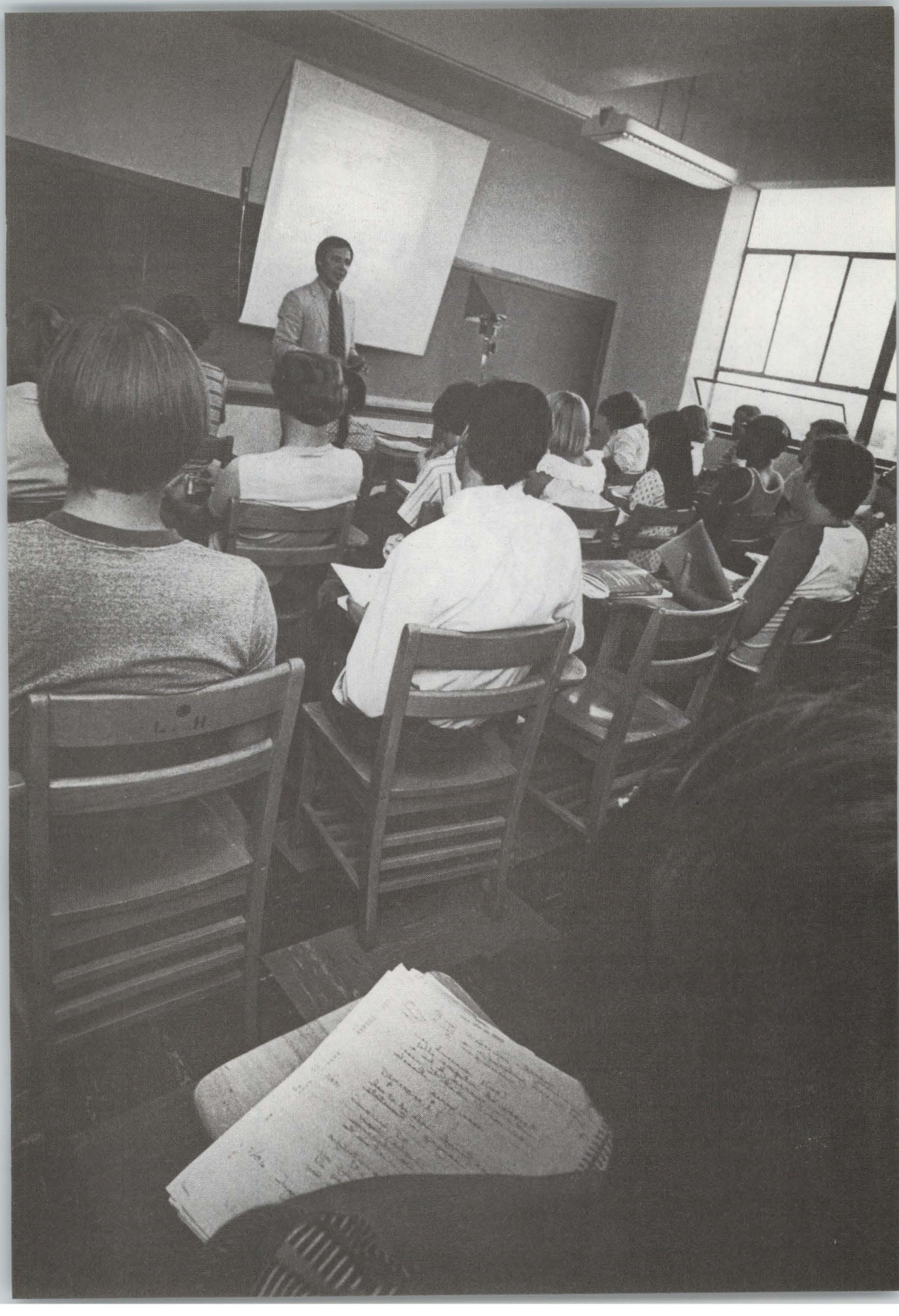
Programs offered by the university are shown in the list below. Entries followed by degree abbreviations are major curricula leading to the degrees indicated. After a student has completed the requirements for a degree (as provided in part four of this catalog for baccalaureate curricula and in the graduate bulletin for advanced degrees), the degree name and, at the discretion of the college concerned, 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 and are printed on the student's final permanent transcript only.) In parentheses after each major in the list is the college or unit through which the program is offered. The abbreviations used are: **Ag,** College of Agriculture; **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

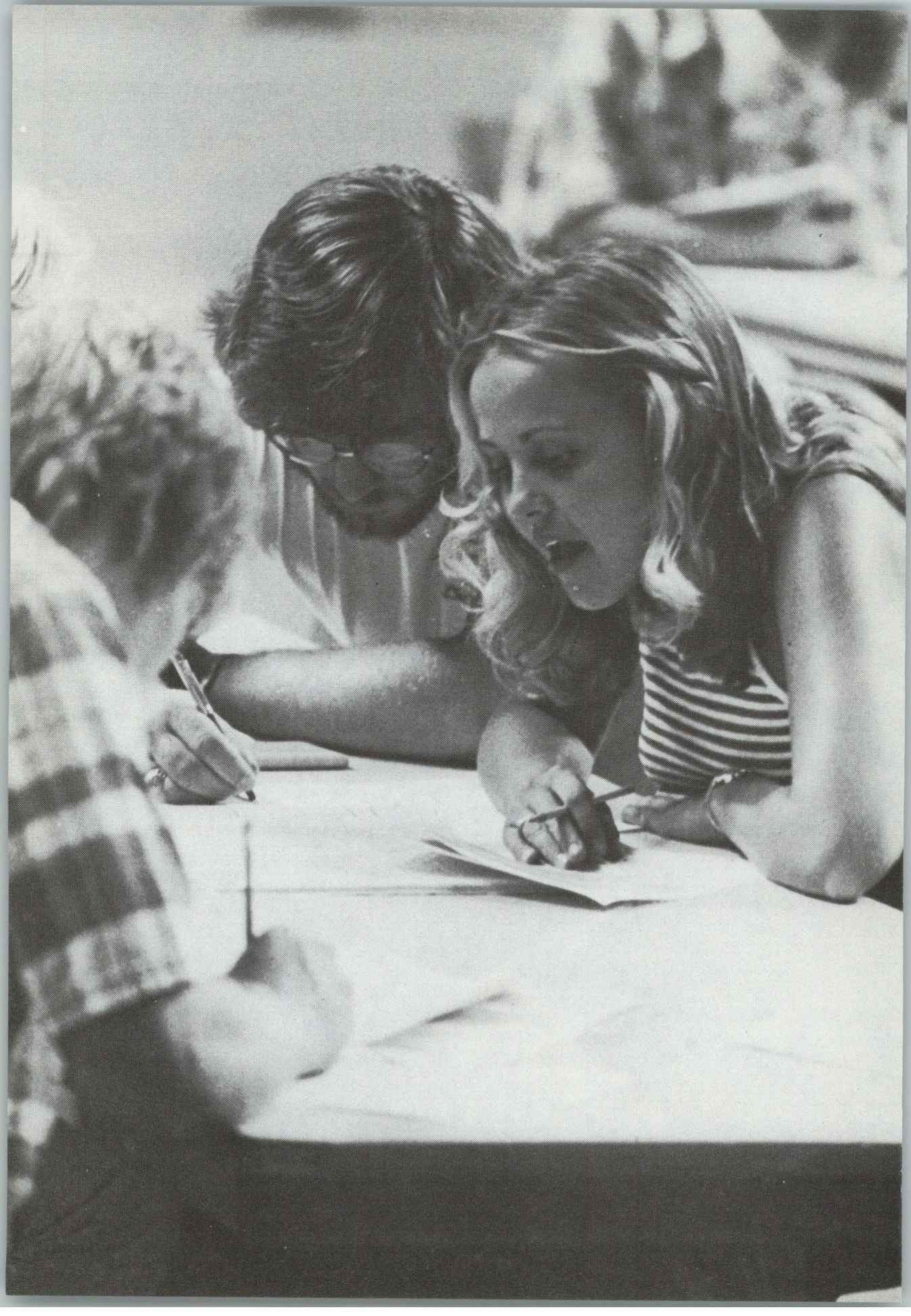
of Juris Doctor, are offered through the Graduate School. See the notes at the end of this list.

Accounting (B&E) B.S.Bus.
Agribusiness (Ag) B.S.Ag.Econ., B.S.An.Sc., B.S.Soil 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 Mechanization (Ag) B.S.Ag.Mech.
Agriculture: General (Ag) B.S.Gen.Ag.
Air Force Officer Education Program, cooperative with Washington State University
American Studies (L&S) B.A.
Animal Sciences (Ag) B.S.An.Sc., M.S.
Anthropology (L&S) B.A., B.S., M.A.
Architecture (L&S) B.Arch., M.Arch., M.A.
Army Officer Education Program
Art (L&S) B.A., B.F.A., M.A., M.F.A., M.A.T.
Bacteriology (Ag) B.S.Bact., M.S., Ph.D.; also (L&S) B.S.
Biochemistry (Ag-L&S) M.S., Ph.D.
Biological Sciences (L&S) M.Nat.Sc.
Biology (L&S) B.A., B.S., M.A.T.
Botany (L&S) B.A., B.S., M.S., Ph.D.
Business; General (B&E) B.S.Bus., M.B.A.
Business Education (Ed) B.S.Bus.Ed., M.S., M.Ed.
Chemical Engineering (Engr) B.S.Ch.E., M.S., M.Engr., Ph.D.
Chemistry (L&S) M.S., M.Nuc.Sc.,* 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 Development (L&S) B.A., B.S.H.Ec.
Civil Engineering (Engr) B.S.C.E., M.S., M.Engr., Ph.D.
Classical Studies (L&S) B.A.
Clothing, Textiles and Design (L&S) B.S.H.Ec.
Communication (L&S) B.A., B.S.
Computer Science* (Engr) B.S., M.S.
Crop Management (Ag) B.S.Pl.Sc.
Dance (Ed) B.Dan.
Distributive Education (Ed) B.S.Bus.Ed.
Earth Science (Min) M.Nat.Sc., M.A.T.
Economics (B&E) B.S.Bus., M.S.; also (L&S) B.A., B.S.
Education (Ed) M.A.T., Ed.Sp., Ed.D., Ph.D.
Educational Administration (Ed) M.S., M.Ed., Ed.Admin.Sp.
Electrical Engineering (Engr) B.S.E.E., M.S., M.Engr., Ph.D.
Elementary Education (Ed) B.S.Ed., M.S., M.Ed.
English (L&S) B.A., M.A., M.A.T.
Entomology (Ag) B.S.Ent., M.S., Ph.D.
Finance (B&E) B.S.Bus.
Fishery Resources (FWR) B.S.Fish.Res., M.S.
Food and Nutrition (L&S) B.S.H.Ec.
Food Science (Ag), cooperative with Oregon State University
Forest Products (FWR) B.S.For.Prod., M.S.
Forest Resources (FWR) B.S.For.Res., M.S.
Forestry, Wildlife and Range Sciences (FWR) Ph.D.
French (L&S) B.A., M.A., M.A.T.
General Studies (GS) B.G.S.
Geography (Min) B.S.Geog., M.S., M.A.T.; 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.
German (L&S) B.A., M.A., M.A.T.
Guidance and Counseling (Ed) M.S., M.Ed., Guid.-Couns.Sp.
History (L&S) B.A., B.S., M.A., M.A.T., Ph.D.
Home Economics (L&S) B.S.H.Ec., M.S., M.A.T.
Home Economics Education (L&S) B.S.H.Ec.
Hydrology (Min) M.S.
Industrial Education (Ed) B.S.Ed., M.S., M.Ed.
Industrial Technology* (Ed), B.Tech.
Interdisciplinary Studies (L&S) B.A., B.S., M.A., M.S.
Interior Design (L&S) B.F.A., M.A.
Journalism (L&S) B.A., B.S.
Landscape Architecture (L&S) B.L.Arch.
Landscape Horticulture (Ag) B.S.Pl.Sc.
Latin (L&S) B.A.
Latin American Studies (L&S) B.A.
Law (Law) J.D.
Law: Combined Program (L&S) B.A., B.S.
Management (B&E) B.S.Bus.
Marketing (B&E) B.S.Bus.
Mathematics (L&S) B.A., B.S., M.S., M.Nuc.Sc.,* 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
Metallurgical Engineering (Min) B.S.Met.E., M.S.
Metallurgy* (Min) M.S., M.Nuc.Sc.
Mining Engineering (Min) B.S.Min.E., M.S.
Mining Engineering-Metallurgy (Min) Ph.D.
Museology (L&S) B.A., B.S.
Music (L&S) M.A., M.Mus., M.A.T.
Music: Applied (L&S) B.A.
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 Development (Ag) B.S.Ag.Econ.
Naval Science (L&S) B.N.S.; also Navy-Marine Officer Education Program
Nuclear Engineering* (Engr) M.S., M.Engr.
Office Administration (Ed) B.S.O.Ad.
Office Occupations Education (Ed) B.S.Bus.Ed.
Philosophy (L&S) B.A., B.S., M.A.
Physical Education (Ed) M.S., M.Ed.
Physical Education: Elementary (Ed) B.S.Ed.

Physical Education: Secondary (Ed) B.S.Ed.
Physical Sciences (L&S) M.Nat.Sc.
Physics (L&S) B.A., B.S., B.Phys., M.S., M.Nuc.Sc.,* M.A.T., Ph.D.
Plant Protection (Ag) B.S.Pl.Prot.
Plant Science (Ag) B.S.Pl.Sc., M.S., Ph.D.
Political Science (L&S) B.A., B.S., M.A., M.A.T., Ph.D.
Pre-Dental Studies (L&S) B.S.Pre-Dent.
Pre-Medical Studies (L&S) B.S.Pre-Med.
Pre-Nursing (L&S) 1-year and 2-year programs
Psychology (L&S) B.A., B.S., M.S.
Public Administration (L&S) M.P.A.
Radiological Science* (L&S) M.S.
Radio-Television (L&S) B.A., B.S.
Range-Livestock Management (Ag) B.S.An.Sc.
Range Resources (FWR) B.S.Range Res., M.S.
Recreation (Ed) B.S.Rec.
Rural and Community Development (Ag) B.S.Ag.Econ.
School Psychology (Ed) Sch.Psych.Sp.
Secondary Education (Ed) B.S.Ed., M.S., M.Ed.
Social Sciences (L&S) M.A.T.
Sociology (L&S) B.A., B.S., M.A.
Sociology-Anthropology (L&S) M.A.T.
Soil Science (Ag) B.S.Soil Sc., M.S., Ph.D.
Spanish (L&S) B.A., M.A., M.A.T.
Special Education (Ed) B.S.Ed., M.S., M.Ed., Sp.Ed.Sp.
Speech (L&S) B.A., B.S.
Technical Education (Ed) B.S.Ed.
Theatre Arts (L&S) B.A., B.S., B.F.A., M.A.
Theatre Arts-Speech (L&S) M.A.T.
Trade and Industrial Education (Ed) B.S.Ed.
Veterinary Science (Ag) B.S.Vet.Sc., M.S.; also Veterinary Medicine, cooperative with Northwest College of Veterinary Medicine at Washington State University
Vocational Education (Ed) M.S., M.Ed., Voc.Ed.Sp.
Vocational-Technical Education (Ed) B.S.Ed.
Wildland Recreation Management (FWR) B.S.Wildland Rec.Mgmt., M.S.
Wildlife Resources (FWR) B.S.Wildl.Res., M.S.
Zoology (L&S) B.A., B.S., M.S., Ph.D.

*The graduate majors in computer science, metallurgy, nuclear engineering and radiological science, the degree of Master of Nuclear Science, and the undergraduate major in industrial technology are limited to students enrolled in the educational program of the Idaho National Engineering Laboratory, Idaho Falls.





Admission to the University

Students desiring to enter the university for the first time should write to the Admissions Office to request an admissions folder. It contains detailed instructions on the application procedure and provides a means of requesting information on housing and various types of financial aid.

This catalog section contains general information pertinent to all applicants for admission to the university. See "Admission to the Graduate School and the College of Law" near the end of this catalog section for additional information.

Students who have not earned a college degree are classified as undergraduates: freshmen (less than 26 credits), sophomores (less than 60 credits), juniors (less than 94 credits), or seniors.

Applicants who are still in high school should apply during the first semester of their senior year and should request the school to send a record of their first seven semesters to the Admissions Office. If otherwise qualified, the applicant will be given an early notice of tentative acceptance for fall entrance based on this record. Final acceptance will be granted when the applicant has graduated from an accredited high school.

Admission Procedures

Credentials. Applicants for admission are required to submit the following:

1. Personal data on the regular application-for-admission form. Failure to list all institutions attended as specified on the application form is considered fraud and subjects the applicant to immediate cancellation of his or her registration.

2. A certificate of secondary-school record from the last high school attended and a transcript and statement of honorable dismissal from each institution attended beyond high school. TRANSCRIPTS SUBMITTED IN SUPPORT OF AN APPLICATION MUST BE OFFICIAL AND MUST BE SENT DIRECTLY TO THE ADMISSION OFFICE BY THE ISSUING INSTITUTION (or certifying agency in the case of international students). THEY WILL NOT BE ACCEPTED FROM THE APPLICANT. THEY BECOME THE PROPERTY OF THE UNIVERSITY AND CANNOT BE RETURNED OR FORWARDED. To be official, a transcript must be signed by the registrar, superintendent, principal, or other authorized official of the school.

3. Each applicant for admission to the freshman class (including transfer students with less than 26 semester credits) is required to have the scores attained on either the College Entrance Examination Board tests (SAT) or the American College Testing Program (ACT) sent to the Admissions Office prior to registration to become a part of his or her file.

Application Fee. With certain exceptions, all **new** applications for admission must be accompanied by a $10, nonrefundable application fee. This fee is not charged to those applying for admission to summer sessions, short courses, continuing education programs, the INEL education program at Idaho Falls, or domestic student exchange programs.

Final Dates for Application. To provide time for evaluation and for notice of acceptance to reach the applicant before registration days, applications and credentials should be received by the Admissions Office by August 1 for first-semester entrance and by December 15 for second-semester entrance. Applications and credentials for summer sessions should be received by the Admissions Office at least three weeks before the opening date of the summer sessions 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.

Acceptance.

1. When an applicant's credentials have all been received and he or she has been found eligible, a letter of acceptance and a physical examination report form will be sent. A permit to register will be among the registration materials furnished the applicant upon arrival at the university.

2. 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.

Admission Requirements

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

Applicants Without Previous College Credit.

1. Applicants who are either residents of Idaho or sons or daughters of nonresident alumni of the university are eligible for admission if they are graduates of accredited high schools.

2. Nonresident applicants who are graduates of accredited high schools are selected for admission from among those who rank scholastically in the upper half of their graduating class.

3. Applicants who are not graduates of accredited high schools may qualify for admission in one of the following ways:

a. **By Recommendation.** Applicants who have completed 15 acceptable units in accredited high schools and who rank scholastically in the upper half of their class, but have not graduated, may be admitted upon special written recommendation of the principal and approval of the director of admissions.

b. **By Examination.** Applicants who are graduates of nonaccredited high schools and those who are not graduates of any high school will be considered for admission on the basis of individual evaluation of their capability to benefit from a university education as shown by such indicators as previous academic records and scores on specified standardized tests. Applicants to whom this provision applies should write to the Admissions Office for detailed information and instructions.

4. **High School Preparation.** TRANSCRIPTS SUBMITTED IN SUPPORT OF AN APPLICATION MUST BE OFFICIAL AND MUST BE SENT DIRECTLY TO THE ADMISSION OFFICE BY THE ISSUING INSTITUTION (or certifying agency in the case of international students). THEY WILL NOT BE ACCEPTED FROM THE APPLICANT. THEY BECOME THE PROPERTY OF THE UNIVERSITY AND CANNOT BE RETURNED OR FORWARDED. Certificates of secondary-school record should show the length of each course in weeks, the number of class meetings per week, the length of each meeting, and the grade of scholarship attained, including a record of all failures, conditions, and repeats.

a. **Definition of High School Units.** A "unit" represents a subject taught five times per week in periods of not less than 40 minutes duration (80 minutes for laboratory periods) for a school year of at least 36 weeks. Units earned in the ninth grade of a junior high school are combined with those earned in a three-year senior high school. Units are classified as "academic" and "nonacademic." Academic units are those earned in English (composition and literature), foreign languages, mathematics, natural sciences, and social sciences. Acceptance of units is subject to the following limitations:

(1) Units are not accepted in spelling, penmanship, reviews, project work (unless in conjunction with regular courses), and work primarily in the nature of extracurricular activities.

(2) Units are not accepted for less than one year in a foreign language, typewriting, shorthand, or bookkeeping.

(3) Less than one-half unit in any subject is not accepted.

(4) A maximum of one unit each in physical education and military training is accepted.

b. **Subject Requirements.**

(1) The subject-matter content of an applicant's secondary education does not enter directly into the determination of eligibility for admission. It does, however, provide a basis for evaluating the adequacy of his or her preparation, for advising as to the choice of college or curriculum, and for placement in certain college subjects. The required preparation for admission to the various colleges of the university is set forth in the table in this catalog section.

(2) Students may be admitted with fewer academic units than the minimum total indicated for their particular college or they may be admitted with the total academic units required but with fewer units in one or more subjects than indicated. 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.

Advanced Placement. Credit is granted for successful completion of the CEEB Advanced Placement Examination, the College Level Examination Program (CLEP), and courses at military schools as recommended by the American Council on Education. Students who expect to take the CLEP exams, or want their CLEP credits evaluated, should write to the registrar for a set of guidelines to avoid duplication of credit. Inquiries about other advanced placement should be addressed to the Admissions Office.

Applicants With Previous College Credit.

1. Applicants who have been enrolled in other colleges or universities accredited by one of the regional agencies, such as the Northwest Association of Secondary and Higher Schools, and whose scholastic records at these institutions are satisfactory may be admitted to advanced standing. These students must submit the following credentials to the Admissions Office of the University of Idaho at least one month before they expect to enter the university; a certificate of secondary school record from the last high school attended and separate transcripts from each of the higher institutions attended. TRANSCRIPTS SUBMITTED IN SUPPORT OF AN APPLICATION MUST BE OFFICIAL AND MUST BE SENT DIRECTLY TO THE ADMISSIONS OFFICE BY THE ISSUING INSTITUTIONS (or certifying agency in the case of international students). THEY WILL NOT BE

COLLEGES OF THE UNIVERSITY

Students who plan to enter the General Studies Program (see part 4) should use this chart as a guide for minimum high school preparation.

HIGH SCHOOL UNITS IN		Agriculture	Business & Economics	Education	Engineering	Forestry, Wildlife & Range Sciences	Letters & Science	Mines & Earth Resources
English	3	3	3	3	3	3	3	3
Social science	2	2	2	2	2	2	2	2
Mathematics[1]								
Algebra	1	1	1	1	1	1	1	1
Plane geometry	1	1	1	1	1	1[2]	1	1
Advanced algebra	½	1		1	1		½	
Trigonometry				½	½			
Other				½			½[3]	
Natural science								
Unspecified	2	2	2	1	0	2	1[4]	
Biology					1			
Chemistry				1	1			
Physics				1	1		1[5]	
Unspecified academic units	1½	2	2		½	2	1	
Total academic units	11	11	11	12	12	11	11	
Additional academic, vocational, or elective units	4	4	4	3	3	4	4	
Total units required	15	15	15	15	15	15	15	

1 High schools offering modern mathematics programs may have course names that differ from the traditional ones, yet contain equivalent material.

2 Or one unit of advanced algebra. Both plane geometry and advanced algebra are recommended, especially for prospective students of mathematics, science, or architecture.

3 One-half unit of either advanced algebra, trigonometry, or solid geometry (in this order of preference) is required.

4 Chemistry strongly recommended.

5 One unit required for mining, metallurgical, or geological engineering, but not required for geography where two units of natural science (unspecified) are required.

ACCEPTED FROM THE APPLICANT. THEY BECOME THE PROPERTY OF THE UNIVERSITY AND CANNOT BE RETURNED OR FORWARDED.

2. Upon admission of a transfer student, all credits earned or attempted, and all grades received in college-level courses at accredited institutions are recorded; however, no grade points for this work are included in the computation of his or her grade point average at the University of Idaho. (For regulations covering students who entered the university before the 1971-72 academic year, see the applicable catalog issue.)

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

4. Advanced placement credit granted by other accredited institutions will be honored on transfer to the University of Idaho.

5. 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 grade points are not allowed.

6. Advanced-standing applicants with less than 26 semester hours of transfer credit must meet both beginning freshman and advanced-standing admission requirements, including submission of the required test scores.

7. 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.

8. A maximum of 64 credits earned at junior or community colleges, or one-half of the total credits required for the student's intended baccalaureate degree program, may be transferred to the University of Idaho, except as limited by regulation J-5 (see part 3).

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

1. When equivalency has been validated by the academic department and college that offer comparable subject matter, credits may be transferred as unspecified credits in the appropriate discipline (for example, a block of credits in agriculture) or 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 will be determined by the department and the dean of the college into which the student is transferring.

3. A grade of P (pass) will be recorded for such credits that are transferred.

4. Credits transferred from vocational-technical schools shall be 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 will decide 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 shall be resolved by the dean of the college into which the student is transferring.

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.

Admission as a Nonmatriculated Student. This category is for applicants who wish to pursue studies for their personal edification and who do not want to work toward a formal degree at the University of Idaho. A transcript from the last accredited institution and additional documentation may be required in support of the application. If applying for financial aid, the applicant must request transcripts from all institutions attended above the eighth grade, if an undergraduate; or from the institution from which the degree was earned, if a degree is held. Transcripts must be received by the Admissions Office directly from the issuing institutions.

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

The applicability of credit earned while registered in this category is the responsibility of

the student. Permission of the dean of the Graduate School and the instructor of the course 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 nonmatriculated category who register for a full course load (i.e., twelve or more credits in any semester or six or more credits in a summer session) will be disqualified if a 2.00 is not earned during that semester or summer session. Nonmatriculated students who are disqualified are ineligible to continue in the university unless readmitted.

Nonmatriculated students who are otherwise eligible for financial aid may be assisted for a maximum of two semesters while enrolled in this category. If a departure from this regulation is warranted, the student has the right to appeal to the Student Financial Aid Committee. The two-semester limitation shall include periods at other institutions in which the student was enrolled in a nonmatriculated or similar category.

A nonmatriculated 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 nonmatriculated student enrolled for 12 credits or more. Such a student will be required to file the same credentials required of a regular students.

A nonmatriculated applicant must complete a special application form indicating an understanding of the limitations of this category.

Registration as a nonmatriculated student does not meet the Immigration Service requirements for the issuance of a visa.

Admission of International Students. The University of Idaho accepts qualified students from other countries to the extent that space is available. International applicants are expected to meet the requirements for admission from high school or from other colleges or universities as outlined above.

1. **Credentials.** Official transcripts and/or certified copies of the certificate, diploma, or government examination report received from any college or university must be translated into English and MUST BE SENT BY THE CERTIFYING AGENCY DIRECTLY TO THE ADMISSIONS OFFICE.

2. **English Proficiency.** All international student applicants whose native language is other than English are required to take and receive a satisfactory score on the Test of English as a Foreign Language (TOEFL) or other examination acceptable to the University of Idaho. Arrangements to take the TOEFL examination may be made by writing directly to TOEFL, Educational Testing Service, P.O. Box 899, Princeton, New Jersey 08540. The test must be taken and the scores received by the university before a decision on admission of the applicant.

3. **Financial Statement.** All international students must present to the Admissions Office satisfactory statements of finances and adequate proof of financial responsibility *or* sponsorship by a reputable American citizen or organization for all financial obligations while attending the university.

Admission to the Graduate School and the College of Law. Students interested in graduate study should request a copy of the graduate bulletin. The special procedures for admission to the College of Law are described in part 4.

Mutual Responsibility Agreement

The acceptance of a student for admission and enrollment at the University of Idaho constitutes an agreement of mutual responsibility. The student's part of this agreement is to accept established university rules and policies, to respect the laws of governmental units, and to act in a responsible manner appropriate to these laws, rules, and policies. The university's part is to recognize its commitment to higher education, to fulfill its responsibilities pursuant to the attainment of the academic goals and objectives of all members of the university community, and to meet its obligations for an appropriate atmosphere that will provide an opportunity for students to be heard in matters pertaining to their welfare as students. Appropriate disciplinary action on the part of the university must be taken when it has been determined by established procedures that a student has acted contrary to university regulations and thus has violated this agreement.

Fees and Expenses

The rates quoted in this section were in effect during the 1977-78 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. For approximately $615 per semester ($350-$430 for board; $215-$360 for room), students can obtain board and room in the university-operated residence halls. Students may reduce their living costs by sharing the work in the cooperative residence halls; costs there are approximately $560 per semester ($300 for board; $180 for room).

Annual Expenses

In forecasting total costs for the academic year, double the 1977-78 semester costs, allow for normal increases, and add miscellaneous costs—clothing, laundry, transportation, incidentals, social and recreational expenditures, fraternal affiliations, and personal needs. These miscellaneous costs will vary widely with individual tastes.

An undergraduate student coming to the university needs about $850 to meet initial payments, including the first installment on the board payment. Out-of-state students need an additional $600 to cover tuition. Personal checks, bank drafts, money orders, or travelers checks are all accepted by the university. Also see "Deferred Payment of Fees" further on in this catalog section.

Regular Student Fees Per Semester

Unless exempted, students carrying eight or more credits (or equivalent) and all graduate/instructional assistants on full appointment pay the full-time student fees applicable to the particular division in which the student enrolls. Students in all divisions pay $220 per semester. Students in certain divisions pay additional amounts; see "Special Fees" further on in this catalog section. Fees are payable in full at the time of registration on the scheduled registration day.

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, and to the services of the Office of Alumni Relations, as well as the other services and facilities maintained by the university for the benefit of the students, subject to additional 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 ($600 per semester). Students who are classified as nonresidents of the state of Idaho pay this special fee in addition to the basic full-time student fees of $220, making a total of $820 per semester. For tuition purposes, a student may be classified as a resident of Idaho by meeting one or more of the following qualifications;

1. Any student under the legal voting age whose parent or court-appointed guardian is domiciled in the state of Idaho. Domicile is deemed to exist when the parent or guardian has established residence in Idaho for an indefinite time and has abandoned any former residence. To qualify under this section, the parent or guardian must be residing in the state on the opening day of the term for which the student matriculates.

2. Any student, legal voting age or older, who has continuously resided in Idaho for the twelve months immediately preceding the opening day of the term in which he or she proposes to enroll in the university.

3. Any student, under the legal voting age, who is a graduate of an accredited secondary school in Idaho, and who matriculates in the university during the term immediately following such graduation, regardless of the residence status of the parents or guardian.

4. The spouse of a person who is classified, or is eligible for classification, as a resident of Idaho for the purpose of attending a college or university.

5. Any member of the armed forces of the United States who is stationed in Idaho for other than educational purposes.

6. Any student, under the legal voting age, whose parent or guardian is a member of the armed forces and stationed in Idaho. The student, while in continuous attendance, shall not lose residence status when the parent or guardian is transferred from the state on military orders.

7. Any person, under the legal voting age, married, and who together with spouse has continuously resided in Idaho for the 12 months im-

1977-78 Costs Per Semester

	Idaho Residents	Nonresidents
Tuition*	$ 0	$ 600
Basic full-time student fees	220	220
Books, supplies, etc.	75 to 100	75 to 100
Room and board**	565 to 790	565 to 790
TOTAL***	$860 to 1110	$1460 to 1710

*Plus special fees applicable to students enrolled in the Graduate School, the College of Law, etc.

**In university-owned residence halls. The lower figure represents the costs in cooperative dormitories in which residents provide their own janitorial and dining hall services.

***Not including personal, incidental, or travel expenses.

mediately preceding the opening day of the term in which he or she proposes to attend the university.

8. Any person, separated under honorable conditions from the armed forces of the United States after at least two years of service, who at the time of separation designates Idaho as his or her intended domicile, or who has Idaho as his or her home of record in service and enters the university within one year of the date of separation. (A copy of the DD214 separation papers may be submitted in support of this qualification.)

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

Registration Packet Replacement Fee ($5).

Law Tuition ($100 per semester). Students who enroll in the College of Law pay this fee in addition to the registration fees of $220 and, if applicable, in addition to nonresident tuition ($600).

Graduate Tuition ($50 per semester). Students who enroll in the Graduate School pay this fee in addition to the registration fees of $220 and, if applicable, in addition to nonresident tuition ($600).

WAMI Tuition ($270.50 per semester). Students at the University of Idaho who enroll in the WAMI medical education program pay this fee in addition to the registration fees of $220.

Registration Fee for Senior Scholars ($5). Persons 60 years of age and older are permitted to enroll in courses on the Moscow campus, on a space-available basis, for a total of $5 per semester or other academic session without regard to the number of credits taken or audited. Senior scholars are enrolled after the regular registration days. Special fees for specific courses, e.g., music lessons, etc., are assessed, if such charges are made to other students who take the courses concerned. Registration under this program entitles the student to instructional and library privileges only, and does not include insurance, student health services, ASUI membership, or free admission to athletic events.

Part-time Fee ($25 per credit or equivalent for residents; $30 for nonresidents). Students who register for seven credits or less may pay this fee, plus any special fees applicable to specific courses, in lieu of regular fees and tuition. Part-time students are entitled to instructional and library privileges only.

Audit or Zero-Credit Fee ($25 per credit or equivalent for residents; $30 for nonresidents). Students who register as auditors or for zero-credit pay this fee, plus 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.

Late Registration Fee ($15). Students who register after the last day to add classes or change course sections pay this fee (see regulation C in part 3).

Student Health Service Fees. Payment of full-time 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.

Music Special Fees. All students, including graduate-student appointees, enrolling in courses numbered MusA 100, 101, 201, 301, 407, 505, Individual Instruction, pay $25 per credit or equivalent. The individual-instruction fee is waived for students whose programs of studies specifically require these courses for graduation. In addition, each student presenting a formal recital performance in the School of Music Recital Hall is charged $20. If two or more performers present a program together, the charge is $10 for each of the principal performers.

Departmental Special Fees. Various departments, including the Department of Art/Architecture, charge a general shop fee and/or special fees for certain courses. Consult department offices for the current schedule of departmental special fees.

Extramural Credit Fee ($20). Charged for each separate request or petition for extramural credit 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 VocEd 270, 370, 470, and 480; and credit for external study/experience and bypassed courses (see regulation I).

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 when a special diploma insert must be made.

Thesis/Dissertation Binding Fee ($7). 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).

Publication and Microfilming Fee ($25). 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 ($1). Every person who has es-

tablished an academic record at the university (including extension and correspondence study) is furnished, upon request, one official copy of the academic record without charge. Additional copies, when requested, are $1 per copy.

Yearbook Fee ($5). Students wishing to order a copy of the *Gem of the Mountains* pay this special 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 small greens fee is charged for the use of the ASUI Golf Course.

4. University employees and students are charged, at rates of $30 and $10 per year, 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 $100 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 plus the service charge specified below must be paid at the time of registration.

2. Any special fees must be paid in full at the time of registration including deposits, special course fees, insurance, housing and board payments, fines, penalties, summer school fees, special workshop fees, correspondence study 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 $100	$5
over $100	$10
over $300	$15

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 by October 10 and November 10 for the fall semester and by February 10 and March 10 for the spring semester.

5. Any delinquent installments are assessed an additional $10 late charge, and the registration of the student concerned is subject to cancellation.

6. Any student aid received by a student for purposes of registration (scholarships, student loans, BEOG awards, etc.) is deducted from fees to be assessed, and 60 percent of the balance, if that balance is over $100, may be deferred.

7. The student signs a promissory note for the deferred balance, and an authorization for deferred payment is given the student for presentation to the cashier. The Controller's Office makes related determinations, has notes signed, and issues authorizations during registration at the location for disbursement of student aid checks.

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 fees (except that $11 of the registration fee is nonrefundable once registration is completed). This does not apply, however, to the Northwest Interinstitutional Council on Study Abroad (NICSA) program; once the overseas program has begun, no refunds are possible.

1. When withdrawal is accomplished during the scheduled registration days, and before the beginning of classes, fees (less $11) are refunded in total.

2. When withdrawal is completed after classes have begun but before the close of the second week of classes, 75 percent of the fee balance is refunded.

3. When withdrawal is completed after the close of the second week but before the close of the fourth week of classes, 50 percent of the fee balance if refunded.

4. When withdrawal is completed after the close of the fourth week of classes, no refund is given.

Refunds are based upon the date of the application for refund after completion of withdrawal and not from the date of last attendance of class, except in cases of illness.

Refund of Music Fees. The above schedule does not cover applied music lessons. Special music fees for individual instruction in performance studies may, upon prompt application by the student withdrawing, be refunded according to the following schedule: during the first two weeks of a semester, five-sixths; during the third and fourth weeks, two-thirds; fifth and sixth weeks, one-half; seventh and eighth weeks, one-third; ninth and tenth weeks, one-sixth. Application for this refund should be made to the director of the School of Music who is responsible for the approval of the application.

Student Housing

The University of Idaho is a residential campus with more than two-thirds 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. Campus living groups benefit from guidance services provided by advisers associated with them.

In addition to 24 independent living groups and 29 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, 106 East Third, 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 24 living groups in 9 residence halls and provides meal services 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 their share of the labor in the kitchen, dining room, and public areas to reduce living costs. The Alumni Residence Center, for men and women who are 21 years of age or older or have graduate-student status, contains efficiency apartments, each with its own cooking facilities. Each residence hall has study and recreation areas, lounges, and complete laundry facilities; commercial linen service is also available. Personal items, such as sheets, pillowcases, bedding, towels, and other articles deemed convenient or necessary are NOT furnished by the university residence halls and should be provided by the student.

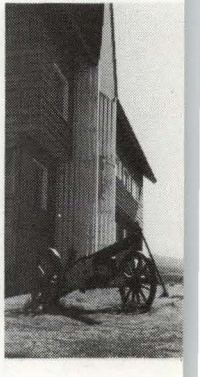
See the section headed "Fees and Expenses," above, for the approximate cost of living in residence halls. More detailed information concerning student housing may be obtained from the Residence Halls Office, Wallace Residence Center.

Sororities

Nine national sororities have chapters on the University of Idaho campus. Each chapter owns and operates its own house. These are: Alpha Chi Omega, Alpha Gamma Delta, Alpha Phi, Delta Delta Delta, Delta Gamma, Gamma Phi Beta, Kappa Alpha Theta, Kappa Kappa Gamma, and Pi Beta Phi. The average cost for living in a sorority ranges between $145 and $155 per month, which includes charges for room, board, and social fees. In addition there are special membership fees—pledge, initiation, and house corporation reserve fund—that are paid only once. Panhellenic Council coordinates intersorority relationships and formulates policies regarding rushing procedures.

Arrangments for Sorority Living. Membership in a sorority is by invitation only. Those women who are interested in sorority living should complete the appropriate section of the application-for-admission blank, which indicates their interest in sorority living, or write a letter to Panhellenic Council, c/o Student Advisory Services. The selection of members in each sorority is made during participation in a program known as "rushing," which is held before the beginning of the fall semester. Registration for rushing *must be completed no later than August 10.*

Fraternities



Chapters of 18 national fraternities are maintained on the University of Idaho campus. They are: Alpha Kappa Lambda, Alpha Tau Omega, Beta Theta Pi, Delta Chi, Delta Sigma Phi, Delta Tau Delta, Farmhouse, Kappa Sigma, Lambda Chi Alpha, 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 by invitation from the members of the group concerned. The university does not make arrangements for membership. The average cost for living in a fraternity ranges between $150 and $160 per month, which includes charges for room, board, and social fee.

Arrangements for Fraternity Living. Anyone interested in fraternity living should so indicate on the admissions application or write for information to: Interfraternity Council, Student Advisory Services. Those who indicate an interest in fraternity living will be contacted by the various fraternities during the spring and summer before their matriculation in the university. Invitation for living in a fraternity will generally be extended by the fraternities during the summer before matriculation; however, if necessary, these arrangements can be made through the Interfraternity Council upon arrival on campus for the fall semester.

Family Housing

For married students with families, the university operates three housing projects and more

are being developed. Apartments in these projects in 1977-78 rented for about $115-160 per month. One-, two-, and three-bedroom units are available; some are not furnished. A $50 advance deposit is required. To apply for an apartment, write to the Family Housing Office. Day care facilities are available on a first-come-first-served basis.

Student Services

Student Rights, Conduct, and Records

The "Statement of Student Rights," "Student Code of Conduct," and "Student Records Policy" are published in the time schedule of classes. All 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 matriculting 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 Planning and Placement Center are avilable 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. Both formal and informal assistance, from faculty advisers and specialists, is available once sought.

Student Advisory Services

The Office of Student Advisory Services has the responsibility to assist students with problems and serves as a communication link The office deals with individual and group problems and serves as a communication link within the university structure. Special advisory services for such groups and individuals as the residence hall system, the fraternity/sorority system, off-campus dwellers, veterans, international students, and ethnic minority students are provided. Close contact is maintained with student government. Referrals to other student-service agencies are arranged. Advisers in each residence hall are also provided. The New Student Orientation Program, Women's Center, Day Care Center, and National Student Exchange are also coordinated by this office.

Learning Resource Center

The Learning Resource Center offers academic assistance to all university students through a variety of services, from courses in basic study skills to individual consultations. A staff of experienced specialists in reading, composition, learning, and study skills provides drop-in help for those who need to improve reading speed, comprehension, note-taking, or test-reviewing techniques. The center maintains a modest library of learning skills workbooks and reading pacers for the use of students. Included are programmed mathematics texts for those who wish to make up high school deficiencies in algebra or geometry. Self-administered diagnostic tests are available for students who may evaluate their learning style and skills with the help of the staff. Study skills classes, which include the diagnostic tests, general study methods, and speed-reading practice, run in six-week sessions twice each semester. One evening class runs each session.

The center also provides tutorial services for lower-division courses. Tutors are trained to work with individuals or small groups of students having difficulty in any particular lower-division class. Students interested in becoming tutors will learn accountability techniques, informal diagnosis and evaluation, and will be briefed on study problems most often encountered. University credit and a small amount of pay are available for qualified tutors.

Study Abroad

The university maintains an informational office for many kinds of foreign study and travel by Idaho students and faculty. The study abroad adviser is also the university's representative in the NICSA consortium (Northwest Interinstitutional Council on Study Abroad) involving nine other colleges and universities in the Northwest in addition to the University of Idaho.

University of Idaho students may earn credit for foreign study and study-touring in the following ways:

1. NICSA resident study—students register for certain courses in London, England, or Avignon, France, and earn University of Idaho credit directly.

2. Official University of Idaho study tours—credit is given under Ed 273 and 473, SocSc 185 and 385, and departmental "special topics" courses 204 and 404.

3. Directed study—students 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. Directed study in social science—as above, but not limited in scope to the subject matter of one department or one major. Study-touring for the purpose of education in the wide framework of any, more than one, or all of the social sciences and the humanities is provided for. The student presents a proposal to the social science coordinator before the travel, not after the student's return to the campus.

5. Course challenge—certain courses may be challenged on the basis of knowledge gained abroad. See regulation D-4.

6. External study/experience—credit may be awarded to students for knowledge and/or competence gained in foreign travel. See regulation I-5.

7. Transfer of credits—work in other accredited institutions of higher learning can be recognized by the transfer of credits to the University of Idaho. This work may be in the study abroad programs of other American schools or in foreign schools.

For more information about foreign study or travel, call or visit the Study Abroad Office located in the Summer Sessions Office, Rm. 114, Continuing Education Building (telephone: 885-6485).

National Student Exchange

The National Student Exchange (NSE) provides state-college and university students an opportunity to become better acquainted with social and educational patterns in other areas of the United States. Governed by the philosophy that participation is essential to education, the NSE encourages students to experience new life- and learning-styles, appreciate differing cultural perspectives, learn more about themselves and others, and broaden their educational preparation through courses or programs that may not be available on the home campus. The NSE consortium currently includes 40 colleges and universities. Depending on the exchange plan of the host school, an exchange student is assessed either in-state tuition and fees at the host campus or the appropriate University of Idaho fees and tuition. 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 the Women's Center (telephone: 885-6285).

Minority Student Programs

The Office of Minority Student Programs helps ethnic minority and disadvantaged students adjust to life at the university. The office staff assists with application and matriculation procedures and offers academic, financial, and personal counseling to any students who request it. The staff includes Black, Native American, and Chicano counselors who serve as liaisons between their respective groups and the university. Minority Student Programs conducts extensive recruiting of qualified minority students for the university and provides information on summer and permanent employment available to minority students in many fields.

All minority students are eligible for a full range of federal financial assistance as well as the opportunity to share in all university financial aid programs. In addition, several scholarships are available to minority students based on need and academic performance.

Student Evaluation of Teaching

Through the Student Evaluation of Teaching (S.E.T.) program, all courses and instructors on campus are annually evaluated by students. The information gathered is used by instructors in improving their teaching and by departmental executives and committees in assessing teaching performances of faculty members. Summary results of the statistical part of the evaluations are public, and students may consult these, along with any material on the course provided by the instructor, in the S.E.T. office, Rm. M-8, Faculty Office Complex East.

Counseling Center

The Student Counseling Center offers specialized counseling and testing services to students and spouses without charge. Professionally trained counseling psychologists are available to discuss educational and vocational plans, personal problems, concerns about study skills, and any other matters of concern related to the student's progress in college. The goal of counseling is to assist the student in evaluating his or her current situation and arriving at suitable conclusions based on the information at hand. Vocational/educational counseling necessitates an evaluation of the student's interests, abilities, and information about available opportunities. Evaluation of the information usually results in sound decisions. Personal problems, although more complicated, are resolved with a similar process.

The center maintains an up-to-date vocational library on over 250 occupations that students may use at any time during the normal operation

of the center. The center also serves as the university representative for a variety of national testing programs including the Graduate Record, Law School Admissions, Admission Test for Graduate Study in Business, Miller Analogies, Dental Aptitude, and Medical Aptitude tests. Bulletins of information and application blanks are available here.

Student Health Service

The Student Health Service is open when the university is in session, affording care to all students who have paid the Student Health Service fee. Care may also be provided on a fee-for-service basis to such persons as spouses, students who have not paid the Student Health Service Fee, and others at the discretion of the director of the Student Health Service.

Weekday, scheduled outpatient care is available for fall, spring, and summer sessions, except during vacations. Inpatient care is available fall and spring semesters, except during vacations. Emergency care is available 24 hours a day whenever the university is in session.

Routine laboratory and x-ray studies are available at the Student Health Service; other studies are referred to area facilities. Psychiatric evaluation and treatment are available through the Student Health Service by consulting psychiatrists. Special services are available depending upon the training and skills of the staff. Patient needs beyond the scope of the staff and facilities of the Student Health Service are referred elsewhere as appropriate, at the patient's expense unless covered by university or other health insurance.

Fees are charged for certain studies and special services such as lab tests, x-rays, medications, and procedures consuming more than minimal materials that must be repurchased. Inpatient fees are for meals only for the first seven days; there is a moderate additional charge thereafter.

History forms mailed to new students during the summer before enrollment should be completed and returned soon after they are received in order to be in the Student Health Service files when students register.

Students and interested family members are encouraged to visit the Student Health Service and acquaint themselves with the services available.

Health and Accident Insurance Coverage

An optional health and accident insurance plan is available to University of Idaho students and their spouses/children. This coverage is intended to supplement the services provided by the Student Health Service described above and is designed to offset expenses resulting from a major accident or serious illness that might require medical care, hospitalization, and surgery beyond services provided through the Student Health Service. This plan does *not* cover office and home calls except as provided by the Student Health Service. There is a deductible provision for dependent spouses and children of students since these dependents are not covered by regular student health services. This student health and accident insurance plan provides coverage for the entire 12-month period whereas the services of the Student Health Service are available only during the time the university is in session. This insurance is especially useful in paying for a specialist's fees when recommended by a Student Health Service physician.

Financial Aid

Financial aid is available through the Office of Student Financial Aid to qualified students who are in need of financial assistance to meet the normal costs of college attendance by helping them secure part-time employment, scholarships, National Direct Student Loans, Federal Guaranteed Student Loans, and Basic and Supplemental Educational Opportunity Grants. Students applying for admission to the University of Idaho and seeking financial aid may make application by completing the financial aid application blank that is sent by the Admissions Office, together with a descriptive brochure, to each new applicant. In order to receive full consideration, completed applications for financial aid must be received by March 15 for the following fall semester. If application documents or the descriptive brochure were not received, they may be obtained from the Office of Student Financial Aid.

Students who qualify under the College Work-Study Program (with respect to a definite and demonstrable financial need) may obtain part-time employment with the university. Application for work-study is made as part of the general application for financial aid. The Student Financial Aid Office also assists students in finding other part-time employment. In most cases part-time job placements cannot be made before a student actually arrives in Moscow and has registered.

Restrictions on Financial Aid. Any student will be automatically ineligible for financial aid when:

Having Completed (Number of Credits)	Cumulative GPA is Less Than
0 through 11	1.25
12 through 23	1.45
24 through 32	1.60
33 through 64	1.80
65 or more	2.00

When undergraduate students use financial aid, progress toward a degree at a reasonable

rate of at least 12 semester credits completed each semester must be expected.

Upon receiving written petition from the student, the appropriate academic dean may waive the above criteria in a signed memorandum to the director of student financial aid. Students served by Minority Advisory Services who find that they must petition may wish to seek advice from one of the minority student advisers in that office. It is to be noted that financial aid eligibility criteria differ from the academic criteria contained in regulation L-5.

Nonmatriculated students should note the section headed "Admission as a Nonmatriculated Student" earlier in this part 2.

Veterans' Benefits for Educational Assistance

A veteran is entitled to educational assistance if he or she has served at least 181 days of active duty, any part of which occurred since January 31, 1955, according to Public Law 89-358. 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. Additional information, advice on the benefits, or application forms may be obtained by writing to the veterans' adviser, Office of Student Advisory Services.

Special Awards

Many awards are made each year in recognition of outstanding achievement in both academic and nonacademic pursuits. The listing of specific awards and recipients is included in the annual commencement program. A description of each award may be obtained from the Student Union program coordinator.

Recreational, Social, and Extracurricular Activities

The Student Union is the recreational and social center for the university community. Facilities include bowling alleys, billiard tables, music listening rooms, cafeteria, snack bar, ballroom, theater, and meeting and banquet rooms. Dances, art exhibits, speakers and forums, weekend movies, concerts, and games tournaments are scheduled in the Student Union Building during the school year. The twice-weekly campus newspaper, the *Idaho Argonaut,* and the yearbook, the *Gem of the Mountains,* are published by ASUI (Associated Students University of Idaho). These publications offer opportunities for those interested in journalism or photography. ASUI (to which every student who pays regular fees belongs) supports outdoor recreation programs, drama and music groups, and provides occasions for entertainment and participation. The university competes in intercollegiate football, basketball, baseball, track, tennis, swimming, golf, cross country, and wrestling. Extensive intramural athletic programs are available for both men and women under the direction of the Division of Health, Physical Education and Recreation. The ASUI operates an eighteen-hole golf course adjacent to the campus. Recreational facilities located on the campus include the Kibbie-ASUI Activity Center, indoor and outdoor tennis and handball courts, and swimming pools.

Student Organizations

University of Idaho students may organize or join associations to promote their common interests. There are many 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 program coordinator, Student Union. The annual publication of the ASUI, entitled *Student Handbook,* contains a description of current student organizations.

Career Planning and Placement Center

Organized to assist University of Idaho students plan their careers, the Career Planning and Placement Center (1) helps students to identify, affirm, or—if necessary—modify their career objectives and (2) aids them in obtaining employment according to their training, ability, and experience. Toward the fulfillment of these objectives, the center maintains a career-planning library, available for use by any University of Idaho student, and serves as the central contact agency between students from all colleges of the university and prospective employers.

At specific times throughout the year, business, government, industry, and educational institutions send their representatives to the campus for the purpose of interviewing students and graduates. Arrangements for these visits are made with the Career Planning and Placement Center. This service is available to all students purposefully identified with programs of study at the university. All candidates registering with the center must be sufficiently well-known by faculty members so that a minimum of two recommendations can be obtained.

If students wish to avail themselves of these services, they must register with the center in advance. The initial contact with the center must be made by the student. There is no charge for this initial registration. All registration and services are strictly on a voluntary basis.

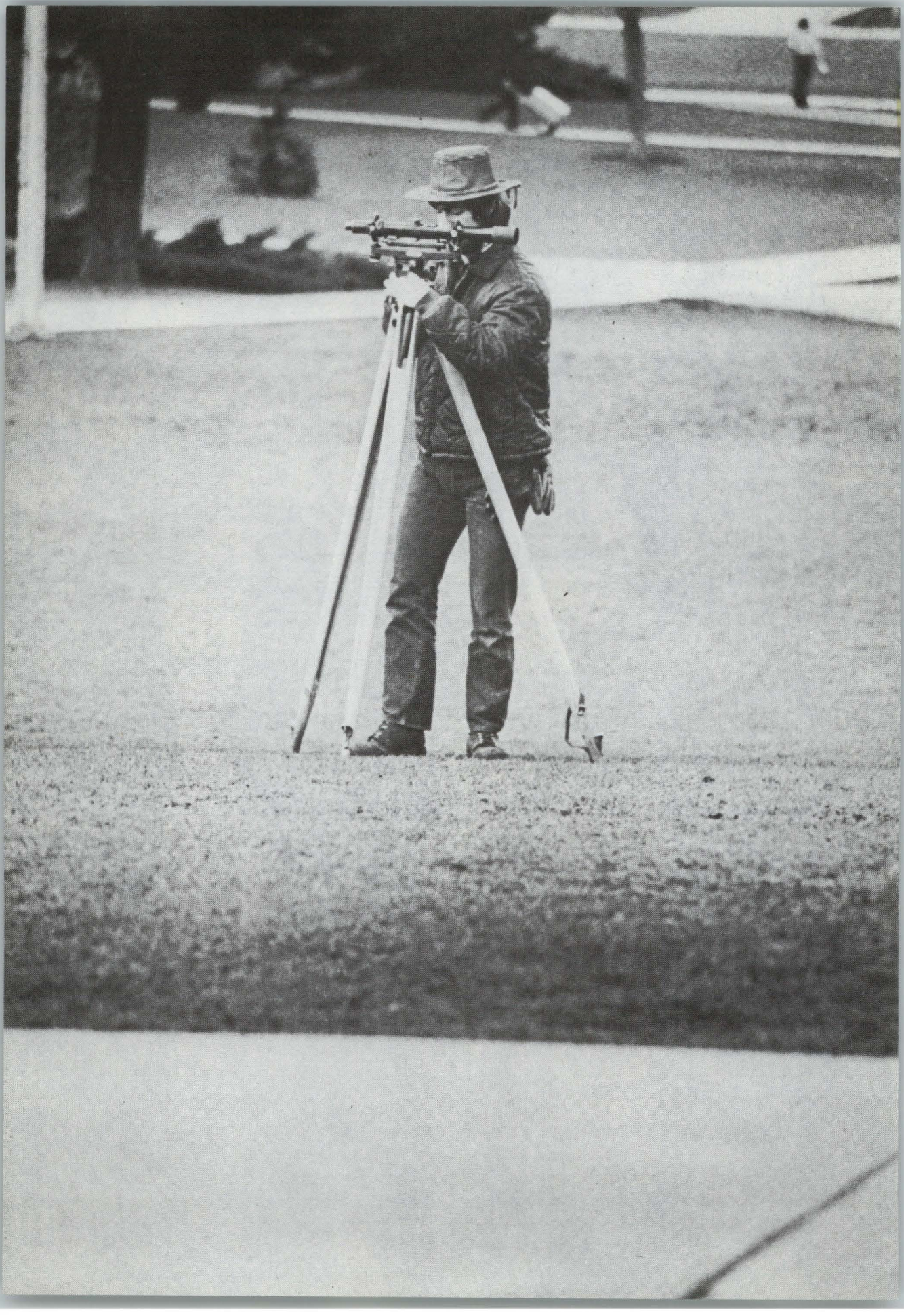
Alumni Association

The University of Idaho Alumni Association is composed of all graduates, former students, and honorary alumni. Activities of the 37,000-plus members are coordinated by a full-time director of alumni relations and an elected executive board, including the ASUI president. These leaders, along with area chairmen in Idaho and chapter officers throughout the country, keep alumni informed of their alma mater, encourage their support of its operation, and apprise university officials of alumni opinions. The association honors outstanding graduates by electing them to the Alumni Hall of Fame, selects honorary alumni, honors superior intramural athletes, and presents scholarships to children of alumni. Areas of recent emphasis include enlisting alumni experts to serve on university advisory boards, establishing and increasing alumni chapters nationally, strengthening ties with present students, and supporting Development Office functions.

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; 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. In addition to the usual services of worship and church school classes, most of the churches help maintain and staff campus-oriented religious centers. Church addresses are readily available in the Moscow phone directory.



General Requirements and Academic Procedures

These regulations were in effect as of January 1, 1978. See the time schedule of classes for any substantive changes that may occur before the beginning of the 1978-79 academic year.

The following procedures and regulations have been adopted to help students, faculty, and administrators successfully carry out the overall academic program of the university. It is the responsibility of the registration adviser, major professor, or dean to assist students to understand and comply with academic procedures. The registrar assists by checking student records for compliance with the regulations in this catalog section. Students, with the help of faculty advisers, should check their records at each registration to ensure that they are systematically and progressively fulfilling their degree requirements. Students are responsible for knowledge of and compliance with academic procedures and standards, but should seek guidance whenever questions arise. An academic provision or standard is waived only when a student successfully petitions the appropriate departmental, college, or university-level committee. Student petitions for exceptions to the requirements and procedures in this catalog section should be presented to the Academic Deans' Council on forms available in college offices.

A—Matriculation

Applicants for enrollment in any course offered by UI for college credit, except correspondence study and extension, 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 for the succeeding semester. However, those enrolled in the spring who plan to enroll in the summer should submit an application at least three weeks before the opening of summer session. Similarly, students entering UI in the summer who were not enrolled during the spring and who plan to continue in the fall must apply for a registration form at least three weeks before the opening of the fall 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.

B-2-b. At the beginning of each academic session, students with their adviser's 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 receiving departmental validation for each course, the student files the completed registration form with the registrar. After payment of fees, registration is complete and 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.

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. Nonresident Courses. Students in residence are permitted to carry extension or correspondence study courses for college credit only with the prior written approval of their academic dean. Credit for extension or 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 shall 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 Students in Graduate Courses. Undergraduate students may register in graduate courses under the procedures outlined in the graduate bulletin with the prior written approval of the instructor of the course, the student's adviser, and the dean of the Graduate School.

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 per 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, undergraduates 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 4; **(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 head 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 their major professor (or adviser in the case of an unclassified student) and the graduate dean, graduates 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 which 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, graduate students must earn a C or above. A grade of D will be converted to an F on the student's records.

(5) Unclassified students may enroll for courses under this option with the approval of their adviser (if assigned) and the graduate dean; however, if 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 last day to add courses or change course sections. Students may make these changes by securing the signatures of their major professor and dean.

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 set forth 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

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 final four weeks of the semester, 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.

D—Credit and Continuing Education Unit

D-1. Credit Defined. 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 clock hours of scholarly activity per week. Ordinarily one 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.

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 sessions 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 sessions.

DESIRED CHANGE	First two weeks of classes*	Third week of classes to last four weeks of the semester**	Last four weeks of the semester***
Drop course.	File form with registrar. No grade recorded.	File form with registrar. Grade recorded as withdrawal (W).****	For compelling reasons only, upon successful petition to Academic Deans' Council (file petition through dean's office). Grade recorded as withdrawal (W).****
Add course.	File form with registrar.	File form with registrar. Only for accelerated courses or by petition through dean's office. Permission of instructor required.	
Change course section.	File form with registrar.	By petition through dean's office in special cases only.	
Change from or to audit or pass-fail basis.	File form with registrar.	Not permitted.	
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 (W). ****	For compelling reasons only: complete medical withdrawal or petition Academic Deans' Council (file petition through dean's office). Grade recorded as withdrawal (W). ****
Change in undergraduate curriculum or major. (Consult the graduate bulletin 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 counselling 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 college of the university to another; however, any student enrolled in the university may transfer to the General Studies Program by contacting 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 75 percent of the class-meeting hours have been completed.

***In the case of accelerated or short courses, after 75 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.

D-2. Credit-Load Limitations.

D-2-1. Undergraduate.

(1) Regular Semester. Full-time undergraduate students may register for a maximum of 20 credits a semester. This number may be increased to 22 with the approval of the student's academic dean. Registration for more than 22 credits must be approved by the Council of Academic Deans (submit petitions via dean's office). (Also see J-5.)

(2) Summer Session and Intersessions. The limitations corresponding to those in D-2-a-(1) during the regular eight-week summer session are 10 and 11, respectively. When registering for workshops or accelerated courses in conjuntion with the regular eight-week summer session, students are considered to have exceeded the credit-load limitation when the rate of accumulation of credits (credit hours divided by length of course) exceeds 1.25 credits a week. The same limitation on the rate of accumulation applies during intersessions, presessions, and postsessions. A student may exceed the limitation on rate of accumulation for a period of one week during a summer session with permission of his or her adviser. Registration in excess of the above limitations must be approved by the Council of Academic Deans (submit petitions via dean's office).

D-2-b. Graduate School. During the fall and spring semesters, there is no maximum credit load for students in the Graduate School, except for instructional and graduate assistants, who are limited to an average of 12 credits. During the eight-week summer session, the maximum credit load for graduates is 10 credits, except for instructional and graduate assistants, who are limited to six credits. Graduates (other than instructional assistants and graduate assistants) who wish to take more than 10 credits in the summer session must successfully petition the Academic Deans' Council (submit petitions through the graduate dean's office). Other exceptions to this regulation require the approval of the dean of the Graduate School.

D-2-c. Full-Time Employees. Full-time UI employees may register for a maximum of six credits each semester and three credits during the eight-week summer session. Written approval by the employee's department chairman and dean must be attached to the registration form.

D-2-d. Nonmatriculated. Nonmatriculated students who have registered for two semesters pursuing 12 credits or more are required to petition the Admissions Committee if they wish to continue as nonmatriculated students pursuing more than a 12-credit load. See "Admission as a Nonmatriculated Student" in part 2.

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 "Applicants With Previous College Credit" in part 2; also see E-4 and J-5.)

D-4. Challenged Courses (Credit by Examination). Students may challenge 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. (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 students have been granted permission to challenge a course by the instructor, by the chairman of the department in which the course is offered, and by their academic dean, the extramural-credit fee is paid and the completed petition is then 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 chairman of the student's major department and the dean of the Graduate School.

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, 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 defini-

tion, 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.

D-7. Videotaped Courses. Under procedures developed by the individual colleges and approved by the University Curriculum Committee, residence credit may be granted for work done in videotaped courses.

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; **P**-pass (see below); **IP**-in progress (see E-2); **N**-unsatisfactory and must be repeated (used only in Eng 103 and 104).

E-1-b. Grades of P may be reported at the option of the department on a course-by-course basis in noncompetive courses such as practicum, internship, seminar, directed study, and independent 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 course, 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. Grades in Graduate Thesis or Dissertation.

E-2-a. The grade of IP (in progress) may be used in courses 500 (Master's Research and Thesis) and 600 (Doctoral Research and Dissertation). When the thesis or dissertation is accepted, or when a student ceases to work under a particular major professor, the IP grades are to be removed (see below). Grades of IP are considered to represent at least grades of B or P. If, in any given semester, the major professor considers the student's progress unsatisfactory, a regular letter grade should be assigned.

E-2-b. 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. The following scale is used in computing grade point averages for all courses attempted at UI: A-4, B-3, C-2, D-1, F-0. Grade points are not computed for transfer, correspondence study, extension, advanced placement, credit by examination, or for courses graded, I, IP, P, W, or N. However, credits earned at other recognized institutions that are earned subsequent to regular enrollment for at least one semester or summer session at UI are computed in the student's UI cumulative grade point average on the same basis as credits earned at UI. "Regular enrollment" does not include enrollment as a nonmatriculated student.

E-5. Raising a Grade by Repeating the Course. A student who has received a D or F in a course at UI or elsewhere may repeat the course IN RESIDENCE on the UI campus in an effort to raise the grade, provided a more advanced course for which the first course is a prerequisite has not been completed in the meantime. 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 law students.)

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 instruc-

tor who submitted the original grade. If it is determined that a grade change is warranted and the instructor cannot be reached, the chairman of the department may assume the prerogatives of the instructor in connection with the grade change.

F—Incompletes

F-1. An incomplete is assigned only when the student has been in attendance and has done satisfactory work 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 not be assigned in the case of withdrawal from UI unless the withdrawal occurs within the last three weeks of the semester. If a final grade of incomplete is recorded, the instructor shall indicate in writing on the class roster what the student must do to remove the deficiency. The instructor shall also indicate what permanent grade is to be entered on the student's record in the event that the incomplete is not removed by the deadline.

F-2. Removal of Incompletes. Incompletes should be removed within six weeks after the first day of classes of the term in which the student next returns to UI. Incompletes not made up before that date automatically revert to the grade indicated by the instructor on the class roster (see item 1, above) unless the student has previously 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 is not removed within the six-week period, it may be extended once for a period not to exceed one calendar year from the date such extension is approved. If an extension is granted, incompletes not made up before the expiration date automatically revert to the grade indicated by the instructor on the class roster. It is the student's responsibility to see that incompletes are made up before the expiration date. Removal-of-incomplete cards must be received by the registrar before these dates. In some cases a student's eligibility to reregister is contingent upon removal of incompletes. In such cases an extension of time for removal of incomplete grades may not be granted; moreover, if students become academically disqualified (see L) after removal of the incomplete, their registrations may be cancelled.

F-3. Incompletes Received at End of Final Term. An incomplete in a required course received by a candidate for a degree at the end of the semester or summer session in which the requirements for the degree are otherwise completed reverts immediately to the grade specified by the instructor on the class roster; however, the student is permitted to complete the course work involved within the usual time limit and raise the grade on the permanent record.

F-4. Extension Courses. Incompletes in extension courses must be removed within one year. Incompletes not made up within one year automatically become withdrawals. No extension of time will be granted. Students may register for courses during the allotted time provided that the total load, including the incompletes, does not exceed six semester credits. If, during the year, students enroll for residence courses, F-2 applies.

G—Withdrawal from the University.

G-1. Standard Withdrawal Procedures.

G-1-a. A student who wishes to withdraw from UI before the final four weeks of the semester 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 start of the final four weeks of the semester.

G-1-b. A student is permitted to withdraw from UI during the final four weeks of the semester only for compelling reasons and after approval by the Academic Deans' Council *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 during the final four weeks of the semester are forwarded *via the student's academic dean* to the Academic Deans' Council on forms available in department and college offices. If the student's petition is approved, the Academic Deans' Council 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. If a student wishes to leave UI for medical reasons, the withdrawal process is started by going to Student Advisory Services (241 UCC). The dean for student advisory services will request the director of the Student Health Service to evaluate the request. The director may request substantiating information from whatever sources are deemed necessary. On the director's affirmative written recommendation, the dean will assist the student in completing official withdrawal from UI.

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. Under such circumstances, 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 shall notify the student and the director of the Student Health Service that such an evaluation is to be conducted.

(1) Request for Evaluation. Upon notification from the dean for student advisory services, the director of the Student Health Service shall request 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 shall be presented to the director with a specific recommendation as to whether or not a medical withdrawal is warranted.

(2) Evaluation Conference. The director of the Student Health Service shall provide 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 shall refer 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 shall transmit 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 shall be 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 a student's taking the desired action, the director shall summarize 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 shall be sent to the student. The dean will process the withdrawal as mandatory, but involuntary.

(6) Appeal. A student may appeal to the vice president for student and administrative 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 will 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 upon 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.

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 shall 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 of classes. Instructors may deviate from the schedule only upon the recommendation of the college dean and prior approval by the academic vice president.

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 shall not 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 shall 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 shall 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 shall 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 exam are compelling (such requests require approval by the instructor and by the chairman 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 chairman of the department concerned, undergraduates 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 initiated 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 upon 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 CEEB 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, 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 department chairman 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 the registrar.

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

J—General Requirements for Baccalaureate Degrees

Candidates for baccalaureate degrees must fulfill the following requirements. (See the catalog of the Graduate School 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. For the minimum number of credits required in each degree program, see the major curricula of the various degree-granting units in part 4. A minimum of 36 credits in courses numbered 300 or above is required for a baccalaureate degree.

J-2. Residence Requirements.

J-2-a. After a candidate is within 40 credits of completing the total number of credits required for the particular baccalaureate degree sought, he or she must complete IN RESIDENCE, on the UI campus, at the Idaho National Engineering Laboratory, or in those videotaped courses specifically approved for residence credit, a minimum of 32 credits in courses that have UI

catalog numbers. Exceptions are made for study abroad and student exchange programs with prior approval by the student's academic dean. Among the last 40 credits, the candidate may count a maximum of eight credits earned at other senior colleges or universities, or through any of the following means: extension, correspondence study, bypassed courses, credit by examination, College Level Examination Program (CLEP), external study/experience, technical competence, or certain educational programs sponsored by the armed forces.

J-2-b. Candidates for preprofessional degrees (e.g., B.S.Pre-Med.) that require the completion of professional courses not offered at UI must complete their junior year (32 credits) in residence on the UI campus.

J-2-c. For special requirements applicable to students studying at adult education centers, see "Continuing Education, Summer Sessions, and Special Programs" in part 4.

J-3. Subject Requirements.

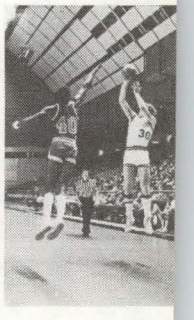
J-3-a. English Composition. The basic requirement for graduation is proficiency in written English equal to that required for the successful completion of UI courses Eng 103 and 104. The following provisions apply to all students:

(1) Students who attain a satisfactory score on the CEEB (College Entrance Examination Board) English Achievement or Scholastic Aptitude Test (Verbal), or the ACT (American College Testing) English Test, are deemed to have satisfied all of the requirement. Upon the English Department's evaluation of the essay portion of the CEEB Advanced Placement Program Tests, students who attain a score of 4 or 5 on the objective part may be deemed to have satisfied all of the requirement. Students who satisfy the requirement in either of these ways will be awarded credit and a P in Eng 103 and 104.

(2) Students who have not satisfied the requirement in this manner will be placed in either Eng 103 or 104, depending on their scores on the tests cited above. Students placed in Eng 104 will take the proficiency test given by the English Department and based on their performance will be judged to have satisfied all, half, or none of the requirement. Those deemed to have satisfied all of the requirement will be awarded credit and a P in Eng 103 and 104. Those deemed to have satisfied half of the requirement must take Eng 104, but will be awarded credit and a P in Eng 103.

(3) Although UI accepts credits in comparable writing courses taken at other recognized institutions, students who have taken such courses but who have not satisfied the requirement through the provisions of paragraph 1, above, must demonstrate that they have attained proficiency equivalent to that required for the successful completion of Eng 104 by passing before graduation the proficiency test given by the English Department. Such students may attain the required proficiency through independent study or by taking UI courses. (See credit limitation in J-5-d.)

J-3-b. Physical Education. Two activity courses (selected from PE 105, 106, 107, 108, and any courses jointly numbered with these), one credit per course, each course taken during a different academic session, for a total of two credits. It is expected that these courses will be taken during the freshman year; they must be completed before graduation. This requirement does not apply to students who are: **(1)** excused by the UI physician, **(2)** 30 years of age or over, **(3)** majoring or minoring in physical education, **(4)** mothers, **(5)** veterans whose military service was of at least one year's duration, or **(6)** certified by the Division of Health, Physical Education and Recreation as having demonstrated equivalent proficiency. No credit shall be granted in connection with such exemptions. Students who transfer from other accredited institutions with 26 or more semester credits will be deemed to have fulfilled this requirement. Students who transfer with 14 or more (but less than 26) semester credits, and who have not previously completed two terms of physical education activity courses, will be required to complete only one activity course here.



J-4. Grade Requirements. To qualify for the baccalaureate degree, a candidate must have a cumulative grade point average of 2.00 or better for all residence courses attempted at UI. 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. Sixty-four credits earned at junior or community colleges, or one-half of the total credits required for the student's intended baccalaureate degree. Note that J-2 provides that after a candidate is within 40 credits of completing the total required for the baccalaureate degree sought, no credits earned at junior or community colleges may be counted.

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, extension courses, credit by examination, or advanced placement (such as CLEP, CEEB 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 Dean's Council (file petition through dean's office).

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 courses in reading, writing, and numerical skills, such as GenSt 101, 106, 112, 113, and 150. Credits in remedial courses may be counted toward general elective credit only.

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 as published in part 4. The pertinent requirements are those contained in the catalog issue that was in effect at the time of or subsequent to the candidate's enrollment as a degree-seeking student here; however, transfer students may elect to satisfy the requirements of the catalog issue that was in effect at the time of entry into UI of the class to which they were assigned on the basis of the number of credits transferred. In any case, the catalog issue designated must have been in effect within seven years of the commencement at which the candidate is to receive the degree.

J-7. Second Baccalaureate Degree.

J-7-a. Students may complete the requirements for different majors and concurrently receive two different baccalaureate degrees (e.g., B.A. and B.S.Ed.) from UI upon fulfilling 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 general studies, general agriculture, and general business curricula. Students who plan to receive 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-7b. 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 residence on the Moscow campus 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. For exceptions to this regulation, see notes with the general studies, general agriculture, and general business curricula.

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 residence on the UI campus 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.

K—Academic Honors

K-1. Graduation with Honors. Honors are awarded at graduation upon recommendation of the faculty of the college from which the student graduates. Honors are not awarded with degrees earned in the Graduate School.

K-2. Dean's List. Students who are carrying the specified number of credits and attain the required grade point average for a given semester are placed on lists prepared for the college deans. These lists are publicized within UI and are distributed to news agencies. The grade point average and numbers of credits required by the various degree-granting units are listed below:

College or Program	GPA Required	Minimum Credits*
Agriculture	3.30	14
Business and Economics	3.30	14
Education	3.30	14
Engineering	3.30	12
Forestry, Wildlife and Range Sciences	3.00	15
General Studies	3.00	14
Law	3.00	12
Letters and Science	3.30	14
Mines and Earth Resources	3.30	14

*Credits for which a student was graded P are not computed in this minimum, except for Ps in Eng 103 and 104 and in physical education activity courses.

L—Academic Probation, Disqualification, Reinstatement

L-1. Academic Probation.

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 that 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. 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 a 2.00, is attained. After being academically disqualified, students must be reinstated in order to reregister.

L-3. Reinstatement.

L-3-a. After a disqualification, students may be reinstated (i.e., have their eligibility to continue restored) by petition to and favorable action by their college.

L-3-b. After their first disqualification, students may be automatically reinstated by remaining out of UI for at least one semester.

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

L-3-d. Students who attend another institution while disqualified must meet requirements applying to the admission of transfer students in order to reenter UI.

L-3-e. Students who are disqualified and reinstated by their college are reinstated on academic probation.

L-4. Dean's Referral. 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.

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. Regulation F-2 provides that in cases where a student's eligibility to reregister is contingent upon removal of incomplete grades, the student may not be granted an extension of time for such a removal.

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

L-8. This regulation L does not apply to nonmatriculated students or to students in the College of Law or the Graduate School.

M—Attendance, Repeated Absences, Field Trips, 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 upon 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 in the Student Health Service; or **(c)** 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, *with the exception of* "local trips" that are taken in the immediate vicinity of UI—within approximately 15 air miles of the campus—during regularly scheduled class time or such times as do not conflict with other classes (such local trips are authorized under procedures established by the individual academic divisions and are paid for from funds allocated to the division).

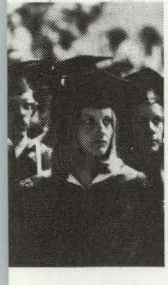
M-3-a. Missed Class Work. Students participating in field trips, as defined above, or other official UI activities are responsible for contacting the instructors of any classes that will be missed in order to make prior arrangements for making up missed class work.

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

(1) Each separate field trip provided for in the description of a course in the catalog that will encompass *no more than* three school days requires prior approval by the department in accordance with divisional procedures (application for approval should be made at least one week before anticipated departure). Each such trip that will encompass *more than* three school days also requires prior approval by the University Curriculum Committee and by the academic vice president (at least two weeks lead time should be provided to allow for the additional approvals).

(2) Each separate field trip NOT provided for in the course description that will encompass *no more than* three school days requires prior approval by the department chairman and the dean of the college, as well as by the academic vice president (application for approval should be made at least two weeks before anticipated departure). Each such trip that will encompass *more than* three school days also requires prior approval by the University Curriculum Committee (at least two additional weeks lead time should be provided to allow for the committee's approval).

(3) After each separate field trip in a specific course, two weeks must elapse before an additional field trip may be scheduled in that same course, unless prior approval is obtained from the University Curriculum Committee.



M-3-c. Approval of Other Official Student Travel. Administrative approval for official student travel that is NOT course related is obtained from the vice president for student and administrative services (application for approval should be made at least two weeks before anticipated departure).

M-3-d. Emergencies. In the event that the above approval deadlines cannot be met, the emergency nature of the trip must be approved by the academic vice president before the trip.

M-3-e. 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. Studetns missing required field trips provided for in the course description must also pay their proportionate share, unless excused by the instructor in charge of the trip.

M-3-f. Field-Trip-Completion Deadline. All field trips and other UI-approved student travel must be completed before the start of the last two weeks of the semester.

M-3-g. Unofficial Student Travel. Travel by students that has not been officially authorized by the appropriate UI agent is not covered by student accident insurance.

M-3-h. Vehicle Information. Information concerning student-owned vehicles (registration, insurance, driver's license, etc.) to be used for field trips or other official UI business must be filed in the Controller's 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 student-owned vehicle in a given academic year.

N—Class Rating

Class ratings of undergraduates are determined as follows: sophomore—26, junior—60, and senior—94.

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 Graduate School must carry 12 credits (or equivalent in audits, zero-credit enrollments, etc.) each semester to be classified as full time.

O-1-b. For fee and tuition purposes only, students carrying eight or more semester hours (or equivalent in audits and zero-credit registrations) and all graduate/instructional 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 Graduate School are considered full time: **(1)** when registered for nine credits (or equivalent) of course and/or thesis work; **(2)** when registered for less than nine credits but paying full-time student fees and certified by the major professor and the dean of the Graduate School as being engaged in the equivalent of nine credits of study in the pursuit of course work, research, preparation for ex-

MINIMUM CREDIT LOADS FOR VETERANS' BENEFITS

Benefits	Academic Year Undergraduate	Academic Year Graduate	Summer Session Undergrad. & Grad.
Full	12 or more	9 or more	6 or more
Three-fourths	9-11	6-8	4-5
Half	6-8	4-5	3
Fees & tuition only	less than 6	less than 4	less than 3

aminations, or other activities of an academic nature; or **(3)** when on regular appointment as an instructional assistant or graduate assistant.

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 in the Registrar's Office).

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

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

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 shall 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 department chairman 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 Controller's Office. (See "Fees and Expenses," in part 2.) The last day for filing applications for undergraduate degrees is the beginning of the third week of the semester or before the beginning of the second week of summer session. The last day for filing applications for advanced or graduate degrees is the beginning of the fourth week of the semester or before the beginning of the third week of summer session. If applications are received by deans after these dates, there is an additional fee if students wish to receive their diplomas at the close of the term. 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. 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 regular basis, the limitation must be approved through faculty channels and will be made part of the catalog description of the course. Any student denied admission to a class may appeal in writing to the academic vice president for a review of the particular circumstances involved.

O-6. Student's 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 of classes. Where it is impossible to determine the teaching assignements 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 time schedule of classes.

O9. Rights Reserved to the University.

O-9-a. Catalogs, bulletins, course and fee schedules, etc., are not to be considered as binding contracts between the UI and students. UI and its divisions reserve 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 shall go into force whenever the proper authorities so determine, and shall apply not only to prospective students but also to those who are already matriculated. 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 the graduation requirements, and who are making normal progress toward the completion of those requirements, will have the opportunity to complete the program that is to be withdrawn.

O-9-b. UI also reserves the right to deny a student the privilege of reregistering and the right not to release a student's records, or any information based on them, when the student has failed to discharge any obligations to UI. Students may verify the status of their financial obligations by checking with the Controller's Office in the Ad. Office Bldg.

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General Studies Program

Francis Seaman, Director (111 Admin. Bldg.).

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 college of the university they should enroll for a degree. 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 one 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 a regular college 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). Students may remain in the advisory phase of general studies for no more than five semesters. 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 tc provide a maximum of flexibility for undergraduates in planning their program of studies. Since the only specific subject requirements are the general university requirements in English composition and physical education, students can plan their programs to the best advantage of their particular educational objectives. This means that students must bear the complete 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 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, including the required English composition and physical education activity courses, 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. Candidates for the B.G.S. degree must register for and complete at least the last 16 credits applicable toward the degree after enrolling in the General Studies Program.

Suggestions to Students. Students are advised not to make a firm decision with respec' 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. degree "look ahead" to see in which departments he or she wishes to accumulate the required 48 credits in upper-division course (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 Agriculture

Auttis M. Mullins, Dean (53 Iddings Wing, Ag. Sc. Bldg.); R. C. Dobson, Associate Dean and Director of Resident Instruction; James L. Graves, Associate Dean and Director of the Cooperative Extension Service; Raymond J. Miller, Associate Dean and Director of the Agricultural Experiment Station.

The College of Agriculture is a part of the land-grant system. Pursuant to federal and state legislation, the College of Agriculture was established as a division of the university to provide resident instruction in agriculture; to conduct research in all fields of agriculture that promise to assist in the development of state resources; and to carry the results of research and service to all parts of the state. (See the sections devoted to the Agricultural Experiment Station and the Cooperative Extension Service in part 6.)

Standing and Advantages

The Resident Instruction Section of the Division of Agriculture of the National Association of State Universities and Land-Grant Colleges, through its Committee on Organization and Policy, maintains close liaison with all colleges of agriculture in the land-grant system. In annual national and regional meetings and summer workshops, efforts are coordinated to meet the changing needs of agriculture and maintain high professional standards in educating students for the profession of agriculture.

Students in the College of Agriculture are encouraged to pursue a broad education. In each curriculum, minimum requirements are specified in agriculture, in biological, physical, and social sciences, and in humanities to qualify the graduate to enter professional fields in agriculture. At the same time, each curriculum permits students to choose elective courses that will assist in personal growth, help in understanding the environment, and develop communication skills.

Facilities of the College

The facilities for agricultural instruction consist of the Agricultural Science Building, used as a central office, classroom, and laboratory building; Food Research Center; Dairy Science Center; laboratories in the Life Science Building, Janssen Engineering Building, Buchanan Engineering Building, Agricultural Engineering Building, Veterinary Science Building, and Disease Research Barn; greenhouses; H. C. Manis Entomology Research Unit; dairy cattle, sheep, swine, and beef cattle barns, Meats Laboratory, Judging Pavilion, poultry brooder, laying houses, and plant science farm and research plots. Poultry, dairy cattle, beef cattle, sheep, and swine representing several breeds are maintained for instructional and research purposes.

The College of Agriculture and the Agricultural Experiment Station at Moscow operate more than 1,100 acres of land. Additional acreages of land, including 1,380 acres in other parts of the state, are used for instructional purposes in breeding, production, and applying scientific principles to all fields of agriculture.

Degrees and Curricula Offered

Undergraduate. Baccalaureate degrees and curricula offered by this college are the Bachelor of Science in General Agriculture, Bachelor of Science in Agricultural Education, Bachelor of Science in Agricultural Economics (majors in agribusiness, agricultural economics, natural resources development, and rural and community development), Bachelor of Science in Agricultural Mechanization, Bachelor of Science in Animal Sciences (majors in agribusiness, animal sciences,and range livestock management), Bachelor of Science in Bacteriology, Bachelor of Science in Entomology, Bachelor of Science in Plant Protection, Bachelor of Science in Plant Science (majors in plant science, crop management, and landscape horticulture), Bachelor of Science in Soil Science (majors in agribusiness and soil science), and Bachelor of Science in Veterinary Science. Also, a program in food science is offered in cooperation with Oregon State University (the degree is granted by that institution). See the section headed "Major Curricula" 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 sciences, bacteriology, biochemistry, entomology, plant science, soil science, and veterinary science. Graduate study leading to the degree of Doctor of Philosophy is offered in bacteriology, biochemistry, entomology, plant science, and soil science. Students must fulfill the requirements of the Graduate School and the departments 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. Each candidate for a baccalaureate degree in the College of Agriculture must complete a minimum of 132 semester credits (136 for plant protection), including the specific departmental requirements listed in the major curriculum and the following general college requirements: (a) advanced writing, 3 credits; (b) speech, 2 credits; (c) mathematics, 4 credits; (d) chemistry, 4 credits; (e) life sciences, which must include Biol 201, 8 credits; (f) humanities and social sciences, in-

cluding at least 5 credits in each, 14 credits; and (g) courses in the major, 20 credits recommended. A list of approved courses to satisfy these college requirements is available through departmental advisers. The same course may be used to satisfy only one requirement.

Major Curricula

The specific requirements for the several undergraduate majors are listed below. 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.

GENERAL AGRICULTURE (B.S.Gen.Ag.)

Designed for students interested in a broad education with emphasis on agriculture. The flexibility permitted enables students to get the education needed in a general farming operation. 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 should 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.

General agriculture students may choose an adviser in any department in the college.

Course	Credits
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Advanced writing electives	3
Ag electives (incl courses in at least four depts)	50
Biology (incl Biol 201, Intro to Life Sciences)	8
Chemistry electives	8
Electives in ag econ, business, and acctg	15
Mathematics electives	4
Physical education activities	2
Humanities and social sciences electives	14
Speech electives	2
Electives to total 132 cr for the degree	—

AGRIBUSINESS (B.S.Ag.Econ.)

Designed to prepare students for employment as managers, administrators, or for managerial-related positions in agribusiness. Examples of such employment are finance, management, marketing, sales management, administration, public and industrial relations, production management, economic and statistical analysis, operations research and reporting, managerial accounting, and transportation analysis. This curriculum is administered by the Dept of Agricultural Economics.

Course	Credits
Acctg 201 Prin of Accounting	3
Acctg 202 Managerial Accounting	3
Acctg 301 Interm Acctg, *or* 385 Costs: Concepts & Materials	3
AgEc 101 Ag and Its Social and Econ Environment	3
AgEc 278 Prin of Farm & Ranch Mgmt	3
AgEc 289 Ag Markets & Prices	3
AgEc 356 Agricultural Programs & Policies	3
AgEc 391 Agribusiness Mgmt	3
AgEc 414 Analyt Tech in Agribusiness & Econ	3
ApSt 307 Prin of Stats, *or* Bus 231 Stats	3-4
Biol 201 Intro to Life Sciences	4
Bus 265 Legal Environment of Business	3
Bus 413 Human Relations in Business	3
Econ 251-252 Prin of Economics	6
Econ 321 Interm Microeconomic Analysis	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
Sp 131 Fundamentals of Speech	2
Ag electives (any courses in the College of Ag)	12
Agricultural economics electives	3
Chemistry electives	4
Computer science electives (e.g., Engr 131)	2
Life sciences electives	4
Mathematics electives (a minimum of Math 112)	4
Physical education activities	2
Humanities and social sciences electives	14
Electives in ag econ, econ, business, or acctg	6
Electives to total 132 cr for the degree	—

AGRIBUSINESS (B.S.An.Sc.)

Designed for students desiring to enter any of the various businesses associated with beef, dairy, meats, poultry, sheep, or swine industries. This curriculum is administered by the Dept of Animal Sciences.

Course	Credits
Acctg 201 Principles of Accounting	3
Acctg 202 Managerial Accounting	3
AnSc 205 Intro to Animal Nutrition	3
AnSc 222 Animal Reproduction & Breeding	3
AnSc 263 Intro to Meat Sc, *or* 303 Live Animal & Carcass Eval	3
AnSc 450 Proseminar	1
ApSt 307 Prin of Stats, *or* Bus 231 Stats	3-4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Business Writing	3
Sp 131 Fundamentals of Speech	2
Ag econ electives (incl AgEc 219, 289, 391, and 453)	15
Animal sciences electives	4
Chem electives (incl Chem 103, Intro to Chem)	7
Electives in acctg, bus, and econ (incl Econ 251-252)	15
Life sc electives (incl Biol 201, Intro to Life Sc)	8
Mathematics electives	4
Physical education activities	2
Humanities and social sciences electives (a minimum of 5 cr in each area)	14
Two production courses chosen from the following: AnSc 224, 321, ID322, 323, WS326, 328	6
Electives to total 132 cr for the degree	—

AGRIBUSINESS (B.S.Soil Sc.)

Designed for students who are preparing for a career in agricultural business enterprises. Additional courses in agricultural economics and business are required with a corresponding reduction in other courses. This curriculum is administered by the Dept of Plant and Soil Sciences.

Course	Credits
Acctg 201 Prin of Accounting	3
AgEc 101 Ag & Its Social & Econ Environment	3
AgEc 278 Prin of Farm & Ranch Mgmt	3
AgEc 289 Agricultural Markets & Prices	3
AgEc 391 Agribusiness Mgmt	3
AgEc 451 Land Resource Economics	3
ApSt 307 Prin of Stats *or* Bus 231 Stats	3-4
Biol 201 Intro to Life Sciences	4
Biol 203 General Botany	4
Econ 251-252 Prin of Economics	6
Engr 131 Digital Computer Programming	1
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Soils 205, 206 General Soils & Lab	4
Soils 435 Soil Physics	3
Soils 446 Soil Fertility	3
Soils 454 Soil Dev & Classification	3
Advanced writing electives	3
Agricultural electives	12
Chemistry electives	8
Electives in accounting, business, and economics	6
Humanities and social sciences electives	14
Life science electives	4
Mathematics electives	4
Physical education activities	2
Soils electives	7
Speech electives	2
Electives to total 132 cr for the degree	—

AGRICULTURAL ECONOMICS (B.S.Ag.Econ.)

Designed to provide students with the theory behind decisions concerning agricultural production, marketing, use of resources, pricing, and policy. Students desiring to become professional economists usually choose this curriculum in preparation for continued study at the graduate level. Supplemental courses are offered in statistics, effects of govt policy, rural appraisal, and related topics.

Course	Credits
Acctg 201 Prin of Accounting	3
Acctg 202 Managerial Acctg	3
AgEc 101 Ag & Its Social & Econ Environment	3
AgEc 278 Prin of Farm & Ranch Management	3
AgEc 289 Agricultural Markets & Prices	3
AgEc 356 Agricultural Programs & Policies	3
AgEc 453 Agricultural Price Analysis	3
AgEc 481 Agricultural Market Analysis	3
AgEc 493 Agricultural Production Economics	3
ApSt 307 Prin of Stats, *or* Bus 231 Stats	3-4
Biol 201 Intro to Life Sciences	4
Econ 251-252 Prin of Economics	6
Econ 321 Interm Microeconomic Analysis	3
Econ 372 Interm Macroeconomic Analysis	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
Math 180 Analytic Geometry & Calculus I	4
Sp 131 Fundamentals of Speech	2
Ag electives (any courses in the College of Ag)	12
Agricultural economics electives	3
Chemistry electives	4
Computer science electives (e.g., Engr 131)	2
Economics electives (two courses)	6
Life science electives	4
Physical education activities	2
Humanities and social sciences electives	14
Electives to total 132 cr for the degree	—

AGRICULTURAL EDUCATION (B.S.Ag.Ed.)

This curriculum is approved by the State Board of Vocational Education for the preparation of high school vocational agriculture teachers. Graduates who have completed at least 20 cr in agricultural education, and who meet the state certificate requirements for a Standard Secondary Teaching Certificate, are eligible to teach vocational agriculture in Idaho. In addition, government and business agencies that seek persons with training in the general field of agriculture provide employment opportunities for graduates of this curriculum.

Course	Credits
AgEd 351 Prin of Vocational Ed	2
AgEd 352 Beginning Methods	2
AgEd 453 Adv Methods & Curricula	3
AgEd 454 Methods of Teaching Farm Shop	2
AgEd 457 Adult Ag Ed Methods	2
AgEd 458 Supervision of FFA	2
AgEd 460 Practice Teaching	9
AgEd 470 Proseminar	1
AgMech 101 Oxy-Actylene Welding	2
AgMech 107 Arc Welding	2
AgMech 302-303 Ag Ed Shop I-II	8
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
Math 111 Finite Math, *or* 112 Survey of Calculus	4
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	33
Chemistry electives	4
Life science electives (incl Biol 201)	8
Physical education activities	2
Speech electives	2
Humanities and social sciences electives (incl Ed 201 *or* 468, Psych 100, and Psych 205)	14
Electives to total 132 cr for the degree	—

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 Engineers Council for Professional Development. The requirements for graduation are listed with other engineering curricula in the College of Engineering section.

AGRICULTURAL MECHANIZATION (B.S.Ag.Mech.)

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 Dept of Agricultural Engineering.

Course	Credits
Acctg 201 Prin of Accounting	3
Acctg 202 Managerial Accounting	3
AgEc 391 Agribusiness Mgmt	3
AgMech 112 Engr Applications in Ag	3
AgMech 115 Graphical Representations	1
AgMech 200 Seminar	1
AgMech 305 Ag Machinery & Equipment	3
AgMech 306 Ag Structures & Environmental Systems	3
AgMech 309 Ag & Automotive Engines	3
AgMech 312 Electric Power Application	3
AgMech 315 Irrigation & Drainage	3
AgMech 400 Seminar	1
Bus 265 Legal Environment of Business	3
CE 112 Elementary Surveying	2
Econ 252 Prin of Econ	3
Engr 131 Digital Computer Programming	2
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Math 111 Finite Mathematics	4
PlSc 102 Introduction to Plant Science	4
Soils 205, 206 General Soils & Lab	4
Advanced writing electives	3
Ag econ electives	3
Agricultural electives	13
Business electives	3
Chemistry electives	4
Electives from major field	5
Humanities and social sciences electives	14
Life sciences electives (incl Biol 201)	8
Math electives (approved)	3
Physical education activities	2
Speech electives	2
Electives to total 132 cr for the degree	—

ANIMAL SCIENCES (B.S.An.Sc.)

Designed to prepare the student for a career in any phase of animal sciences (livestock, dairy, poultry, meats). Emphasis is placed on providing a sound scientific background with concentration in the student's primary area of interest. It is designed to meet requirements of students interested in extension and research work and for the student who may decide to pursue graduate work in animal sciences. This curriculum is administered by the Dept of Animal Sciences.

Course	Credits
AnSc 263 Intro to Meat Sc, *or* 303 Live Animal & Carcass Eval	3
AnSc 305 Animal Nutrition	3
AnSc 306 Feeds & Ration Formulation	4
AnSc 422 Animal Breeding	3
AnSc 450 Proseminar	1
AnSc 451 Endocrine Physiology, *or* 452 Physiology of Reproduction & Lactation	3
ApSt 301 Principles of Statistics	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
Genet 314 General Genetics	3
Sp 131 Fundamentals of Speech	2
Chem electives (incl Chem 111, Prin of Chem *and* Chem 112, Inorganic Chem & Qual Analysis)	11
Life sc electives (incl Biol 201, Intro to Life Sc, and Biol 202, General Zool, *or* Biol 203, General Bot)	15
Mathematics electives	8
One production course chosen from AnSc 224, 321, ID322, 323, or 328	3
Physical education activities	2
Humanities and social sciences electives (a minimum of 5 credits in each area)	14
Electives to total 132 cr for the degree	—

BACTERIOLOGY (B.S.Bact.)

Designed for students who desire professional careers in basic and applied aspects of environmental bacteriology (terrestrial, aquatic, food, industrial). This curriculum stresses microbial ecology in terms of energy flow in natural systems and is administered by the Dept of Bacteriology and Biochemistry.

Course	Credits
ApSt 307 Principles of Statistics	3
Bact 250 General Bacteriology	4
Bact 304, 305 Pathogenic Bact & Lab	5
Bact 400 Seminar	2
Bact 402 Food & Applied Microbiology	4
Bact 425 Soil & Aquatic Microbiology	3
Bact 499 Directed Study	3
Biol 201 Intro to Life Sciences	4
Biol 202 General Zool, *or* 203 General Bot	4
Chem 111 Prin of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 372, 376 Organic Chem II & Lab	5
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 317 Tech & Engr Report Writing	3
Math 111 Finite Mathematics	4
Math 112 Survey of Calculus	4
Phys 113-114 General Physics	6
Phys 115-116 General Physics Lab	2
Sp 131 Fundamentals of Speech	2
Bacteriology or chemistry electives	12
Humanities and social sciences electives	14
Physical education activities	2
Electives to total 132 cr for the degree	—

Courses strongly recommended:

Bact 409 Immunology	3
Bact 410 Immunology Laboratory	2
Biochem 380 Introductory Biochemistry	4
Biol 331 General Ecology	3
Math 180 Analyt Geometry & Calculus	4

Note: For students who wish to enter a school of vet med, it is possible to obtain the B.S.Bact. degree by substituting Biochem 380 for Chem 253 and by deleting Bact 400, 402, and 425. Under this plan VS 371 and 474 are reqd courses and AnSc 305, 451, 452, VS 481, and Zool 323 are strongly recommended.

BIOCHEMISTRY

Students interested in majoring in biochemistry are advised by members of the biochemistry faculty, but should enroll in the general chemistry (B.S.) or professional chemistry (B.S.) curriculum in the College of Letters and Science. In addition to courses indicated in the chemistry curriculum, students, in consultation with their adviser, will take courses in biological sciences.

CROP MANAGEMENT (B.S.Pl.Sc.)

Designed to prepare students for careers in applied fields of crop mgmt, incl technical farm managers, extension agents, and a wide variety of jobs in ag industries. This curriculum is administered by the Dept of Plant and Soil Sciences.

Course	Credits
Acctg 395 Fundamentals of Accounting	4
AgEc 278 Prin of Farm & Ranch Mgmt	3
AgEc 289 Agricultural Markets & Prices	3
AgEc 391 Agribusiness Mgmt	3
AgMech 112 Engr Applications in Ag	3
AgMech 315 Irrigation & Drainage	3
AnSc 109 Sc of Animals that Serve Mankind	3
Biochem 380 Introductory Biochemistry	4
Biol 201 Intro to Life Sciences	4
Biol 203 General Botany	4
Chem 103 Intro to Chem, *or* 111 Prin of Chem	4
Chem 275 Carbon Compounds, *or* 112 Inorganic Chem & Qualitative Analysis	3-5
Econ 252 Principles of Economics	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Ent 322 Economic Entomology	3
Genet 314 General Genetics	3
PlSc 102 Introduction to Plant Science	4
PlSc 305 Intro to Plant Pathology	3
PlSc 308 Forage Crops	3
PlSc 338 Weed Control	3
PlSc 407 Field Crop Production	3
PlSc 461 Pomology	3
PlSc 463 Olericulture	3
Soils 205, 206 General Soils & Lab	4
Advanced writing electives	3
Agricultural electives	12
Humanities and social sciences electives	14
Life science electives	7
Mathematics electives	4
Physical education activities	2
Speech electives	2
Electives to total 132 cr for the degree	—

ENTOMOLOGY (B.S.Ent.)

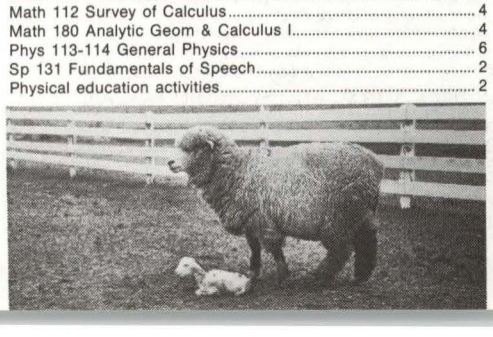
Designed for students who desire professional careers in the basic and applied fields of entomology (insect taxonomy, ecology, physiology, and agricultural, aquatic, and forest entomology).

Course	Credits
ApSt 307 Principles of Statistics	3
Bact 250 General Bacteriology	4
Biol 201 Intro to Life Sciences	4
Biol 202 General Zoology	4
Biol 203 General Botany	4
Biol 331 General Ecology	3
Chem 111 Prin of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 275 Carbon Compounds, *or* 277 Organic Chem I	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 317 Tech & Engr Report Writing	3
Ent 211 General Entomology	4
Ent 322 Economic Entomology	3
Ent 342 Insect Identification	4
Ent ID484 Insect Anatomy & Physiology	4
PlSc 305 Intro to Plant Pathology	3
Sp 131 Fundamentals of Speech	2
Entomology electives	5
Life science electives	11
Mathematics electives	4
Physical education activities	2
Physics electives	3
Humanities and social sciences electives	14
Electives to total 132 cr for the degree	—

FOOD SCIENCE

This program is offered in cooperation with Oregon State University, the degree-granting institution. Idaho resident students will *not* be charged out-of-state tuition by Oregon State University. Scientific and technological training is provided in the principles involved in the procurement, processing, preservation, and distribution of foods and food products. Emphasis is placed on providing a sound background to prepare students for positions in industry, govt agencies, colleges, and universities. At UI this curriculum is administered by the Dept of Bacteriology and Biochemistry.

Course	Credits
ApSt 307 Principles of Statistics	3
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 372 Organic Chem II	3
Eng 103 Basic Skills for Writing	3
Eng 317 Tech & Engr Report Writing	3
H&S 288 First Aid	2
Math 111 Finite Mathematics	4
Math 112 Survey of Calculus	4
Math 180 Analytic Geom & Calculus I	4
Phys 113-114 General Physics	6
Sp 131 Fundamentals of Speech	2
Physical education activities	2



LANDSCAPE HORTICULTURE (B.S.Pl.Sc.)

This curriculum is designed to prepare students for professional careers, the mgmt and operation of commercial nurseries, greenhouses, recreational parks, and related industries. Opportunities are also available for graduate study, which often qualifies individuals for careers in teaching, research, or extension.

Course	Credits
AgMech 315 Irrigation and Drainage	3
Biochem 380 Introductory Biochemistry	4
Biol 201 Intro to the Life Sciences	4
Biol 203 General Botany	4
Bot 241 Systematic Botany	3
Bot 311 Plant Physiology	3
Chem 103 Intro to Chemistry	4
Chem 275 Carbon Compounds	3
Chem 278 Organic Chemistry I: Lab	1
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Ent 322 Economic Entomology	3
Genet 314 General Genetics	3
LArch 288 Plant Materials	3
LArch 387 Park & Recreation Planning	3
LArch 388 Plant Materials	3
PlSc 102 Intro to Plant Science	4
PlSc 201 Turfgrass Science and Culture	2
PlSc 204 Propagation & Culture of Ornamental Plants	3
PlSc 305 Intro to Plant Pathology	3
PlSc 338 Weed Control	3
PlSc 464 Oranmental Plants and Their Mgmt	3
Soils 205, 206 General Soils and Laboratory	4
Advanced writing electives	3
Agricultural electives	16
Business and accounting electives	6
Humanities and social sciences electives	14
Mathematics electives	4
Physical education activities	2
Speech electives	2
Electives to total 132 cr for the degree	—

NATURAL RESOURCES DEVELOPMENT (B.S.Ag.Econ.)

Designed to provide the student with a background in natural and social sciences as well as the economic theory and analytical techniques necessary for analyzing various alternative uses of our natural resources. Majors in natural resource development will prepare for employment on planning commissions, with the Forest Service, Bureau of Reclamation, U.S. Corps of Engineers, and in other public and private agencies involved with natural resource development activities. This curriculum is administered by the Dept of Agricultural Economics.

Course	Credits
AgEc 101 Ag & Its Social & Econ Environment	3
AgEc 278 Prin of Farm & Ranch Mgmt	3
AgEc 356 Ag Programs & Policies	3
AgEc 361 Farm & Natural Resource Appraisal	3
AgEc 451 Land Resource Economics	3
AgEc 493 Ag Production Economics	3
ApSt 307 Prin of Stats *or* Bus 231 Stats	3-4
Biol 201 Intro to Life Sciences	4
Econ 251-252 Prin of Economics	6
Econ 321 Interm Microeconomic Analysis	3
Econ 485 Environmental Econ	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
Math 180 Analyt Geometry & Calculus I	4
Soc 110 Intro to Sociology	3
Soc 310 Rural Sociology	3
Sp 131 Fundamentals of Speech	2
Ag electives (any courses in the College of Ag)	12
Agricultural economics electives	3
Approved electives in forestry, mining, and engineering (a list of the courses acceptable in each area may be obtained from the dean's office)	12
Chemistry electives	4
Life science electives	4
Physical education activities	2
Humanities and social sciences electives	14
Electives to total 132 cr for the degree	—

PLANT PROTECTION (B.S.Pl.Prot.)

Designed to prepare students for professional careers in the field of plant protection. This program integrates the fields of entomology, plant pathology, and weed science to provide students with a broad understanding of our agricultural, food, and environmental problems. Students so trained should have wide choices in selecting careers. This curriculum is administered by the Depts of Plant and Soil Sciences and of Entomology.

Course	Credits
Ag 203 Environmental Pollution	3
Ag 499 Directed Study: Plant Protection	4
AgEc 101 Ag & Its Social & Econ Environment	3
AgMech 112 Engr Applications in Ag	3
Bact 250 General Bacteriology	4
Biol 201 Intro to Life Sciences	4
Biol 202 General Zoology	4
Biol 203 General Botany	4
Biol 331 General Ecology	3
Bot 241 Systematic Botany	3
Bot 432 Plant Ecology	3
Bus 265 Legal Environment of Business	3
Chem 111 Prin of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 277, 372 Organic Chem I, II	6
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Ent 211 General Entomology	4
Ent 322 Economic Entomology	3
PlSc 305 Intro to Plant Pathology	3
PlSc 338 Weed Control	3
PlSc 404 Plant Disease Ident & Control	3
PlSc 405 Biology of Weeds	3
Soils 205 General Soils	3
Humanities and social sciences electives	14
Mathematics electives	4
Physical education activities	2
Speech electives	2
Electives to total 136 cr for the degree	—

PLANT SCIENCE (B.S.Pl.Sc.)

Designed to prepare students for professional careers in basic agricultural industries including production, processing, research, and service. Opportunities are available as farm managers, farm advisers, extension agents, and for graduate study. This curriculum is administered by the Dept of Plant and Soil Sciences.

Course	Credits
AgMech 315 Irrigation & Drainage	3
Bact 250 General Bacteriology	4
Bot 311 Plant Physiology	3
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 277 Organic Chemistry I	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Ent 322 Economic Entomology	3
Genet 314 General Genetics	3
PlSc 102 Introduction to Plant Science	4
PlSc 305 Intro to Plant Pathology	3
PlSc 338 Weed Control	3
PlSc 401 Crop Physiology	3
PlSc 404 Plant Disease Ident & Control	3
PlSc 407 Field Crop Production	3
PlSc 461 Pomology	3
PlSc 463 Olericulture	3
Soils 205, 206 General Soils & Lab	4
Soils 446 Soil Fertility	3
Advanced writing electives	3
Agricultural electives	12
Humanities and social sciences electives	14
Life science electives	4
Mathematics electives	4
Physical education activities	2
Speech electives	2
Electives to total 132 cr for the degree	—

RANGE LIVESTOCK MANAGEMENT (B.S.An.Sc.)

Designed for students interested in mgmt and operation of range and pasture beef-cattle or sheep operations. This program is also for those interested in employment in the Cooperative Extension Service as county agricultural agents and livestock specialists in livestock-producing areas. This curriculum is administered by the Dept of Animal Sciences.

Course	Credits
AgMech 315 Irrigation & Drainage	2-3
AnSc 303 Live Animal & Carcass Eval	3
AnSc 305 Animal Nutrition	3
AnSc 306 Feed & Ration Formulation	4
AnSc 321 Beef Cattle Sc, *or* ID322 Sheep Sc	3
AnSc 422 Animal Breeding	3
AnSc 450 Proseminar	1
AnSc 452 Physiology of Reproduction & Lactation	3
ApSt 307 Principals of Statistics	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 317 Tech & Engr Report Writing	3
FWR 351 Elements of Range Mgmt	3
FWR 452 Range Communities	3
FWR 453 Range Methods & Techniques	3
Genet 314 General Genetics	3
PISc 308 Forage Crops	3
Soils 205, 206 General Soils & Lab	4
Sp 131 Fundamentals of Speech	2
Chemistry electives (incl Chem 111 and 112)	11
Life sc electives (incl Biol 201, 203, and Bot 241	15
Mathematics electives	8
Physical education activities	2
Humanities and social sciences electives (a minimum of 5 cr in each area)	14
Electives to total 132 cr for the degree	—

RURAL AND COMMUNITY DEVELOPMENT (B.S.Ag.Econ.)

Designed to provide training in economic and social techniques that deal with development problems in rural areas. This curriculum will prepare students pursuing professional careers as community and rural planners, public administrators, community resource development specialists, and economic developers at the local, state, or federal levels of govt. Students under this program are encouraged to draw on a variety of courses in such disciplines as political science, sociology, and anthropology. This curriculum is administered by the Dept of Agricultural Economics.

Course	Credits
AgEc 101 Ag & Its Social & Econ Environment	3
AgEc 278 Prin of Farm and Ranch Mgmt	3
AgEc 289 Agricultural Markets & Prices	3
AgEc 332 Economics of Agricultural Dev	3
AgEc 356 Ag Programs & Policies	3
AgEc 451 Land Resource Economics	3
AgEc 467 Econ of Rural Community Dev	2
ApSt 307 Prin of Stats, *or* Bus 231 Stats	3-4
Biol 201 Intro to Life Sciences	4
Econ 251-252 Prin of Economics	6
Econ 321 Interm Microeconomic Analysis	3
Econ 372 Interm Macroeconomic Analysis	3
Econ 410 State & Local Govt Finance	3
Econ 430 Regional/Urban Economics	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
PolSc 101 U.S. Govt: Structures & Functions	3
PolSc 276 American Local Government	3
Soc 110 Intro to Sociology	3
Soc 310 Rural Sociology	3
Soc 312 Sociology of Organizations	3
Soc 321 The Community	3
Sp 131 Fundamentals of Speech	2
Ag electives (any courses in the College of Ag)	12
Agricultural economics electives	3
Chemistry electives	4
Life science electives	4
Mathematics electives (a minimum of Math 112)	4
Physical education activities	2
Humanities and social sciences electives	14
Electives to total 132 cr for the degree	—

SOIL SCIENCE (B.S.Soil Sc.)

Designed to meet the needs of students preparing for professional or academic careers in soil science. Emphasis is placed on basic sciences in preparation for a wide variety of jobs in industry or govt and for graduate study. This curriculum is administered by the Dept of Plant and Soil Sciences.

Course	Credits
Bact 250 General Bacteriology	4
Biol 201 Intro to Life Sciences	4
Biol 203 General Botany	4
Bot 311 Plant Physiology	3
Chem 111 Prin of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 275 Carbon Compounds, *or* 277 Organic Chem I	3
Engr 131 Digital Computer Programming	1
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Geol 101, 102 Physical Geology & Lab	4
Math 111 Finite Math and Math 112 Survey of Calculus, *or* 180 Analyt Geom & Calculus I	4-8
Phys 113-114 General Physics	6
Soils 205, 206 General Soils & Lab	4
Soils 412 Soil Chemistry	4
Soils 425 Soil & Aquatic Microbiology	3
Soils 435 Soil Physics	3
Soils 446 Soil Fertility	3
Soils 454 Soil Dev & Class	3
Advanced writing electives	3
Agricultural electives	12
Humanities and social sciences electives	14
Life science electives	4
Physical education activities	2
Speech electives	2
Electives to total 132 cr for the degree	—

VETERINARY SCIENCE (B.S.Vet.Sc.)

Students preparing for admission to a college of veterinary medicine elect this major. If, after successful completion of 99 cr, the student is admitted to a recognized college of vet med, the successful completion of the first year of study at the college of vet med (at least 33 cr in approved courses) will constitute the sr year toward the degree of B.S.Vet.Sc. at UI. Students under this option must complete their jr year (at least 33 cr) in residence on the Moscow campus.

Course	Credits
Bact 250 General Bacteriology	4
Biochem 380 Introductory Biochemistry	4
Biol 201 Intro to Life Sciences	4
Biol 202 General Zoology	4
Chem 111 Prin of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 275 Carbon Compounds, *or* 277, 278 Organic Chem I and Lab	3-4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Math 111 Finite Math, *or* 140 College Algebra, *or* 180 Analyt Geom & Calculus I	3-4
Phys 113-114 General Physics	6
VS 200 Seminar	1
Advanced writing electives	3
Agriculture electives	18-20
Approved electives (1st yr of vet med)	31
Humanities and social sciences electives (a minimum of 6 credits in each area)	14
Physical education activities	2
Speech electives	2
Electives to total 132 cr for the degree	—

College of Business and Economics

John W. Knudsen, Acting Dean (211-A Admin. Bldg.); Dolores A. Sanchez, Secretary of the College Faculty.

The college was established as a professional division of the university in 1925. Long known as the College of Business Administration, the name was changed to the College of Business and Economics in 1969. Its principal objective is to provide education for men and women who are preparing for careers in business, government, and other organizations. Through curriculum changes, the college responds to developments in the modern world, such as increased awareness of human factors, need for long-range planning, rapid technological change, and need for flexibility.

The College of Business and Economics provides a sound background in those basic principles that will help graduates as they advance into positions of responsibility. As part of a state-supported university founded to educate better citizens, the college also aims to give its students an appreciation of the social importance and responsibilities of business men and women.

A college education should prepare students for careers, not just for initial job placement. Accordingly, the college curricula provide a broad, liberal education comparable to other university studies. Highly specialized instruction in business practices is avoided. Emphasis is placed upon providing knowledge and understanding of the fundamental disciplines, concepts, and ethics involved in making decisions. The goal is to develop those managerial talents that prepare graduates for responsible roles in private enterprise and public service.

The university has three major objectives: teaching, research, and service. Through the Center for Business Development and Research, the college is able to contribute to business development and to the advancement of knowledge about our state and its business activities. In addition, faculty members and students have the opportunity to engage in basic research.

The college also provides faculty and counsel for continuing education in business matters throughout the state. In cooperation with other state agencies, courses in management and in specialized areas are made available.

Curricula and Degrees Offered

Undergraduate. The degree of Bachelor of Science in Business is offered with majors in the following fields: accounting, economics, finance, general business, management, and marketing. The program of study for the bachelor's degree in business includes three principal components: the business and economics core, nonbusiness course work, and the requirements for the selected major field. Detailed statements of the requirements for majors are included in the "Major Curricula" section following the statement of general requirements for graduation.

Graduate. The Graduate School offers work toward the degrees of Master of Science (M.S.) in economics and Master of Business Administration (M.B.A.) in business. Students must fulfill the requirements of the Graduate School and of the department in which they study. Consult the catalog of the Graduate School for further information.

Standing of the College

Fully accredited by the Northwest Association of Secondary and Higher Schools, the College of Business and Economics keeps apace of developments in business through various organizations and by consultation with Idaho business leaders. The quality of the program is attested to by the outstanding achievements of Idaho graduates.

General Requirements for Graduation

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

College Requirements. Candidates for the degree of Bachelor of Science in Business must complete 128 credits. The program of required study includes: 40 credits in the business and economics core, at least 15 credits in the selected major field, and 52 credits in required and elective nonbusiness courses as specified below. (In addition, 2 credits in physical education activities and undesignated electives are included in the 128 required credits.)

Students registered in the College of Business and Economics are required to achieve a minimum grade point average of 2.00 for all business and economics courses undertaken and in all courses in the major field. Before fully pursuing upper-division work, students registered in the college must achieve a minimum overall grade point average of 2.00 for the first two academic years. A student who earns an overall average of less than 2.00 for a minimum of 60 credits may not register for more than one upper-division course (those numbered 300 and above) in any one semester until his or her cumulative grade point average is raised to the required minimum level.

A. *CORE REQUIREMENTS IN BUSINESS AND ECONOMICS (40 credits):*

Course	Credits
Acctg 201 Principles of Accounting	3
Acctg 202 Managerial Accounting	3
Bus 231 Statistics	4
Bus 265 Legal Environment of Business	3

Bus 301 Financial Management	3
Bus 311 Intro to Management Theory	3
Bus 312 Industrial Management	3
Bus 321 Marketing	3
Bus 350 Management Information Systems	3
Bus 402 Business and Society	3
Bus 474 International Bus, *or* Econ 474 International Econ	3
Bus 480 Business Policy	3
Economics elective (upper division)	3

B. *NONBUSINESS REQUIREMENTS (52 credits):*

Course	Credits
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
Econ 251-252 Principles of Economics	6
Math 111 Finite Mathematics	4
Math 112 Survey of Calculus	4
Engr 131 Digital Computer Programming	2
Sp 131 Fundamentals of Speech	2
Phil 201 Ethics	3
Psych 100 Intro to Psych, *or* Anthro 120 Intro to Social Anthro	3
Literature	6
Natural science (physical or biological science)	4
Social science	3
Additional credits outside of the College of Business and Economics (physical education and Officer Education Program credits excluded)	6*

*Econ majors will complete 6 cr of upper-div social sc *or* 6 cr of math beyond the requirements specified above.

C. *REQUIREMENTS IN MAJOR* (15 credits in accounting, economics, finance, general business, management, or marketing—see below)

D. *UNDESIGNATED ELECTIVES (19 credits)*

E. *PHYSICAL EDUCATION ACTIVITIES (2 credits)*

Major Curricula

The requirements for each major are listed below. Each student is assigned an adviser who assists in the planning of a program through the use of a check sheet; however, the student has the final responsibility for the completion of all requirements. Where business or economics electives are specified, courses numbered 300 or above are required. Students in the Officer Education Program should use the undesignated electives category to permit scheduling of the required courses.

ACCOUNTING (B.S.Bus.)

This curriculum provides the minimum requirements for an accounting degree. Students are encouraged to take additional work to emphasize cost accounting, corporate accounting, auditing, tax, or public accounting. Req course work incl the general requirements, plus:

Course	Credits
Acctg 301-302 Intermediate Accounting	6
Acctg 385 Costs: Concepts & Methods	3
Acctg 401 Advanced Accounting	3
Acctg 483 Federal & State Taxes	3

BUSINESS EDUCATION (B.S.Bus.Ed.)

For this curriculum, see the College of Education section.

ECONOMICS (B.A. or B.S.)

For these curricula, see the College of Letters and Science section.

ECONOMICS (B.S.Bus.)

Students preparing for professional careers as economists in private business, govt service, or careers where a broad knowledge of economics is useful, should elect this curriculum.

Reqd course work incl the general college requirements, plus:

Course	Credits
Econ 321 Intermediate Microeconomic Analysis	3
Econ 372 Intermediate Macroeconomic Analysis	3
Additional upper-div cr in economics	9

FINANCE (B.S.Bus.)

This curriculum is for students pursuing a career in corporate finance, banking, or investments. Students are encouraged to take additional course work in insurance, real estate, accounting, and economics. Reqd course work incl the general requirements, plus:

Course	Credits
Acctg 301 Interm Acctg, *or* 483 Federal and State Taxes	3
Bus 302 Financial Institutions & Credit, *or* Econ 403 Money & Banking	3
Bus 332 Quantitative Methods in Business	3
Bus 401 Investments	3
Bus 406 Problems in Financial Management	3

GENERAL BUSINESS (B.S.Bus.)

Students who prefer all-around preparation in business mgmt to specialization in one field elect this curriculum. The reqd course work incl the general requirements, plus 15 cr in upper-div courses selected from the college offerings in consultation with the student's adviser. *Note:* No student may become a candidate for the B.S.Bus. degree in general business who has already earned a baccalaureate degree in the College of Business and Economics or who is a candidate for another degree offered by the college.

MANAGEMENT (B.S.Bus.)

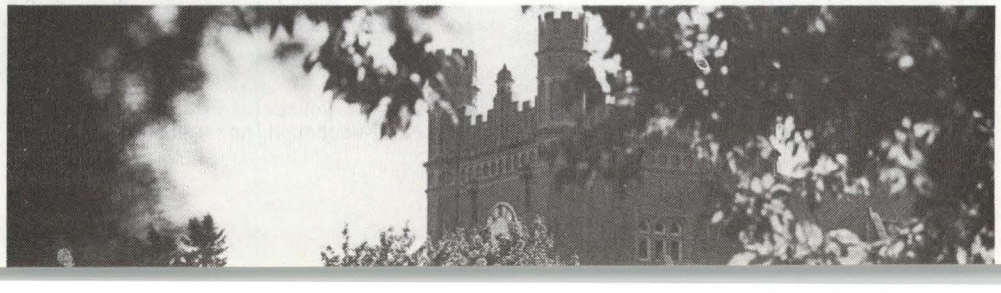
This program emphasizes the behavioral and quantitative aspects of the planning, organizing, coordinating, analyzing, and evaluating that are inherent in the administrative process. Reqd course work incl the general requirements, plus:

Course	Credits
Bus 332 Quantitative Methods in Business	3
Bus 411 Organization Theory	3
Bus 412 Personnel Management	3
Bus 413 Human Relations in Business	3
Bus 441 Labor Relations	3

MARKETING (B.S.Bus.)

Students contemplating careers with consumer or industrial goods manufacturers, retail or wholesale distributors, or advertising and marketing research organizations elect this program. Reqd course work incl the general requirements, plus:

Course	Credits
Bus 323 Principles of Advertising	3
Bus 423 Retail Merchandising & Distribution	3
Bus 425 Intermediate Marketing Management	3
Bus 451 Marketing Problems	3
Bus 452 Marketing Research & Analysis	3



College of Education

Everett V. Samuelson, Dean (301 Educ. Bldg.); Thomas O. Bell, Associate Dean; Barbara Hopkins, 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 division and consists of the Division of Health, Physical Education and Recreation, the Division of Teacher Education, and the Division of Vocational Teacher Education. Subject fields within these divisions include education, business education, dance, guidance and counseling, health and safety, industrial education, library science, office administration, physical education, recreation, special education, and vocational teacher education.

One of the first duties of the college is that of assuring that anyone who applies for admission to a program of preparation for educational service is qualified by preparation and personal attributes for this important work. Once admitted, the student undertakes a program which has as its objective 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 made substantial preparation 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 consulting services, participation in organizational activities, and research. Preparation is provided in all of the major areas of professional education.

Standing of the College

The College of Education is fully accredited by the National Council for the Accreditation of Teacher Education, and 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.

Admission Requirements

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

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 Recreation, and Bachelor of Dance. See the section headed "Major Curricula" for the programs of studies leading to these degrees.

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

In the College of Education, graduate programs include a planned fifth year in teacher education, as well as work toward advanced degrees. Upon the successful completion of the appropriate programs of studies, the following degrees are conferred: Master of Science, Master of Education, Master of Arts in Teaching, Specialist in Education, Specialist in Educational Administration, Specialist in Guidance and Counseling, 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 education, business education, distributive education, educational administration, elementary education, guidance and counseling, industrial education, physical education, secondary education, special education, and vocational education.

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

Doctoral candidates majoring in education may concentrate in education, educational administration, elementary education, guidance and counseling, and secondary education.

Teacher Education Program

At the University of Idaho, the preparation of teachers is a cooperative enterprise between the College of Education and other divisions. Coordination is achieved through the Teacher Education Coordinating Committee, which is made up of representatives from the professional and academic areas involved. However, the screening of all applicants for continuance in or admission to the Teacher Education Program 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 teaching have the option of completing their bachelor's degree in the College of Education (except for agricultural education, home economics educa-

tion, and music education) or in the department of their subject major.

Teacher education students have two advisers: one from their subject-matter department and one from the College of Education. 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 the Teacher Education Program), the advisers are designated. They plan and approve a program of studies for the student. As long as the approved program is followed, only the student's college adviser is required to sign the registration cards. Changes in the program require the signatures of both advisers. Exceptions to this rule are students majoring in a subject-matter area in the College of Education, students in the Department of Agricultural Education, in the School of Home Economics, and in the School of Music, who have advisers in their subject-matter areas only.

Admission to the Teacher Education Program. 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 divisions who plan to enter the Teacher Education Program must make application for admission to or continuance in the program. A standing committee of the college reviews each applicant's total record and presents its recommendations to the dean. The approval of the dean of the College of Education is required for admission to or continuance in the program. Admission to the Teacher Education Program does not carry with it permission to enroll in senior practicum. Additional procedures and requirements apply as noted elsewhere in this section and as noted in the prerequisites to the specific courses in senior practicum.

Clinical Experience in Teacher Education

The clinical study of teaching and learning theory is given practical application through laboratory experience in both campus and field settings. Teacher trainees have early involvement with school pupils and experienced teachers through short-term laboratory components such as the "January experience," a two-week, full-time observation and participation for freshman elementary education majors in selected schools; semester laboratory components for all students in Ed 201, Introduction to Teaching; and semester campus cr field laboratory components for special education majors. Additional clinical experience is provided students as they continue professional studies through simulated teaching situations on campus and through field laboratory components for students of methodology. Culminating clinical teaching experience is provided in the senior practicum or graduate internship.

Senior Practicum

Admission. For admission to senior practicum courses (Ed 430, 431, 432, 435, SpEd 480), each student must have satisfied the following requirements: (1) have been admitted to or continued in the Teacher Education Program; (2) have a grade point average of at least 2.25; (3) have satisfied the other prerequisites stated in the description of the particular practicum course for which he or she wishes to register; and (4) have applied for admission to senior practicum 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. The senior practicum is carried out in cooperating public schools so that students may obtain experience under typical school conditions. Normally it is scheduled for half of a semester of full-time teaching in centers designated by the College of Education. Students should plan their schedules for the senior year so that half of a semester will be free for full-time enrollment in the practicum and the other half of the semester in accelerated courses. An option is provided for both elementary and secondary majors to pursue a full semester of senior practicum combined with professional courses in selected centers.

Graduate Practicum and Internship in School Positions

Admission. Admission to the practicum and internship courses is conditioned upon acceptance in a graduate program and approval of the major professor and/or student's committee. Application for placement in the practicum or internship should be submitted by December 1 of the school year before enrolling for the field experience.

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 the four-year Teacher Education Program 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 master's or professional certificate program in guidance and counseling qualify for the Idaho Pupil Personnel Services Certificate. Students may qualify for the Idano

School Librarian Certificate by completing the requisite courses in library science.

Procedures. The college in which the student is enrolled initiates the application for teacher certification. The subject-matter adviser and the professional education adviser both sign the necessary forms and forward them 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 proper certification office. 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.

The College of Education reserves recommendations for certification to students who have completed four years of preparation and hold a bachelor's degree.

General Requirements for Graduation

Requirements in teacher education listed in this section were in effect during the 1977-78 academic year. New state board certification requirements now under consideration by the state legislature and the Teacher Education Coordinating Committee may alter the teacher education program. Students should consult with their college advisers concerning new standards.

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. A minimum grade point average of at least 2.00 is required in all specified professional courses and in the major secondary-school teaching field. The following course requirements apply to all undergraduate teacher education students in the college (see the major curriculum in recreation for the special requirements applicable to that program).

A. *GENERAL STUDIES REQUIREMENTS FOR ELEMENTARY SCHOOL TEACHING (46 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 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. *English-Speech (14 credits),* including basic skills for writing and an additional six hours in English composition and literature, plus Speech 131, Fundamentals of Speech, or Speech 151, Oral Interpretation.

2. *Social Science (12 credits),* including one course in American history, one course in American government, and 6 credits selected from the following list of courses:

Course	Credits
Anthr 225 Aboriginal North American Indian *or* Hist 423 Idaho and the Pacific Northwest	3
Anthr 320 Peoples of the World	3
Anthr ID425 Contemporary North American Indian	3
Econ 170 Contemporary Economics	3
Geog 250 World Regional Geography	3
Geog 350 Latin America	3-4
Geog 362 United States and Canada	3-4
Geog 364 Idaho and the Pacific Northwest	3-4
Soc 110 Intro to Sociology	3

3. *Science (12 credits),* including biological, earth, and physical science courses requiring laboratory work. From the following list, select 4 credits each from the areas of life science, earth science, and physical science:

Course	Credits
Biol 100 Man and the Environment *or* 201 Intro to the Life Sciences	4
Chem 101 Concepts of Chem *or* 103 Intro to Chem	4
FWR 205 Wildland Resource Conservation	3
Geog 100, 101 Man's Physical Environment & Lab	4
Geol 101, 102 Physical Geology & Lab *or* 106, 107 Historical Geology & Lab	4
Phys 101 Fundamentals of Physical Science *or* 105, 106, Physics and Society & Lab	4

4. *Mathematics (6 credits):* Math 135-136, Math for Elementary Teachers.

5. *Art and Music (2 credits in each area):* select from nonmethods courses.

6. *Psychology (6 credits):* Psych 100, Intro to Psych, and Psych 205, Developmental Psych.

B. *GENERAL STUDIES REQUIREMENTS FOR SECONDARY SCHOOL SCHOOL TEACHING (42 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. *English-Speech (14 credits),* including basic skills for writing and an additional six hours in English composition and literature, plus Speech 131, Fundamentals of Speech, or Speech 151, Oral Interpretation.

2. *Social Science (9 credits),* including at least one course in American history or American government.

3. *Science-Mathematics (12 credits),* including biological, earth, or physical science courses requiring laboratory work. Majors preparing to teach at the secondary-school level must complete a minimum of 12 credits in laboratory science and/or mathematics.

4. *Psychology (3 credits):* Psych 100, Intro to Psychology.

C. *UNIFORM REQUIREMENTS FOR ELEMENTARY AND SECONDARY TEACHING (20-21 credits).*

Course	Credits
Ed 201 Intro to Teaching	2
Ed 314 Strategies for Teaching	2-3
Ed 415 Educational Psychology	3
*Ed 430 *or* 431 *or* 432 *or* SpEd 480 Practicum	9
Ed 445 Proseminar in Teaching	1
Ed 468 Contemporary Education	3

*Students preparing to teach art or physical ed in secondary schools may substitute 3 cr in Ed 435 for 3 of the 9 cr in Ed 431.

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., or B.S.Rec.). These major curricula (with the degree goal identified) are listed below.

Careful distinction should be made between a student's "major curriculum" and any additional "teaching majors" or "teaching minors" required. These supplementary teaching majors and minors are listed after this section.

AGRICULTURAL EDUCATION (B.S.Ag.)

For this curriculum, see the College of Agriculture section.

BUSINESS EDUCATION (B.S.Bus.Ed.)

This major is for students whose primary interest is in teaching basic business subjects and economics. Reqd course work incl the general requirements for students preparing to teach at the secondary level, plus:

Course	Credits
Acctg 201 Principles of Accounting	3
Acctg 202 Managerial Accounting	3
Bus 265 Legal Environment of Business	3
Bus 301 Financial Management	3
BusEd 491-492 Teaching Business Education I-II	6
Econ 251-252 Principles of Economics	6
Eng 313 Business Writing	3
Geog 140 Economic Geography	3
OAd 103 Typewriting III (may be waived by exam)	2
OAd 185 Machine Calculation	2
One of the following sequences	6
Acct 301-302 Interm Acctg	
Bus 302 Financial Institutions & Credit *and* 401 Investments	
Bus 411 Org Theory *and* 412 Personnel Mgmt	
Econ 321 Interm Micro Analysis *and* 372 Interm Macro Analysis	
Accounting, business, or economics electives	9

DANCE (B.Dan.)

The curriculum leading to the degree of Bachelor of Dance is designed to prepare students to be teachers of dance, as well as to perform and choreograph. Emphasis is on modern dance. Majors in this discipline satisfy the general university, college, and other course requirements by taking the following:

Course	Credits
Art 101 *or* 102 Survey of Art	2
Art 121 Creative Process & Design	2
Dan 105 Dance—incl modern (through adv), 3 cr; ballet (through interm), 2 cr; ethnic (through interm), 2 cr; square & social, 1 cr; jazz (through interm), 2 cr	10
Dan 112 Dance Techniques	2
Dan 113 Problems in Dance Composition	2
Dan 220 Rhythms for Children	2
Dan 320 Labanotation	1
Dan 321 Theory & Tech of Teaching Dance	2
Dan 325 Dance Production	2
Dan 383 Adv Dance Composition, Rehearsal, & Performance	4
Dan 420 Dance Accompaniment	3
Dan 421 Dance History	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 111-112 Lit of Western Civ	6
MusA 100 *or* 147 *and* 148 Piano and/or Voice	2
MusC 141 Musicianship & Music Lit	3
MusH 321-322 Music in Western Civ	6
Phil 401 Philosophy of the Arts	3
PE 111 Fundamentals of Movement	2
PE 418 Physiology of Exercise	3
PE 419 Human Kinesiology	3
Psych 100 Intro to Psychology	3
Psych 205 *or* Ed 415 Developmental or Ed Psych	3
Sp 131 Fundamentals of Speech, *or* 151 Oral Interp	2
ThA 105 Basics of Performance	2
ThA 163 Technical Production	3
ThA 273 Stage Lighting	3
Social sc electives—incl at least one course in American hist or govt	9
Sc and/or math electives—incl biol, earth, or physical sc courses requiring lab work	12
Electives to complete 128 cr for the degree, incl additional courses numbered 300 or above to complete the requirement for 36 cr at the upper-div level	—

Recommended electives:

Dance majors planning to qualify for the Standard Secondary-School Teaching Certificate should include the following courses among the electives to complete the 128 cr for the degree:

Ed 201 Intro to Teaching	2
Ed 314 Strategies for Teaching	2-3
Ed 431 Practicum (3 cr in Ed 435 may be substituted for 3 of the 9 cr in Ed 431)	9
Ed 445 Proseminar in Teaching	1
Ed 468 Contemporary Education	3

DISTRIBUTIVE EDUCATION (B.S.Bus.Ed.)

Students electing this major should consult the distributive ed adviser concerning state requirements for the voc ed certificate. Reqd course work incl the general requirements for the student preparing to teach at the secondary level, plus:

Course	Credits
Acctg 201 Principles of Accounting	3
Bus 321 Marketing	3
Bus 323 Principles of Advertising	3
Bus 324 Sales Management	3
Bus 423 Retail Merchandising & Distribution	3
BusEd 493 Teaching Distributive Ed	3
BusEd 497 Coordination Techniques	3
Econ 251 Principles of Economics	3
VocEd 322 Vocational Guidance	3
VocEd 351 Principles of Vocational Ed	2
VocEd 461 Occupational & Job Analysis	3

Plus the completion of a 20-cr teaching minor, or the following:

Additional requirements for a 60-credit concentration:

Econ 252 Principles of Economics	3
Eng 313 Business Writing	3
VocEd 200 Seminar, *or* 499 Directed Study	3
VocEd 481 Foundations of Voc Ed	2
Electives (approved by distributive ed teacher educator)	9

ELEMENTARY EDUCATION (B.S.Ed.)

Reqd course work incl the general requirements for students preparing to teach at the elementary level, plus:

Course	Credits
Ed 320 Primary Language Arts Methods	3
Ed 326 Elem School Mathematics Ed	3
Ed 421 Elem School Social Studies Methods	2
Ed 434 Children's Literature	3
Ed 436 Elem School Reading	3
Ed 444 Elem School Science Methods	2
Music and/or art electives (not methods courses)	3

(Continued)

Plus four credits from among the following:

Ed 375 Elem School Art Methods	2
H&S 316 Elem School Health Materials	2
MusT 381 (Ed 381) Elem School Music Methods	3
PE 252 Elem School Physical Education	2-3

And the satisfactory completion of one of the following options selected from the list headed Teaching Majors and Minors in the College of Education:

A. One 20-cr, single-subject composite minor and one 15-cr, single-subject minor.

B. One 30-cr, single-subject major. Grade point average of 2.5 required in majors.

C. One 40-cr composite major. Grade point average of 2.5 required in majors.

HOME ECONOMICS EDUCATION (B.S.H.Ec.)

For this curriculum, see the School of Home Economics section.

INDUSTRIAL EDUCATION (B.S.Ed.)

Reqd course work incl the general requirements for students preparing to teach at the secondary level, plus:

Course	Credits
AgMech 101 Oxy-Acetylene Welding	2
AgMech 107 Arc Welding	2
AgMech 309 Ag & Automotive Engines	3
Engr 101-102 Engineering Graphics	4
IEd ID130 Basic Electricity	4
IEd ID131 Basic Electronics	4
IEd 140 Wood Technics	3
IEd 250 General Metals	3
IEd 251 Plastics	2
IEd 253-254 Materials & Processing Lab I-II	5
IEd 310 Maintenance of Tools & Equipment	3
IEd 420 Eval in Industrial Education	3
IEd 451 School Shop Planning & Admin	3
IEd 462 Industrial Ed Curriculum	3
IEd 472 Industrial Ed Methods	3

Plus either of the following options:

A. Five additional cr in approved shop courses and the satisfactory completion of one 20-cr teaching minor.

B. Twenty additional cr in approved shop courses. Students electing this option are required to specialize in one or two technical areas of shopwork and earn at least 12 cr in each area of specialization. Areas available are: electricity-electronics, metals, drafting, wood, and bldg constr. Consult the chairman of industrial ed for the list of approved courses that may be applied toward each area.

OFFICE ADMINISTRATION (B.S.O.Ad.)

This degree is for students whose primary interest is in secretarial admin and related office and business positions. Majors in office admin must satisfy the following requirements, incl at least 52 cr in courses in OAd, Bus, Econ, Acctg, & BusEd, and at least 52 cr in courses outside those areas:

Course	Credits
Acctg 201-202 Prin of Acctg *and* Managerial Acctg	6
Bus 231 Statistics	4
Bus 265 Legal Environment of Business	3
Bus 311 Intro to Mgmt Theory	3
Bus 321 Marketing	3
Bus 411 Organization Theory	3
Bus 412 Personnel Mgmt, *or* 413 Human Relations in Bus	3
BusEd 496 Directed Work Experience	2
Econ 251-252 Prin of Econ *or* equiv	6
Eng 103-104 Basic Skills *and* Essay Writing	6
Eng 313 Bus Wrtg, *or* 317 Tech & Engr Rpt Wrtg	3
Engr 131 Digital Computer Programming	2
Math 111-112 Finite Math *and* Survey of Calculus, *or* 140 & 112 (or 180)	7-8
OAd 103 Typewriting III	2
OAd 116 Shorthand II	4
OAd 185 Machine Calculation	2
OAd 271-272 Shorthand III & IV	6
OAd 395-396 Secretarial Procedures	6
OAd 400 Seminar	1
Physical education activities	2
Sp 131 Fundamentals of Speech	2
Literature electives	6
Natural science elective requiring lab work	4
Social science electives	6
Upper-div bus or econ elective	3
Electives to complete 128 cr for the degree (incl at least 9 cr in additional upper-div courses)	—

OFFICE OCCUPATIONS EDUCATION (B.S.Bus.Ed.)

Students whose primary interest is in teaching secretarial and clerical subjects and who wish to qualify for voc certification elect this major. Consult the office occupations education adviser concerning state requirements for the voc ed certificate. Reqd course work incl the general requirements for students preparing to teach at the secondary level, plus:

Course	Credits
Acctg 201 Principles of Accounting	3
Acctg 202 Managerial Accounting	3
Bus 265 Legal Environment of Business	3
Bus 301 Financial Management	3
BusEd 491-492 Teaching Business Education I-II	6
BusEd 497 Coordination Techniques	3
Econ 251-252 Principles of Economics	6
Eng 313 Business Writing	3
Geog 140 Economic Geography	3
OAd 103 Typewriting III (may be waived by exam)	2
OAd 116 Shorthand II (may be waived by exam)	4
OAd 185 Machine Calculation	2
OAd 271-272 Shorthand III-IV	6
OAd 395 Secretarial Procedures	3
VocEd 322 Vocational Guidance	3
VocEd 351 Principles of Vocational Education	2
VocEd 461 Occupational & Job Analysis	3
Business or economics electives	6

PHYSICAL EDUCATION: ELEMENTARY (B.S.Ed.)

Reqd course work incl the general requirements (incl Zool 119) for students preparing to teach at the elem level, plus:

Course	Credits
Dan 220 Rhythms for Children	2
H&S 150 Found of Health Science	3
H&S 288 First Aid	2
PE 105, 107, 108 Activities	3
PE 111 Fundamentals of Movement	2
PE 139 Gymnastics, *or* 142 Tumbling & Floor Exercises	2
PE 252 Elem School Physical Ed	2-3
PE 271 Interp of Physical Ed, Health, & Rec	3
PE 424 Adapted Physical Education	2
PE 496 Organization & Administration	3
Rec 264 Recreational Music	1
Additional Courses for Women	
PE 115 Team Sports Backgrounds	2
PE 116 *or* 117 Indiv Sports Background	2
PE 322 Teaching Individual Sports	2
PE 323 Teaching Team Sports	2
Additional Courses for Men	
PE 106 Individual & Dual Sports	1
PE 243 Highly Organized Games	2
PE 387 Intramural & Athletic Officiating	3
Physical Education Electives	
Select 10 cr from among the following courses:	
Dan 321 Theory & Tech of Teaching Dance	2
H&S 316 Elem School Health Materials	2
PE 419 Human Kinesiology	3
PE 427 Methods & Materials in Physical Ed	2
PE 467 PE & Rec for Handicapped	3
Rec 261 Recreational Arts & Crafts	2
Rec 329 Leadership in Recreation	2

Electives for Elementary Certification

Students who expect to teach physical ed at the elem level should take the following courses:

Ed 320 Primary Language Arts Methods 3
Ed 326 Elem School Mathematics Ed 3
Ed 421 Elem School Social Studies Methods 2
Ed 444 Elem School Science Methods 2

PHYSICAL EDUCATION: SECONDARY (B.S.Ed.)

Reqd course work incl the general requirements (incl Zool 119) for students preparing to teach at the secondary level, plus:

Course	Credits
H&S 245 Intro to Athletic Injuries	3
H&S 423 Health Education Methods	3
PE 105 Dance	1
PE 108 Swimming (may be waived by proficiency exam)	0-1
PE 115 Team Sports Backgrounds	2
PE 116 *or* 117 Individual Sports Backgrounds	2
PE 126 Weight Training & Conditioning	1
PE 139 Gymnastics	2
PE 141 Wrestling, *or* Dan 112 Dance Techniques	1-2
PE 142 Tumbling & Floor Exercise	2
PE 243 Highly Organized Games, *or* 252 Elem School Physical Ed	2-3
PE 271 Interp of Physical Ed, Health, & Rec	3
PE 322 Teaching Individual Sports	2
PE 387 Intramural & Athletic Officiating	3
PE 418 Physiology of Exercise	3
PE 419 Human Kinesiology	3
PE 424 Adapted Physical Education	2
PE 427 Methods and Materials in Physical Ed	2
PE 481 Tests & Measurements	3
PE 496 Organization and Administration	3

Plus the satisfactory completion of one 20-cr teaching minor (not incl coaching).

Note: In exceptional cases, students who wish to complete a teaching major in a second field may have the above list of requirements reduced to 30 cr with the approval of the division.

A single-subject 60-cr major in physical ed includes the above courses, plus the following:

Dan 112 Dance Techniques	2
Dan 321 Theory & Tech of Teaching Dance, *or* PE 141 Wrestling	1-2
PE 111 Fundamentals of Movement	2
PE 116 *or* 117 Individual Sports Backgrounds (take the course not taken above)	2
PE 323 Teaching Team Sports	2
H&S 150 Foundations of Health Science	3
H&S 288 First Aid	2
Electives in HPER & Dan	3-4

In addition, electives can be taken to allow students to concentrate in the following options: sports, dance, aquatics, gymnastics.

RECREATION (B.S.Rec.)

This curriculum is primarily for students interested in careers in leadership, supervision, or mgmt of rec parks or youth-serving agencies. Majors in rec satisfy the university, college, and division requirements by taking the following courses:

Course	Credits
Anthr 110 Intro to Physical Anthr & Archaeology	3
Biol 100 Man & the Environment	4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 313 Business Writing	3
English electives (literature)	3
FWR 387 Environmental Interpretive Methods	3
Geog 100, 101 Man's Physical Environment & Lab	4
Geol 101, 102 Physical Geol & Lab	4
H&S 288 First Aid	2
LArch 387 Park & Rec Planning, *or* Geog 447 Rec Geog	2-3
PE 243 Highly Organized Games	2
PE 271 Interp of Physical Ed, Health, & Rec	3
PE 387 Intramural & Athletic Officiating	3
Physical ed activities (must incl swimming & dance)	6
PolSc 101 U.S. Government: Structures & Functions	3
Psych 100 Intro to Psychology	3
RadTV 141 Intro to Rad/TV Broadcasting	3
Rec 254 Camp Leadership	3
Rec 260 Man & Leisure	3
Rec 261 Recreational Arts & Crafts	2
Rec 264 Recreational Music	1
Rec 329 Leadership in Recreation	2
Rec 486 Program Planning for Recreation Centers	3
Rec 494 Admin Practices in Community Rec	3
Rec 495 Internship in Recreation	9
*Recreation option or approved minor	20
Soc 110 Intro to Sociology	3
Sp 131 Fundamentals of Speech, *or* 151 Oral Interp	2
ThA 101 Intro to the Theatre	2
Electives to complete 128 cr for the degree	—

*Options are available in the following areas: a. recreation program development; b. youth agencies; c. therapeutic rec; d. commerial rec; and e. park rec. Consult the head of the Division of Health, Physical Education and Recreation for the specific course requirements.

MINOR IN RECREATION

Course	Credits
PE 105 Square & Social Dance	1
PE 252 Elem School Physical Ed	2-3
PE 271 Interp of Physical Ed, Health, & Rec	3
Rec 254 Camp Leadership	3
Rec 329 Leadership in Recreation	2
Plus three cr from the following: PE 226, PE 387, Rec 486, Rec 494	3

Additional Courses for Women

Six cr selected from the following:

PE 105 Dance	1
PE 108 Swimming	1
PE 115 Team Sports Backgrounds	2
PE 116-117 Individual Sports Backgrounds	2-4
PE 139 Gymnastics	2

Additional Courses for Men

Six cr selected from the following:

H&S 244 Life Saving	1
PE 126 Weight Training & Conditioning	1
PE 138 Swimming	1
PE 139 Gymnastics	2
PE 141 Wrestling	1
PE 142 Tumbling & Floor Exercise	2

SECONDARY EDUCATION (B.S.Ed.)

Reqd course work incl the general requirements for students preparing to teach at the secondary level, plus one course in special methods applicable to secondary schools (Ed 315, 316, 317, 318, 319, 341, H&S 423, or another approved special methods course), and the satisfactory completion of one of the options below:

A. Two 30-cr teaching majors.

B. One 40-cr teaching major and one 20-cr teaching minor.

C. One 30-cr teaching major and two 20-cr teaching minors.

D. One 60-cr teaching major.

SPECIAL EDUCATION (B.S.Ed.)

Reqd course work incl the general requirements plus the following courses (which will qualify the student for the Exceptional Child Certificate and endorsement in Learning Disabilities *or* Mental Retardation):

Course	Credits
Psych 311 Abnormal Psychology	3
SpEd 190 Special Education Laboratory	3
SpEd 275 Ed of Exceptional Children	3
SpEd 377-378 Curriculum Development I-II	6
SpEd 421 Resources & Services	3
SpEd 423 Social & Emotional Aspects	3
SpEd 425 Diagnostic Evaluation	3
SpEd 480 Practicum	9
SpEd 487 Language Development & Disorders	3

Plus completion of the requirements, as specified by the College of Education, for the Idaho Standard Elementary-School Certificate or for the Idaho Standard Secondary-School Certificate.

TECHNICAL EDUCATION (B.S.Ed.)

Reqd course work incl the general requirements for students preparing to teach at the secondary level, plus:

Course	Credits
Engr 101 Engineering Graphics	2
IEd 130 Basic Electricity	4
IEd 131 Basic Electronics	4
IEd 140 Wood Technics	3
IEd 250 General Metals	3
IEd 310 Maintenance of Tools & Equipment	3
IEd 365 Industrial Supervision	2
IEd 450 Industrial Safety	3
IEd 451 School Shop Planning & Admin	3
IEd 462 Industrial Ed Curriculum	3
IEd 472 Industrial Ed Methods	3
Psych 316 Industrial Psychology	3
Technical area of specialization (electricity, electronics, drafting, wood, or metals)	15-18

Students completing less than 60 cr in tech ed and closely related courses must complete one 20-cr teaching minor.

TRADE AND INDUSTRIAL EDUCATION (B.S.Ed.)

Reqd course work incl the general requirements for students preparing to teach at the secondary level, plus:

Course	Credits
VocEd 270, 370, 470 Tech Competence	30
VocEd 322 Vocational Guidance	3
VocEd 351 Principles of Voc Ed	2
VocEd 420 Evaluation in Voc Ed	3
VocEd 450 Industrial Safety	3
VocEd 451 School Shop Planning & Admin	3
VocEd 461 Occupational & Job Analysis	3
VocEd 462 Voc Ed Curriculum	3
VocEd 472 Voc Ed Methods	3
VocEd 480 Advanced Tech Competence	1-6
VocEd 481 Foundations of Voc Ed	2
VocEd 497 Coordination Techniques	3
VocEd 499 Directed Study (or approved electives)	3-9

Students completing less than 60 cr in trade and industrial ed or closely related courses must complete one 20-cr teaching minor.

VOCATIONAL-TECHNICAL EDUCATION (B.S.Ed.)

Reqd course work incl the general requirements for students preparing to teach at the secondary level, plus:

Course	Credits
VocEd 270, 370, 470 Tech Competence	30
VocEd 322 Vocational Guidance	3
VocEd 351 Principles of Voc Ed	2
VocEd 420 Evaluation in Voc Ed	3
VocEd 450 Industrial Safety	3
VocEd 451 School Shop Planning & Admin	3
VocEd 461 Occupational & Job Analysis	3
VocEd 462 Voc Ed Curriculum	3
VocEd 472 Voc Ed Methods	3
VocEd 480 Advanced Tech Competence	1-6
VocEd 481 Foundations of Voc Ed	2
VocEd 497 Coordination Techniques	3
VocEd 499 Directed Study (or approved electives)	3-9

Students completing less than 60 cr in voc-tech ed or closely related courses must complete one 20-cr teaching minor.

Teaching Majors and Minors in the College of Education

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

AGRICULTURAL EDUCATION

The major in ag ed is offered only in the major curriculum leading to the B.S.Ag.Ed. (see College of Agriculture section of the catalog). A teaching minor in ag ed is not offered.

AMERICAN STUDIES

Students who complete this 60-cr teaching major in American studies will *in the process* also have completed *either* a 30-cr teaching major in English (option A, below) *or both* a 30-cr teaching major in history (option B) *and* a 40-cr teaching major in social science (option C). Completing two or three teaching majors is possible because of extensive credit overlap: many of the 60 cr can be applied to more than one teaching major.

For any of these options, the student completes the 54-cr program required for the American studies major in the College of Letters and Science. If his or her "primary area" is American literature, the student takes six more cr in English to be certified both in English (option A) and in American studies. If his or her "primary area" is American history, the student takes six more cr to be certified in both history and social sciences (options B and C), as well as in American studies.

A. ENGLISH OPTION

In addition to Eng 103 and 104, reqd course work includes:

Course	Credits
Eng 267 *or* 268 Survey of Eng Lit	3
Eng 277-278 Survey of Amer Lit	6
Eng 401 Wrtg Workshop for Teachers *or* 402 Composition & Criticism	3
Eng 435 Shakespeare	3
Eng 442 Intro to Transformational Grammar, *or* 443 Language Variation	3
Electives in American Eng (incl at least 9 cr at the 400 level and Eng 441, Intro to Study of Language)	12

B. HISTORY OPTION

Course	Credits
Hist 111-112 Intro to U.S. History	6
Electives in American history (440-level)	12
English or continental history electives	6
History electives (non-American)	6

C. SOCIAL SCIENCE OPTION

Note: Courses must include 3 cr in American govt and at least one course from two of the following: world history, geography, sociology, and economics.

Course	Credits
Hist 111-112 Intro to U.S. History	6
Electives in American history (400-level)	12
English or continental history electives	6
Electives in American govt, econ, geog, and soc/anthro	12
Additional courses in history or areas listed above	4

ANTHROPOLOGY

A teaching major in anthropology is not offered.

15-CREDIT ANTHROPOLOGY TEACHING MINOR

Course	Credits
Anthr 110 Intro to Physical Anthro & Archaeology	3
Anthr 120 Intro to Social Anthropology	3
Anthro 225 Aboriginal North American Indian, *or* 325 Indians of Idaho	3
Approved anthropology elctives	6

ART

A. 30-CREDIT ART TEACHING MAJOR

Course	Credits
Art 101-102 Survey of Art	4
Art 111-112 Drawing I	4
Art 121-122 Creative Process & Design	4
Art 211-212 Drawing II	6

Additional art courses selected from among those listed under the options in design, sculpture, or painting in the B.A. curriculum in art in the College of Letters and Science section of this catalog 12

B. ART TEACHING MINORS

Select 15-20 cr from among the art courses listed above. At least 20 cr are reqd for art to be certified as a secondary school teaching field.

ART AREA

40-CREDIT COMPOSITE TEACHING MAJOR

Course	Credits
Art 101-102 Survey of Art	4
Art 111-112 Drawing I	4
Art 121 Creative Process & Design	2
Approved art electives	10
HEc 113 Art	3
HEc 314 Weaving	3
HEc 326 Housing & Home Furnishings	3
HEc 426 Hist of Interiors & Furnishings	3
IEd 290 Industrial Arts Crafts	2
Photo 281 Understanding Photography	3

BIOLOGICAL SCIENCES

A. 40-CREDIT COMPOSITE TEACHING MAJOR

Course	Credits
Bact 250 General Bacteriology	4
Biol 201 Intro to the Life Sciences	4
Biol 202 General Zoology	4
Biol 203 General Botany	4
Biol 331 General Ecology	3
Biol 351, 352 General Genetics & Lab	4
Biol 361 Biological Literature	1
Bot 311, 312 Plant Physiology & Lab *or* Zool 414, 415 Cell Physiology & Lab	5
Bot 425 Developmental Plant Anatomy	4
Zool 323 Comparative Vertebrate Embryology, *or* 324 Comparative Vertebrate Anatomy	4
Approved electives from bacteriology, biology, botany, entomology, or zoology	3

B. 24-CREDIT COMPOSITE TEACHING MINOR

Course	Credits
Biol 201 Intro to the Life Sciences	4
Biol 202 General Zoology	4
Biol 203 General Botany	4
Biol 331 General Ecology	3
Biol 351, 352 General Genetics & Lab	4
Biol 361 Biological Literature	1
Plus one of the following: Bot 311 & 312, Bot 425, Zool 323, Zool 324, or Zool 414	4-5

BUSINESS EDUCATION

The major in bus ed is offered only in the major curriculum leading to the degree of B.S.Bus.Ed. as outlined in the previous section.

20-CREDIT BOOKKEEPING TEACHING MINOR

Course	Credits
Acctg 201 Principles of Accounting	3
Acctg 202 Managerial Accounting	3
Bus 265 Legal Environment of Business	3
BusEd 491 Teaching Business Ed I	3
Econ 251-252 Principles of Economics	6
OAd 103 Typewriting III	2

CHEMISTRY

Note: See the physics and math prerequisites for the chem courses listed below.

A. 30-CREDIT CHEMISTRY TEACHING MAJOR

Course	Credits
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 305-306 Physical Chemistry	6
Chem 372 Organic Chemistry II	3
Chem 380 Introductory Biochemistry	3

B. CHEMISTRY TEACHING MINORS

The teaching minor in chem may be 15 or 20 cr. For secondary-school teacher certification, 20 cr is required.

Course	Credits
Chem 111 Prin of Chem *or* 103 Intro to Chem	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 275, 278 Carbon Compounds & Lab	4
Chem 302, 303 Prin of Physical Chem & Lab	4
Chem 380 Introductory Biochemistry	3

COACHING

A teaching major in coaching is not offered.

20-CREDIT TEACHING MINOR IN COACHING

Students majoring or having a teaching major in an academic field *outside* the Division of Health, Physical Education and Recreation may elect this coaching minor. Students majoring or having a teaching minor in physical ed may *not* elect this coaching minor. Students who elect this minor must include in their background a course in anatomy and physiology such as Zool 119.

Course	Credits
H&S 245 Intro to Athletic Injuries	3
PE 418 Physiology of Exercise	3
PE 497 Sports & Athletic Problems	3
Two courses selected from the following: PE 387, 419, 425	6
Five credits selected from the following: PE 141, 341, 342, 343, 344	5

COMMUNICATION

40-CREDIT COMMUNICATION TEACHING MAJOR

Course	Credits
Comm 120 Mass Communication in a Free Society	2
Comm 362 Advertising Media & Sales: Print	2
Jour 121 News Writing	3
Jour 222 Reporting	3
Jour 354 News Editing	3
Jour 405 Supervising High School Publications	2
Photo 281 Understanding Photography	3
RadTV 141 Intro to Radio-TV Broadcasting	3
RadTV 253 Recording & Broadcasting Techniques	3
RadTV 285 Announcing & Radio Production I	2
RadTV 292 Intro to TV Production	3
Sp 109 Intercollegiate Forensics	1
Sp 141 Interpersonal Communication	2
Sp 231 Informative Speech	2
Sp 331 Persuasive Speech	3
Sp 362 Communication & the Small Group	3

DANCE

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

20-CREDIT DANCE TEACHING MINOR

Course	Credits
Art 101 *or* 102 Survey of Art	2
Dan 105 Square & Social Dance	1
Dan 105 Dance (folk and modern)	2
Dan 112 Dance Techniques	2
Dan 113 Problems in Dance Composition	2
Dan 220 Rhythms for Children	2
Dan 320 Labanotation	1
Dan 321 Theory & Technique of Teaching Dance	2
Dan 325 Dance Production	2
MusH 100 Music Appreciation	3
Two credits selected from the following: Dan 105 (adv folk, ballet, and jazz), Dan 113, Dan 499, Film 388, PE 111, RadTV 292, RadTV 322, ThA 105, or ThA 266	2

DISTRIBUTIVE EDUCATION

The major in distributive ed is offered only in the major curriculum leading to the degree of B.S.Bus.Ed. as outlined in the previous section. A teaching minor in distributive ed is not offered.

EARTH SCIENCE

40-CREDIT COMPOSITE TEACHING MAJOR

Course	Credits
Geog 100, 101 Man's Physical Environment & Lab	4
Geog 140 Economic Geography	3
Geog 250 World Regional Geography	3
Geog 362 United States & Canada	3
Geog 380 Cartography	4
Geog 401 Atmospheric Environment	3
Geol 101, 102 Physical Geology & Lab	4
Geol 106, 107 Historical Geology & Lab	4
Geol 211 Ancient Life	4
Geol 255 Mineralogy	2
Geol 265 Lithology	2
Geol 335 Geomorphology	3
Plus two approved cr; the following are recommended: Geog 427, 455, Geol 301, 345	2

EDUCATIONAL ADMINISTRATION

No undergrad major or minor is offered in ed admin. Students who are planning to go into this field must first complete an undergrad prog, preferably with a teaching major in social science, obtain a bachelor's degree and teaching experience, then enter the Graduate School to pursue a prog leading to an adv degree in ed admin.

ENGLISH

Note: No English course numbered below 267 may be counted toward the satisfaction of the minimum cr reqd for a teaching major or teaching minor in English. Recommended preparation includes Eng 111-112 (Lit of Western Civ) or 175 (Intro to Lit). Where specific courses are listed with the area requirements, the Dept of English may approve equivalencies.

A. 30-CREDIT ENGLISH TEACHING MAJOR

Course	Credits
Eng 267-268 Survey of English Lit	6
Eng 277 *or* 278 Survey of American Lit	3
Eng 401 *or* 402 Wrtg Workshop for Teachers *or* Composition & Criticism	3
Eng 435 Shakespeare	3
Eng 441 *and* 442 *or* 443 Linguistics	6
Area requirements (one course from each of the following three groups)	9

Middle Ages/Renaissance/17th Cent: Eng 433, 434, 437, 451, 452, 453

Restoration/18th & 19 Cent British: Eng 421, 422, 438, 456, 465, 466

American Lit/20th Cent Brit & Am: Eng 426, 427, 428, 439, 470, 471, 472, 474

B. 30- OR 40-CREDIT COMPOSITE ENGLISH TEACHING MAJOR

Requirements include the same courses specified for the 30-cr English teaching major, plus 10 cr in approved electives from English, journalism, speech, or theatre arts. English electives must be selected from among the following or from those courses not used to satisfy the area requirements specified above:

Eng 400, 425, 436, 473, 482-483, 494, 495

C. 20-CREDIT ENGLISH TEACHING MINOR

Course	Credits
Eng 267-268 Survey of English Lit	6
Eng 277 *or* 278 Survey of American Lit	3
Eng 401 *or* 402 Wrtg Workshop for Teachers *or* Composition & Criticism	3
Eng 435 Shakespeare	3
Eng 441 Intro to Study of Language	3
Approved English electives	2

D. 15-CREDIT ENGLISH TEACHING MINOR

Course	Credits
Eng 267-268 Survey of English Lit	6
Eng 401 *or* 402 Wrtg Workshop for Teachers *or* Composition & Criticism	3
Eng 435 Shakespeare	3
Eng 441 Intro to Study of Language	3

ENVIRONMENTAL EDUCATION

60-CREDIT COMPOSITE TEACHING MAJOR

For students who wish to pursue a broad interdisciplinary major to prepare for working in school-related environmental programs. Certification granted following completion of this major is for environmental education only. Those wishing certification in other fields must complete the appropriate program outlined elsewhere in this section (see Biological Sciences, Chemistry, Earth Science, Physical Science, Physics). The candidate will have two advisers: one from education and the other selected from the faculties of biological science, earth science, or forestry, range and wildlife. Any changes or substitutions in the program outlined below must be approved by the two advisers.

Course	Credits
Biol 201 Introduction to the Life Sciences	4
Biol 202 General Zoology	4
Biol 203 General Botany	4
Bot 241 Systematic Botany	3
Chem 103 Introduction to Chemistry	4
FWR 205 Wildland Resource Conservation *or* Geog 220 Environment and Population of U.S.	3-4
FWR 287 Prin of Wildland Recreation Management	2
FWR 387 Env Interpretive Methods	3
FWR 390 Principles of Fish and Wildlife Ecology *or* Biol 331 General Ecology	3
FWR 489 Personalities & Philosophies in Conservation	2
FWR 493 Environmental Law *or* Geog 420 Land and Resource Regulation	2-4
Geog 100-101 Man's Physical Environment & Lab *or* Geol 101-102 Physical Geology & Lab	4
Geog 180, 181, 182 Spatial Graphics	3
Geog 427 Decision-Making in Resource Mgmt	3-4
Geog 430 Urban Geography	3-4
Geog 495 Public Planning Participation	1
Phys 101 Fundamentals of Physical Science	4
Soils 354 Soil Resources and Land Use Planning	2
Approved electives in natural history	9
Additional Strongly Recommended Electives:	
ApSt 307 Principles of Statistics	3
Chem 275 Carbon Compounds	3
Rec 255 Backpacking and Camping Skills	2
Art electives	3

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 Dept of Foreign Languages and Literatures for policies on adv placement.

A. 30-CREDIT FRENCH TEACHING MAJOR

Course	Credits
FL/FR 101-102 Elementary French	8
FL/FR 201-202 Intermediate French	8
FL/FR 301-302 Adv French Grammer & Composition	6
FL/FR 303-304 French Culture & Institutions	6
FL/FR 413 French for Teachers	2

Additional preparation in the French courses listed in the catalog is recommended.

B. 20-CREDIT FRENCH TEACHING MINOR

Course	Credits
FL/FR 101-102 Elementary French	8
FL/FR 201-202 Intermediate French	8
Approved French electives (FL/FR 301-302 is especially recommended	4

Note: A minor in French of less than 20 cr is not acceptable.

GEOGRAPHY

A. 30-CREDIT GEOGRAPHY TEACHING MAJOR

Course	Credits
Geog 100, 101 Man's Physical Environment & Lab	4
Geog 140 Economic Geography	3
Geog 165 Human Geography	3
Geog 250 World Regional Geography	3
Geog 362 United States & Canada	3
Geog 364 Idaho & Pacific Northwest	3
Geog 401 Atmospheric Environment	3
Geog 455 Southwest, South & Southeast Asia	3
Geog 465 Political Geography	3
Approved geog electives (Geog 427 recommended)	2

B. 20-CREDIT GEOGRAPHY TEACHING MINOR

Course	Credits
Geog 100, 101 Man's Physical Environment & Lab	4
Geog 140 Economic Geography	3
Geog 165 Human Geography	3
Geog 250 World Regional Geography	3
Geog 362 United States & Canada	3
Geog 427 Decision Making in Resource Mgmt	3
Approved geog electives (Geog 455 recommended)	1

GEOLOGY

A teaching major in geology is not offered.

20-CREDIT GEOLOGY TEACHING MINOR

Course	Credits
Geol 101, 102 Physical Geology & Lab	4
Geol 106, 107 Historical Geology & Lab	4
Geol 211 Ancient Life	4
Geol 255 Mineralogy	2
Geol 265 Lithology	2
Plus four credits from the following	4
Geol 301 Field Geol & Report Wrtg	
Geol 335 Geomorphology	
Geol 345 Structural Geology	

GERMAN

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

A. 30-CREDIT GERMAN TEACHING MAJOR

Course	Credits
FL/GN 121-122 Elementary German	8
FL/GN 221-222 Intermediate German	8
FL/GN 321-322 Adv German Grammar & Composition	6
FL/GN 327-328 Survey of German Lit	6
FL/GN 433 German for Teachers	2

Additional preparation in the German courses listed in the catalog is recommended.

B. 20-CREDIT GERMAN TEACHING MINOR

Course	Credits
FL/GN 121-122 Elementary German	8
FL/GN 221-222 Intermediate German	8
Approved German electives (FL/GN 321-322 is especially recommended)	4

Note: A minor in German of less than 20 cr is not acceptable.

GUIDANCE AND COUNSELING

An undergrad major is not offered in guid and counseling. Students who wish to qualify for guid and counseling may qualify as teachers in any subject area and enroll in guid and counseling programs later in grad school. Those definitely planning to become counselors should seek an adviser from the guid faculty. Generally a major in psych and a minor in soc/anthro or a major in soc/anthro and a minor in psych is the preferred undergrad prep for counseling candidates. The current prerequisites for grad work in guid and counseling are contained in a psych minor.

HEALTH EDUCATION

A teaching major in health education is not offered.

20-CREDIT HEALTH EDUCATION TEACHING MINOR

Students minoring in health ed who plan to apply for teacher certification must include courses in anatomy and physiology, general biol, and first aid among the courses they select to meet the general studies requirements.

Course	Credits
Bact 254 Public Health & Hygiene	3
H&S 150 Foundations of Health Science	3
H&S 289 Drugs in Society	2
HEc 270 Nutrition	3
HEc 448 Consumer Education	3
Psych 210 Human Sexuality *or* 311 Abnormal Psych *or* Soc 230 Social Problems	2-3
Soc 320 Marriage & the Family *or* HEc 340 Family Relations	3

HISTORY

A. 30-CREDIT HISTORY TEACHING MAJOR

Course	Credits
Hist 101-102 History of Civilization	6
Hist 111-112 Intro to U.S. History	6
American government	3
Additional history courses	15

Note: In selecting the 15 cr in courses offered by the Dept of History, balance them as closely as feasible to an equal number of cr in the hist of the old world and the hist of the new world. Students who will also have a teaching minor in English are urged to take at least 6 cr in English hist as a part of this teaching major.

Students seeking secondary-school certification from the state of Idaho are urged to get it in social studies rather than hist. For this purpose, they should also take, in addition to the above, at least 3 cr in geog, soc, econ, or anthr.

B. HISTORY TEACHING MINORS

The teaching minor in history may be 15 or 20 cr; however, for Idaho secondary-school certification, a minimum of 20 is required. All courses must be in hist. Follow the hist teaching major (above) in selecting courses. Students who will also have a teaching major in English are urged to take at least 6 cr in English hist as a part of the 20 cr required in the hist minor.

HOME ECONOMICS EDUCATION

The major in home ec ed is offered only in the major curriculum leading to the B.S.H.Ec. (see School of Home Economics section of the catalog). A teaching minor in home ec ed is not offered.

INDUSTRIAL EDUCATION

The major in industrial ed is offered only under the major curriculum outlined in the previous section.

20-CREDIT TEACHING MINOR IN INDUSTRIAL EDUCATION

For certification to teach industrial ed, a teaching minor must contain at least 20 cr, incl not less than 15 cr distributed among and incl 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 reqd below.

Course	Credits
Engr 101 Engineering Graphics	2
IEd ID130 Basic Electricity	4
IEd 140 Wood Technics	3
IEd 250 General Metals	3
IEd 310 Maintenance of Tools & Equipment	3
IEd 462 Industrial Ed Curriculum	3
IEd 472 Industrial Ed Methods	3

JOURNALISM

A teaching major in journalism is not offered.

20-CREDIT JOURNALISM TEACHING MINOR

Course	Credits
Comm 120 Mass Comm in a Free Society	2
Comm 455 Hist of Mass Communication	3
Jour 121 News Writing	3
Jour 222 Reporting	3
Jour 354 News Editing	3
Jour 405 Supervising High School Publications	2
Journalism electives	4

LATIN

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 Dept of Foreign Languages and Literatures for policies on adv placement.

A. 30-CREDIT LATIN TEACHING MAJOR

Course	Credits
FL/LA 161-162 Elementary Latin	8
FL/LA 261-262 Intermediate Latin	8
FL/LA 361-262 Adv Latin Grammar & Composition	6
FL/LA 365-366 Survey of Latin Literature	6
FL/LA 467 Latin for Teachers	2

Additional preparation in the Latin courses listed in the catalog is recommended.

B. 20-CREDIT LATIN TEACHING MINOR

Course	Credits
FL/LA 161-162 Elementary Latin	8
FL/LA 261-262 Intermediate Latin	8
Approved Latin electives (FL/LA 361-362 is especially recommended)	4

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

LIBRARY SCIENCE

A teaching major in library science is not offered.

LIBRARY SCIENCE TEACHING MINORS

The teaching minor in library sc may be either 15 or 20 cr. This teaching minor will qualify the student for the Idaho school librarianship credential. Since library sc is not a teaching field, the teacher-librarian who must qualify for a standard Idaho teacher's certificate will need to develop a second teaching minor in addition to his or her teaching major.

Course	Credits
LibSc 420 Classification & Cataloging	4
LibSc 421 Selection of Books	3
LibSc 422 Use of the School Library	2
LibSc 423 Reference in School Libraries	3
Library science electives	3-8

MATHEMATICS

A. 40-CREDIT MATHEMATICS TEACHING MAJOR

Course	Credits
Math 180, 190, 200 Analyt Geom & Calculus	11
Math 184 Elements of Linear Algebra	2
Math 186 Theory of Numbers	3
Math 300 Math for Teachers, *or* 490 Intro to Set Theory	3
Math 320 Probability & Statistics, *or* 451 Prob Theory & Math Statistics	3
Math 390 Postulational Geometry	3
Math 461 Higher Algebra	3
Math 471 Advanced Calculus	3
Additional math courses numbered above 200	9

B. 30-CREDIT MATHEMATICS TEACHING MAJOR

Course	Credits
Math 180, 190, 200 Analyt Geom & Calculus	11
Math 184 Elements of Linear Algebra	2
Math 186 Theory of Numbers	3
Math 300 Math for Teachers, *or* 490 Intro to Set Theory	3
Math 320 Probability & Statistics, *or* 451 Prob Theory & Math Statistics	3
Two courses form the following: Math 390, 461, 471	6
One additional math course numbered above 200	2

C. 20-CREDIT MATHEMATICS TEACHING MINOR

Course	Credits
Math 180, 190 Analyt Geom & Calculus I-II	8
Math 186 Theory of Numbers	3
Math 300 Mathematics for Teachers	3
Math 320 Probability & Statistics, *or* 451 Probability Theory & Math Statistics	3
One of the following courses: Math 205, 390, 461	3

D. 15-CREDIT MATHEMATICS TEACHING MINOR

Course	Credits
Math 180 Analyt Geom & Calculus I	4
Math 184 Elem of Linear Algebra	2
Math 186 Theory of Numbers	3
Math 300 Mathematics for Teachers	3
One of the following courses: Math 190, 205, 320, 390	3

MUSIC EDUCATION

Majors in music ed are offered only in the major curricula leading to the degree of B.Mus. (see School of Music section of this catalog).

20-CREDIT MUSIC TEACHING MINOR

Course	Credits
MusA 387 Conducting I	2
MusC 133 Theory Keyboard Lab	1
MusC 141, 142 Musicianship & Music Lit and Theory of Music I, *or* MusC 121-122 Elements of Music Theory	6-8
MusH 321-322 Music in Western Civ, *or* two courses from the following: MusH 144, 243, 244, 411, 412, 413, 414, 415, 416, 417, 418	4-6
MusT 381 Elem School Music Methods *or* 385 Choral Music in the Secondary School, *or* 386 Instr Music in the Secondary School	2-3
Applied performance electives	1
Electives to total 20 cr for the teaching minor selected from the following: MusA 145-146, 147-148, 265, 365, 487; MusT 251, 252, 253, 254, 383	—

OFFICE OCCUPATIONS EDUCATION

The major in office occupations ed is offered only in the major curriculum leading to the degree of B.S.Bus.Ed. as outlined in the previous section.

21-CREDIT OFFICE OCCUPATIONS EDUCATION TEACHING MINOR

Course	Credits
BusEd 491 Teaching Business Ed I	3
Eng 313 Business Writing	3
OAd 103 Typewriting III	2
OAd 185 Machine Calculation	2
OAd 271-272 Shorthand III-IV	6
OAd 313 Office Management	2
OAd 395 Secretarial Procedures	3

OFFICER EDUCATION

TEACHING MINORS IN OFFICER EDUCATION

This teaching minor may consist of either 15 or 20 cr in approved courses from aerospace studies, military science, or naval science.

PHYSICAL EDUCATION

Also see: coaching, dance, health ed, and rec.

Majors in physical ed are offered only under the major curricula outlined in the previous section.

TEACHING MINORS IN PHYSICAL EDUCATION

Students who plan to apply for teacher certification must take health ed and anatomy or physiology. These requirements may be met by taking H&S 423, Health Education Methods, and Zool 119, Human Anatomy & Physiology.

The general university requirement in physical ed activity courses is waived for majors and minors in this field.

A. 20-CREDIT MINOR FOR SECONDARY LEVEL

Course	Credits
PE 105 Dance	1
PE 108 Swimming (demonstrate swimming proficiency or take interm swim)	0-1
PE 115 Team Sports Background	2
PE 116 *or* 117 Individual Sports Background	2

PE 139 *or* 142 Gymnastics *or* Tumbling 2
PE 271 Interp of Physical Ed, Health & Rec 3
PE 322 Teaching Individual Sports 2
PE 427 Methods & Materials in Physical Ed 2
PE 496 Organization & Administration 3
H&S 245 Intro to Athletic Injuries 3

Recommended electives:

PE 252 Elem School Physical Education
PE 418 Physiology of Exercise
PE 419 Kinesiology

B. 20-CREDIT MINOR FOR ELEMENTARY LEVEL

Course	Credits
Dan 220 Rhythms for Children	2
H&S 150 Foundations of Health Sc	3
PE 111 Fundamentals of Movement	2
PE 115 Team Sports Background	2
PE 116 *or* 117 Individual Sports Background	2
PE 142 Tumbling & Floor Exercise	2
PE 252 Elem School Physical Education	2-3
PE 271 Interp of Physical Ed, Health & Rec	3
PE 427 Methods & Materials in Physical Ed	2

Recommended electives:

PE 243 Highly Organized Games
PE 264 Recreational Music

PHYSICAL SCIENCES

40-CREDIT COMPOSITE TEACHING MAJOR

This is a 40-cr composite teaching major consisting of courses in chem, geol, and physics. It must include at least 18 cr in chem or physics and a minimum of 8 cr in each of these two fields. A teaching minor in math is recommended to accompany this teaching major.

Course	Credits
Chem 111 Prin of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 275 Carbon Compounds	3
Geol 101-102 Physical Geology & Lab	4
Phys 220-221-222 Engineering Physics	9
Phys 411-412 Physical Instrumentation	5
Additional courses in chem, geol, or physics to complete distribution required above	—

Recommended electives:

Chem 302 Prin of Physical Chem
Chem 380 Introductory Biochemistry

PHYSICS

Electives specified in the following programs require approval by the adviser from the Dept. of Physics.

Math 180, 190, and 200 are prereq to the reqd physics courses.

A. 30-CREDIT PHYSICS TEACHING MAJOR

Course	Credits
Phys 220-221-222 Engineering Physics	9
Phys 321 Analytical Mechanics	3
Phys 341 Electricity & Magnetism	3
Phys 360 Intro to Modern Physics	3
Approved electives in physics, incl at least 2 cr of lab work	12

B. 20-CREDIT PHYSICS TEACHING MINOR

Course	Credits
Phys 220-221-222 Engineering Physics	9
Phys 360 Intro to Modern Physics	3
Approved electives in physics, incl at least 2 cr of lab work	8

POLITICAL SCIENCE

A. 30-CREDIT POLITICAL SCIENCE TEACHING MAJOR

The distribution of cr among the five fields below must be as follows: (1) 12-15 cr in U.S. govt and political process, incl PolSc 101, U.S. Govt: Structures & Functions; and (2) 15-18 cr in the other four fields, incl at least 3 cr in each field. Courses listed in more than one field maybe counted in only one of those fields. Substitutions in specific courses may be made with the consent of the adviser. All 30 cr must be in political sc courses, however, note that 6 cr in U.S. hist are also reqd for certification in this field.

U.S. Government and Political Process **Credits**
PolSc 101 U.S. Govt: Structures and Functions 3
Plus 9-12 cr from the following:
PolSc 105, 275, 276, 428, 431, 432, 433, 451, 452, 467, 469, 493-494

Comparative Government and Politics
At least 3 cr from the following:
PolSc 285, 286, 385, 483, 484

International Relations
At least 3 cr from the following:
PolSc 237, 341, 438, 440, 443

Public Administration and Public Law
At least 3 cr from the following:
PolSc 451, 452, 454, 467, 469

Political Thought
At least 3 cr from the following:
PolSc 425, 426, 428

B. TEACHING MINOR IN POLITICAL SCIENCE

The teaching minor in political sc may be 15 or 20 cr, but only the latter will satisfy the requirements for teacher certification at the secondary-school level. Six cr of U.S. hist are also reqd for certification in this field.

Course	Credits
PolSc 101 U.S. Govt: Structures & Functions	3
Three additional cr in U.S. govt (see the list of courses in U.S. govt and political process under the teaching major above)	3
Three cr in comparative govt (see the list of courses in comparative govt and politics under the teaching major above)	3
Approved political sc courses selected from those listed under the teaching major	6-11

PSYCHOLOGY

A. 30-CREDIT PSYCHOLOGY TEACHING MAJOR

The basic objective of this teaching major is to provide the undergrad student with prep that leads to teaching psych in secondary schools, and/or to undertake grad work in several related areas. Though psych is certifiable, it is desirable to present two teaching minors in standard secondary-school subjects. At least a teaching minor in soc/anthro is recommended for those anticipating grad work in guid and counseling and school psych. A second teaching major in lieu of two teaching minors is acceptable prep. The composite teaching majors (e.g. social science or physical science), if elected as a second teaching major should meet the 40-cr requirement.

Course	Credits
Psych 100 Intro to Psychology	3
Psych 201 Research in Behavioral Sc	4
Psych 205 Developmental Psychology	3
Psych 217 Intro to Stat for Behavioral Sc	3
Psych 311 Abnormal Psych, *or* 302 Soc Psych, *or* 461 Psych of Personality	3
Psych 400 Seminar	3
Psych 441 Physiological Psych, *or* 444 Sensation & Perception, *or* 455 Psych of Motivation	3
Psych 490 Psychology of Learning	3
Psychology electives (Guid 420 and 460 are recommended for students planning to pursue grad work in guid and counseling)	5

B. 20-CREDIT PSYCHOLOGY TEACHING MINOR

Course	Credits
Psych 100 Intro to Psychology	3
Psych 201 Research in Behavioral Sc	4
Psych 205 Developmental Behavioral Sc	3
Psych 217 Intro to Stat for Behavioral Sc	3
Psych 490 Psychology of Learning	3
Approved psychology electives	4

RECREATION

The major and minor in rec are outlined in the previous section.

RUSSIAN

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 Dept of Foreign Languages and Literatures for policies on adv placement.

A. 30-CREDIT RUSSIAN TEACHING MAJOR

Course	Credits
FL/RU 171-172 Elementary Russian	8
FL/RU 271-272 Intermediate Russian	8
FL/RU 371-372 Adv Russian Grammar & Composition	6
FL/RU 498 Russian Proseminar (or equiv)	8

Additional prep in Russian seminars or directed study is recommended.

B. 20-CREDIT RUSSIAN TEACHING MINOR

Course	Credits
FL/RU 171-172 Elementary Russian	8
FL/RU 271-272 Intermediate Russian	8
Approved Russian electives (FL/RU 371-372 is especially recommended)	4

Note: A minor in Russian of less than 20 cr is not acceptable.

SOCIAL SCIENCE

A. 40-CREDIT COMPOSITE TEACHING MAJOR

Courses for this composite teaching major may be selected from anthro, econ, geog (excluding physical geog), hist, philosophy, political sc, and soc. At least 18 of the reqd 40 cr must be from hist, incl at least 9 cr in U.S. hist. At least 3 cr are reqd in each of the following fields: U.S. govt, econ, geog, and soc or anthro.

B. 20-CREDIT COMPOSITE TEACHING MINOR

Reqd course work consists of approved courses from the fields listed above. This composite minor must include at least 3 cr in U.S. hist or govt and is limited to students who are majoring in elem ed.

SOCIOLOGY

A teaching major in sociology is not offered.

15-CREDIT SOCIOLOGY TEACHING MINOR

Course	Credits
Soc 110 Intro to Sociology	3
Soc 230 Social Problems	3
Approved sociology electives	9

SOCIOLOGY/ANTHROPOLOGY

A teaching major in soc/anthro is not offered.

20-CREDIT SOCIOLOGY/ANTHROPOLOGY TEACHING MINOR

Course	Credits
Anthr 100 Intro to Physical Anthr & Archaeology, *or* 120 Intro to Social Anthr	3
Anthr 225 Aboriginal North American Indian, *or* 325 Indians of Idaho	3
Soc 110 Intro 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 equivalancies as part of this teaching major and minor. Consult the Dept of Foreign Languages and Literatures for policies on adv placement.

A. 30-CREDIT SPANISH TEACHING MAJOR

Course	Credits
FL/SP 181-182 Elementary Spanish	8
FL/SP 281-282 Intermediate Spanish	8
FL/SP 381-382 Adv Spanish Grammar & Composition	6
FL/SP 383-384 Hispanic Culture & Institutions	6
FL/SP 493 Spanish for Teachers	2

Additional prep in the Spanish courses listed in the catalog is recommended.

B. 20-CREDIT SPANISH TEACHING MINOR

Course	Credits
FL/SP 181-182 Elementary Spanish	8
FL/SP 281-282 Intermediate Spanish	8
Approved Spanish electives (FL/SP 381-382 is especially recommended)	4

Note: A minor in Spanish of less than 20 cr is not acceptable.

SPECIAL EDUCATION

The major in special ed is offered only under the major curriculum outlined in the previous section.

20-CREDIT SPECIAL EDUCATION TEACHING MINOR

Course	Credits
SpEd 190 Special Education Lab	2
SpEd 275 Ed of Exceptional Children	3
Approved special education electives	15

Note: This minor is designed for individuals preparing to work in fields ancillary to special ed. It is not intended for those who are interested in teaching the exceptional child.

SPEECH

A. 30-CREDIT SPEECH TEACHING MAJOR

Course	Credits
Comm 488 Theory in Communication	3
Sp 109 Intercollegiate Forensics	1
Sp 111 Great Speakers on Great Issues	2
Sp 121 Improving Listening Skills	1
Sp 131 Fundamentals of Speech	2
Sp 140 Nonverbal Communication	1
Sp 141 Interpersonal Communication	2
Sp 151 Oral Interpretation	2
Sp 231 Informative Speech	2
Sp 262 Parliamentary Law & Procedure	1
Sp 311 Intercultural Communication	2
Sp 321 Interviewing	3
Sp 331 Resolution of Conflict	2
Sp 341 Organizational Communication	3
Sp 362 Communication & the Small Group	3

B. SPEECH TEACHING MINORS

The teaching minor in speech may be 15 or 20 cr; however, 20 cr are reqd for certification in speech at the secondary-school level. Select courses from those specified for the speech teaching major.

THEATRE ARTS

A. 30-CREDIT THEATRE ARTS TEACHING MAJOR

Course	Credits
ThA 102 Stage Makeup	1
ThA 105 Basics of Performance	2
ThA 163 Technical Production	3
ThA 271 Play Analysis	3
ThA 272 Intermediate Acting	3
ThA 362 Costume for the Stage	3
ThA 420 Production Management	2
ThA 471-472 Directing	6
Approved theatre arts electives	8

B. THEATRE ARTS TEACHING MINORS

The teaching minor in theatre arts may be 15 or 20 cr. For secondary-school teacher certification, 20 cr are reqd.

Course	Credits
ThA 102 Stage Makeup	1
ThA 105 Basics of Performance	2
ThA 163 Technical Production	3
ThA 271 Play Analysis	3
ThA 362 Costume for the Stage	3
ThA 420 Production Management	2
ThA 471 Directing	3
Approved theatre arts electives	4

THEATRE ARTS-SPEECH

40-CREDIT COMPOSITE TEACHING MAJOR

Course	Credits
Sp 109 Intercollegiate Forensics	1
Sp 111 Great Speakers on Great Issues	2
Sp 131 Fundamentals of Speech	2
Sp 140 Nonverbal Communication	1
Sp 141 Interpersonal Communication	2
Sp 151 Oral Interpretation	2
Sp 231 Informative Speech	2
Sp 262 Parliamentary Law & Procedure	1
Sp 331 Resolution of Conflict	2
Sp 362 Communication & The Small Group	3
ThA 102 Stage Makeup	1
ThA 105 Basics of Performance	2
ThA 163 Technical Production	3
ThA 362 Costume for the Stage	3
ThA 420 Production Management	2
ThA 471-472 Directing	6
Approved electives in theatre arts and speech	6

TRADE AND INDUSTRIAL EDUCATION

The major in trade and industrial ed is offered only in the major curriculum leading to the B.S.Ed. degree as outlined in the previous section. A teaching minor in trade and industrial ed is not offered.

TRAFFIC SAFETY EDUCATION

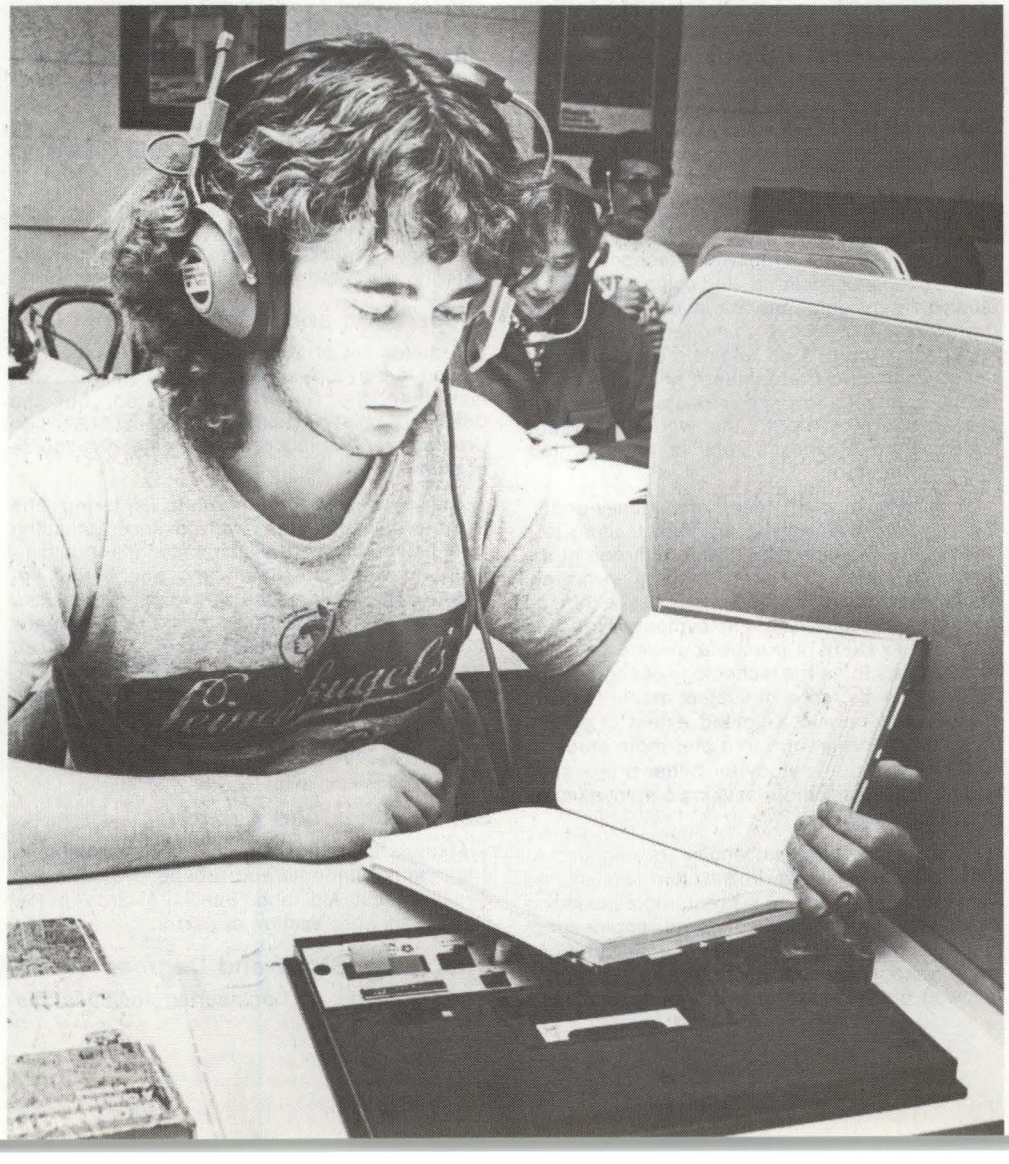
A teaching major in traffic safety ed is not offered.

20-CREDIT TRAFFIC SAFETY EDUCATION TEACHING MINOR

Course	Credits
CE 372 Transportation Engr	4
H&S 316 Elem School Health Materials	2
H&S 400 Seminar: Driver Rehabilitation	1
H&S 400 Seminar: Court Alcohol School	1
H&S 440 Driver Education I	3
H&S 449 Driver Education II	3
IEd 450 Industrial Safety	3
Recommended electives:	
H&S 301 Drug Education	2
Psych 320 Intro to Social Psych	3
Psych 455 Psych of Motivation	3

VOCATIONAL-TECHNICAL EDUCATION

The major in vo-tech ed is offered only in the major curriculum leading to the B.S.Ed. degree as outlined in the previous section. A teaching minor in vo-tech ed is not offered.



College of Engineering

Robert R. Furgason, Dean (125 Janssen Engr. Bldg.); George R. Russell, Assistant Dean and Secretary of the College Faculty; Weldon R. Tovey, Assistant Dean.

The purpose of the College of Engineering is to provide an educational experience that will afford maximum opportunity for qualified students to develop into useful citizens and well-educated professional engineers. To this end, the facilities of the entire university are available to students of the College of Engineering.

The Engineering Profession

Members of the engineering profession create useful and economical works for the benefit of mankind through the practical application of mathematics and science. 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 planning and execution of systems needed for the support of all human activity such as food production, transportation, and control of the environment. Many engineers hold responsible management 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 upon completion 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.

Engineering Aptitudes

Those likely to succeed in engineering are students of serious purpose, willing to do consistently hard work, and with high school records that show marked ability in mathematics, physics, and chemistry. Equally important are: (a) ability to visualize in three dimensions the parts of a structure or the operation of a machine or device; (2) facility in the use of written and spoken English; and (3) possession of those desirable personal attributes that enable one to inspire associates and assistants to work together effectively. Without these qualifications, the chances for a successful career are poor.

If the above qualifications and aptitudes are lacking, it is not advisable to undertake the study of engineering. A desire or ability to tinker with machines, to make things with one's hands, or to operate machinery is helpful but not enough. Students with only this desire or ability should consider vocational or technical institute training in preference to professional engineering.

Although engineering has been traditionally practiced by men, there are many opportunities for women. An increasing number of women are entering the profession.

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 junior college or other institutions should include as many freshman and sophomore requirements listed in the curricula as possible. Calculus and the various engineering science courses are prerequisites to many advanced courses, and their omission will delay graduation.

A junior engineering student must have at least a 2.00 grade point average before being permitted to register in upper-division courses offered by the College of Engineering.

Scholarships and Awards

Many scholarships and awards are available to engineering students and prospective students. See "Financial Aid" and "Special Awards" in the student services section of part 2.

Courses of Study and Degrees

The College of Engineering includes the

degree-granting departments of Agricultural, Chemical, Civil, Electrical, and Mechanical Engineering. Careful attention is given to curriculum content and educational philosophy to keep all programs attuned to the rapidly changing concepts and technology of engineering. All curricula are accredited by the Engineers' Council for Professional Development.

First degree, four-year programs lead to the B.S. in all departments, i.e., Bachelor of Science in Agricultural Engineering, Bachelor of Science in Chemical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Electrical Engineering, and Bachelor of Science in Mechanical Engineering and to the Bachelor of Science in Computer Science.

The Bachelor of Science programs are designed to prepare the student either for immediate entry into the profession as an engineer-in-training 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 until as late as the beginning of the junior year 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. Interdepartmental activities are designed to lead the student to an awareness of the interrelationships among all practice fields in engineering.

Technological development in recent years has resulted in an increasing interaction between society and engineering. Recognition of this fact has led to emphasis on subjects in the humanities and social sciences. A program leading concurrently to a Bachelor of Arts degree in the College of Letters and Science and a Bachelor of Science degree in one of the engineering branches can be arranged by extending the humanities and social science studies. Such double degree programs normally require five years to complete and are subject to the provisions of regulation J-7 in part 3.

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. are also offered in nuclear engineering through the facilities at INEL in Idaho Falls. The requirements for graduate degrees are outlined in the graduate bulletin.

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; 50 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 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 block-square engineering complex, which includes the Allen S. Janssen Engineering Classroom Building and the J. E. Buchanan, J. Hugo Johnson, and Henry F. Gauss Engineering Laboratories. These facilities are supplemented by the agricultural engineering and isotope laboratories at other locations on the campus. In total, more than 175,000 square feet of floor space are available for the special use of the College of Engineering.

Of particular interest is the J. E. Buchanan Engineering Laboratory. This modern facility houses all of the chemical and civil engineering laboratories and part of the agricultural and electrical engineering laboratories. It also includes the regional materials laboratory of the Idaho Department of Highways. The laboratories include the latest equipment for teaching and research. Some of the equipment is of advanced design found in only a few institutional laboratories.

Experience working with computers is required of all engineering students. The university's IBM 370-145 digital computer is used for classroom and research problems. Various types of smaller computers are available in the engineering laboratories.

Standing and Advantages

The University of Idaho College of Engineering is a fully accredited center for undergraduate and graduate engineering education. Since 1896, when it granted its first degrees, its graduates 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 attests 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 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.

General Requirements for Graduation

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

College Requirements. Each of the five degree curricula requires a total of 128 semester credits.

Note: In calculating the 128-credit total for engineering degrees, the College of Engineering does not include credits that a student may have been required to earn in Eng 103, Math 140, and any courses to remove deficiencies.

FIRST AND SECOND YEAR COURSES COMMON TO ENGINEERING CURRICULA

Course	Credits
Chem 111 Principles of Chemistry	4
Chem 114 General Chemistry	4
EE 200 Systems & Circuits I	3
Eng 104 Essay Writing	3
Engr 101 Engineering Graphics	2
Engr 120-121 Engineering Analysis & Design I-II	4
Engr 131 Digital Computer Programming	2
ES 211 Intro to Mechanics	4
Math 180, 190, 200 Analytic Geom & Calculus I, II, III	11
Math 310 Ordinary Differential Equations	3
Phys 221 Engr Physics II—Elec & Magnetism	3
Phys 222 Engr Physics III—Wave Motion	3
Physical education activities	2
Humanities and social sciences electives	9

Major Curricula

The curriculum for each major, beyond the freshman and sophomore courses common to all engineering curricula, is summarized below. Each curriculum contains various 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.

AGRICULTURAL ENGINEERING (B.S.Ag.E.)

First and Second Years	Credits
Courses common to all curricula	57
AgE 242 Agricultural Engineering Analysis	2
ES 221 Dynamics of Rigid Bodies	2
Agriculture or biological science electives	3
Third and Fourth Years	
AgE 351 Hydrology	2
AgE 352 Irrigation Engineering	3
AgE 372 Agricultural Machines	3
AgE 449 Elements of Structural Engineering	4
AgE 454 Drainage System Design	2
AgE 461 Environmental Systems	3
AgE 462 Electric Power and Processing	4
AgE 471 Energy Conversion in Agricultural Systems	2
AgE 491-492 Seminar	0
CE 322 Hydraulics	2
ES 320 Fluid Mechanics	3
ES 321 Thermodynamics and Heat Transfer	3
ES 340 Mechanics of Materials	3
Soils 205, 206 General Soils and Laboratory	4
Agricultural or biological science electives	3
Humanities and social sciences electives	7
Statistics electives	3
Technical electives	9
Undesignated electives	4

CHEMICAL ENGINEERING (B.S.Ch.E.)

First and Second Years	Credits
Courses common to all curricula	57
ChE 200 Sophomore Seminar	0
Third and Fourth Years	
ChE 323 Material & Energy Balances	3
ChE 326 Chem Engr Thermodynamics	3
ChE 330 Stagewise Operations	3
ChE 344 Automatic Process Control	3
ChE 423 Reactor Kinetics & Design	3
ChE 430-431 Transport & Rate Processes I-II	7
ChE 453-454 Chem Process Analysis & Design	6
ChE 491-492 Seminar	0
Chem 277, 372 Organic Chem I-II	6
Chem 305-306 Physical Chemistry	6
Chem 307-308 Physical Chemistry Lab	2
Econ 251 Principles of Economics	3
EE 314 Electronics & Control Systems	4
ES 320 Fluid Mechanics	3
ES 321 Thermodynamics & Heat Transfer	3
Engineering science electives	3
Humanities and social sciences electives	4
Mathematics electives	3
Technical electives	3
Undesignated electives	3

CIVIL ENGINEERING (B.S.C.E.)

Note: A minimum GPA of 2.00 in UI College of Engr upper-div courses is reqd for graduation in this prog.

First and Second Years	Credits
Courses common to all curricula	57
CE 211 Engineering Measurements	4
ES 221 Dynamics of Rigid Bodies	2
Third and Fourth Years	
CE 321 Hydrology	2
CE 322 Hydraulics	2
CE 342 Theory of Structures	4
CE 345 Structural Design	3
CE 357 Mech Properties of Constr Materials	3
CE 372 Transportation Engr	4
CE 431 Sanitary Engineering	4
CE 460 Soil Mechanics	3
CE 486 Engineering Economy	3
CE 491-492 Seminar	0
ES 320 Fluid Mechanics	3
ES 321 Thermodynamics & Heat Transfer	3
ES 340 Mechanics of Materials	3
Eng 317 Tech & Engr Report Writing	3
Approved basic science electives	3
Approved statistics electives	3
Humanities and social sciences electives	7
Technical electives	12

COMPUTER SCIENCE (B.S.C.S.)

Course	Credits
CS 101 Intro to Computer Algorithms	3
EE 200 Systems and Circuits I	3
EE 240 Digital Computer Fundamentals	3
EE 440 Digital Systems Engr	3
EE 441 Computer Organization	3
EE 445 Computer Programming Systems	3
EE 480-481 Principles of Design	6
Eng 103, 104 Basic Skills *and* Essay Writing	6
Engr 131 Digital Computer Programming	2
Math 180, 190, 200 Analytical Geom & Calculus	11
Math 205 Intro to Computer Programming	3

Math 305 Computer Org and Programming 3
Math 407 Discrete Math Structure 3
Math 487 Data Structures 3
Physical education activities 2
Humanities—at least three courses, at least one from each of the following categories: (1) lit, phil, and courses that treat theatre arts or speech as lit; and (2) courses that deal with the hist or appreciation of art, arch, music, speech, or theatre arts 9
Social sciences—at least three courses to be taken in two or more of the following fields: (1) anthro, (2) econ, (3) geog, excluding phys geog and cartography, (4) hist, (5) pol sc, (6) psych, excluding Psych 205 and the more physiologically oriented courses, (7) social sc, (8) sociology, (9) Museo 301, and (10) Sp 141 9
Electives 12
Plus completion of either of the options below:

A. Scientific Option

Course	Credits
Math 310 Ordinary Differential Equations	3
Math 433 Numerical Analysis	3
Math 451 Probability Theory and Math Stats, *or* ES 301 Engr Stats, *or* ApSt 406 Stat Research Methods	3
Science—at least three courses, incl one or more lab courses, to be taken in two or more of the following areas: (1) life sc, (2) phys sc, and (3) approved courses dealing with sc	12
Plus 20 cr from the following:	
EE 201 Transients in Linear Systems	4
EE 203 Systems and Circuits II	4
EE 310 Electronics I	5
EE 411 Pulse and Digital Circuits	3
EE 446 System Modeling and Simulation	3
EE 447 Computer Operating Systems	3
EE 449 Computer I/O Operations	2
Engr 234 Adv Fortran Programming	2
Math 405 Advanced Programming	3
Math 434 Numerical Analysis, *or* ES 402 Applied Numerical Methods	3
Math 440 Linear Algebra	3
Math 452 Probability Theory and Math Stats	3
Math 461-462 Higher Algebra	6
Math 471-472 Advanced Calculus	6
Math 482 Advanced Applied Math	3

B. DATA PROCESSING OPTION

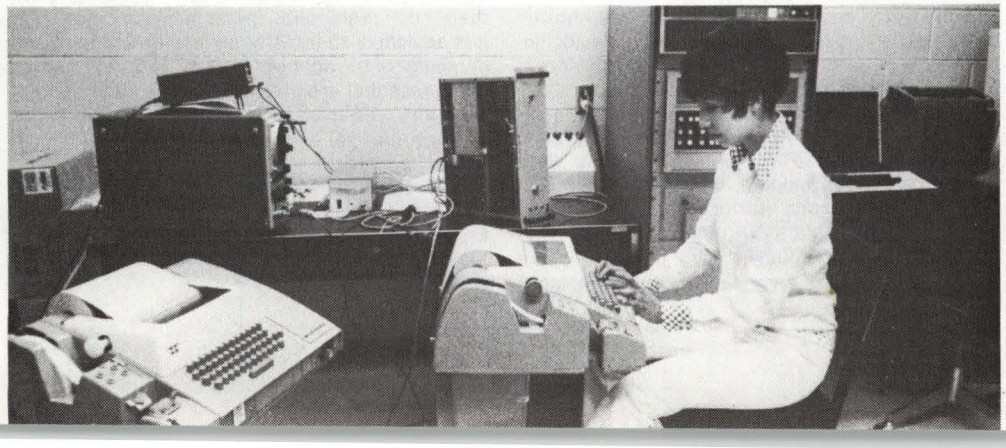
Course	Credits
Life or phys sc electives	4
Acctg 201-202 Prin of Acctg and Managerial Acctg	6
Acctg 385 Costs: Concepts and Methods	3
Bus 231 Statistics	4
Bus 301 Financial Management	3
Bus 311 Intro to Management Theory	3
Bus 333 Intro to COBOL	2
Plus 16 cr from the following:	
Acctg 486 Costs: Analysis and Controls	3
Bus 312 Industrial Management	3
Bus 332 Quantitative Methods in Bus	3
Bus 406 Problems in Financial Mgmt	3
Bus 411 Organization Theory	3
Bus 435 Operations Research I: Linear Prog	2
Bus 439 Systems and Simulation	2
Bus 456 Quality Control	2
Econ 436 Business & Econ Fluctuations	3
EE 447 Computer Operating Systems	3
Engr 234 Adv Fortran Programming	2
Math 405 Advanced Programming	3
Math 433-434 Numerical Analysis	6

ELECTRICAL ENGINEERING (B.S.E.E.)

First and Second Years	Credits
Courses common to all curricula	57
EE 201 Transients in Linear Systems	4
EE 203 Systems & Circuits II	4
EE 292 Sophomore Seminar	0
Third and Fourth Years	
EE 310 Electronics I	5
EE 320 Electrical Machinery	5
EE 330 Electromagnetic Theory	4
EE 410 Electronics II, *or* 420 Direct Energy Conversion, *or* 421 Power System Analysis	3
EE 440 Digital System Engr	3
EE 452 Communication Systems	4
EE 470 Control Systems	4
EE 480-481 Principles of Design	6
EE 491-492 Senior Seminar	0
Phys 360 Intro to Modern Physics	3
Engineering science electives	6
Humanities and social sciences electives	9
Technical electives	6
Undesignated electives	5

MECHANICAL ENGINEERING (B.S.M.E.)

First and Second Years	Credits
Courses common to all curricula	57
ES 211 Dynamics of Rigid Bodies	2
ME 261 Engineering Materials	4
Third and Fourth Years	
Econ 251-252 Principles of Economics	6
EE 203 Systems & Circuits II	4
ES 320 Fluid Mechanics	3
ES 321 Thermodynamics & Heat Transfer	3
ES 340 Mechanics of Materials	3
ME 223 Intro to Mech Design	2
ME 253 Materials Processing	3
ME 300 Junior Seminar	0
ME 320 Fluid Mechanics Lab	1
ME 322 Applied Thermodynamics	3
ME 324 Mechanical Design I	1
ME 390 Mechanical Engr Analysis, *or* ES 402 Applied Numerical Methods	3
ME 425 Mechanical Design II	4
ME 426 Mechanical System Design	4
ME 445 Heat Transfer	4
ME 472 Mechanical Vibrations	4
ME 491 Design Seminar	1
ME 492 Seminar	0
Approved basic science electives	3
Humanities and social sciences electives	1
Technical electives	10



College of Forestry, Wildlife and Range Sciences

John H. Ehrenreich, Dean (202 Forestry, Wildlife and Range Sciences Bldg.); Ernest D. Ables, Associate Dean; Ali A. Moslemi, Associate Dean; Kenneth M. Sowles, Assistant to the Dean; Kjell A. Christophersen, Secretary of the College Faculty.

Professional education leading to a degree in forestry was instituted at the University of Idaho in 1909. To the initial curriculum in forest management have been added those in wood utilization (1914; name changed to forest products in 1976), range (1917), wildlife (1942), fisheries (1951), and 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 resource science and management. Each of the curricula offered by the college, therefore, assures the student on acquaintance with the physical, biological, and social sciences and the humanities. This establishes a broad basis of general education and prepares the student for the scientific-professional courses dealing with the use of forest and range lands and related resources.

Advantages of Location

The university is ideally located for preparing students in the professional fields described below. Forest and range lands comprise 90 percent of the state's area. Forested areas extend from the ponderosa pine type in southern Idaho to the mixed coniferous and famous white pine types 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. Also within the forest and range lands are found hundreds of lakes and streams and extensive wilderness areas, all of which provide habitat for fish and wildlife.

The values derived from these resources include wood products of all types; cattle and sheep in great numbers; abundant wildlife of many species; game fishes of world renown; water for domestic use, power, and irrigation; and extensive recreational areas. These natural study areas and resources are available to the student in preparing for his or her profession.

Facilities

The college moved into a new $3,500,000 building in 1971. The Forestry, Wildlife and Range Sciences Building brings together the faculty, classrooms, laboratories, scientific equipment, and plant and animal collections necessary for the highest quality instruction.

A tract of some 7,200 acres of forest land located about 25 miles from the campus is used as a demonstration and experimental area. It includes a 200-acre, developed recreation area and adjoins a 33-acre, privately-owned nature preserve managed by the Wildland Recreation Management Program. A foresty nursery of 40 acres is maintained for the production of planting stock and for student training purposes. Shattuck Arboretum, with over 60 species of trees, is maintained on campus for studies in dendrology and silviculture. A permanent summer camp is located on the shore of Payette Lake in the mountains of west-central Idaho, and a wilderness field research station is located in the heart of the Idaho primitive area. Furthermore, the forest and range lands constitute a vast natural laboratory for students in all of the college's curricula.

Standing of the College

In order to promote high professional standards in forestry education, the Society of American Foresters periodically evaluates all forestry schools and rates them as accredited or not accredited. Forestry education at the University of Idaho has always received accredited status. This accreditation assures the student that high quality education is provided in all divisions of the university.

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 the University of Idaho, should follow as closely as possible one of the programs for the first two years set forth in the pages immediately following. A student whose program does not closely approximate one of these will not be able to graduate in a total of four years. Transfer to the university before the end of the sophomore year is usually to the student's advantage. Correspondence with the dean of the college should be initiated not later than April 1 of the year in which the student wishes to transfer.

Total time to graduation will also be extended if summer camp, in those curricula that require it, is not completed at the end of the sophomore year. Students planning to elect one of these curricula may report directly to summer camp for their initial registration in the university; however, it is advisable to transfer no later than the spring semester of the sophomore year in order to enroll in courses that are prerequisite to summer camp. Students who transfer directly to summer camp must complete a minimum of one additional semester in residence at the University of Idaho before credit in summer camp courses will be validated for transfer to another institution. Enrollment in summer camp may be limited to the capacity of the camp facilities and equipment available.

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 resource management while providing specialization in the student's major area of interest.

The schedule of studies in each subject-matter area offers as many courses in common with those in other areas 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.

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 the conduct of a research project and the preparation of a thesis or dissertation, are available. A nonthesis master's degree, intended primarily for candidates with professional experience, may also be obtained.

Excellent facilities and opportunities are afforded for graduate study and research in the subject-matter areas. Research in the college is organized through the Forest, Wildlife and Range Experiment Station. Research is also supported by the Cooperative Wildlife Research Unit, the Cooperative Fishery Unit, the Intermountain Forest and Range Experiment Station, and the Wilderness Research Center.

Assistantships and fellowships are available to assist highly qualified students in their graduate programs. Funding is obtained from a variety of state, federal, and private agencies.

More complete information on graduate studies may be obtained by writing the dean of the Graduate School and requesting a copy of the graduate catalog.

Requirements for Graduation

University Requirements. See regulation J in part 3 for general university requirements for degrees.

College Requirements. A total of 136 semester credits is required for the baccalaureate degree. A minimum cumulative grade point average of 2.00 in all courses taken in this college is required for graduation. Students in the science option of forest resources must maintain an overall grade point average of 2.5 or higher. Admission to the forest resources science option is by petition upon completion of at least 16 semester hours of college work. Courses in the college that are numbered above 299 are not open to any student who is on academic probation. Specific course requirements are set forth below for each curriculum.

Students who are admitted without the required unit of high school physics (see the admission requirements listed in part 2) must take either Physics 113 or 114, regardless of whether or not physics is listed as a requirement in the chosen curriculum. Courses taken to make up high school deficiencies will not count toward the 136 semester hours required for the Bachelor of Science degree.

The college may grant substitutions and waivers of the requirements specified below. 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.

All electives are subject to the approval of the faculty adviser and the dean. Of the indicated electives, at least 12 credits are to be chosen from approved social science or humanities courses.

All students are required to attend a library orientation session during the first semester on campus.

Summer Camp or Summer Employment Requirements. Students who elect the forest resources, range resources, or wildland recreation curricula are required to complete the eight-credit course program offered at summer camp. They must complete this requirement before beginning the technical-professional course work of their upper-division programs.

Students who elect the fishery, forest products, or wildlife curricula must complete at least one summer of experience in employment deemed by the faculty to be appropriate to their respective professional career objectives.

FIRST AND SECOND YEAR COURSES
COMMON TO ALL CURRICULA

Course	Credits
Biol 201 Intro to Life Sciences	4
Biol 203 General Botany	4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
FWR 101 Forestry Orientation	1
Math 180 Analytic Geom & Calculus I	4
Physical education activities	2

Major Curricula

FISHERY RESOURCES (B.S.Fish.Res.)

First and Second Years	Credits
Courses common to all curricula	21
Biol 202 General Zoology	4
Biol 331 General Ecology	3
Chem 103 *or* 111 Intro to Chem *or* Prin of Chem	4
Chem 275 Carbon Compounds	3
Econ 272 Foundations of Econ Analysis	4
Engr 131 Digital Computer Programming	2
FWR 294 Models for Resource Decisions I	3
Geol 101-102 Physical Geol & Lab	4
Phys 113-114 General Physics	6
Sp 131 Fundamentals of Speech	2
Electives	15
Third and Fourth Years	
Bact 250 General Bacteriology	4
Engr 137 Tech & Engr Report Writing	3
Ent ID472 Aquatic Entomology	1
Ent ID474 Aquatic Entomology Lab	2
FWR 307 Biometry	3
FWR 351 Elements of Range Mgmt, *or* 370 Prin of Forest Mgmt, *or* 462 Watershed Mgmt	2-3
FWR 383 Econ of Conservation	3
FWR 411 Ichthyology	4
FWR ID413 Fish Ecology	2
FWR 415 Limnology	3
FWR 416 Limnology Lab	1
FWR 417 Fish Culture & Diseases	4
FWR 418 Fishery Mgmt	4
FWR 419 Warm Water Fish Ecology	2
FWR 448 Fish & Wildlife Population Ecology	3
FWR 494 Models for Resource Decisions II	3
FWR 495 Fish & Wildlife Seminar	3
Genet 314 General Genetics	3
Zool 416 Mammalian Physiology *or* VS 371 Anatomy & Physiology	4
Electives to total 136 cr	—

FOREST PRODUCTS (B.S.For.Prod.)

A. FOREST BUSINESS MANAGEMENT OPTION

First and Second Years	Credits
Courses common to all curricula	21
Acctg 201 Principles of Accounting	3
Acctg 202 Managerial Accounting	3
Bot 241 Systematic Botany	3
Chem 103 Intro to Chemistry	3
CE 218 Elem Surveying and Photogrammetry	2
Econ 251-252 Principles of Economics	6
Engr 131 Digital Computer Programming	2
FWR 221 Silvics	3
FWR 275 Aerial Photo Interp of Renew Nat Res	2
FWR 294 Models for Resource Decisions I	3
Communication electives	2
Electives	12
Third and Fourth Years	
Bus 265 Legal Environment of Business	3
Bus 311 Intro to Management Theory	3
Bus 312 Industrial Management	3
Bus 321 Marketing	3
Bus 413 Human Relations in Business	3
Eng 317 Tech & Engr Report Writing	3
FWR 307 Biometry	3
FWR 331 Intro to Wood Technology	3
FWR 374 Mensuration	3
FWR 383 Economics of Conservation	3
FWR 434 Forest Engineering and Harvesting	3
FWR 494 Models for Resource Decisions II	3

Plus **either** FWR 300, 301, 324, 476, 484, Geol 101-102, and 13 elective credits; or Chem 275, FWR 370, 436, 437, 438, 464, 496, Phys 113-114, 11 elective credits, and the equivalent of one summer of work experience and a report covering that experience.

B. SCIENCE-ENGINEERING OPTION

First and Second Years	Credits
Courses common to all curricula	21
Chem 111 Principles of Chemistry	4
Chem 114 General Chemistry	4
Chem 277, 278 Organic Chem I & Lab	4
Econ 251-252 Principles of Economics	6
FWR 221 Forest Ecology	3
FWR 294 Models for Resource Decisions I	3
Math 190 Analyt Geom & Calculus I	4
Phys 220-221 Engr Physics I-II	6
Communications electives	2
Computer electives	2
Electives	9
Third and Fourth Years	
Chem 372 Organic Chemistry II	3
ES 211 Intro to Mechanics	4
ES 340 Mechanics of Materials	3
Eng 317 Tech & Engr Report Writing	3
FWR 307 Biometry	3
FWR 331 Intro to Wood Technology	3
FWR 370 Prin of Forest Management	2
FWR 374 Mensuration	3
FWR 383 Economics of Conservation	3
FWR 434 Forest Engr & Harvesting	3
FWR 436 Biol Properties of Wood	3
FWR 437 Physical Properties of Wood	3
FWR 438 Chemical Properties of Wood	3
FWR 464 Forest Pathology	3
FWR 494 Models for Resource Decisions II	3
FWR 496 Forest Products Seminar	1
Electives to total 136 cr	—

FOREST RESOURCES (B.S.For.Res.)

A. MANAGEMENT OPTION

First and Second Years	Credits
Courses common to all curricula	21
Bot 241 Systematic Botany	3
Chem 103 *or* 111 Intro to Chem *or* Prin of Chem	4
CE 218 Elementary Survey & Photogrammetry	2
Engr 131 Digital Computer Programming	2
FWR 221 Forest Ecology	3
FWR 275 Aerial Photo Interp of Renew Nat Res	2
FWR 294 Models for Resource Decisions I	3
Geol 101, 102 Physical Geology & Lab	4
Sp 131 Fundamentals of Speech	2
Introductory economics	4
Electives	12
Forestry Summer Camp	
FWR 300 Forest Resource Measure	4
FWR 301 Wildland Ecology	4
Third and Fourth Years	
Engr 317 Tech & Engr Report Writing	3
FWR 307 Biometry	3
FWR 320 Dendrology	3
FWR 324 Silviculture	3
FWR 331 Intro to Wood Technology	3
FWR 351 Elements of Range Management	3
FWR 365 Fundamentals of Forest Protection	2
FWR 367 Fire Control *or* 464 Forest Pathology *or* 467 Forest Entomology	2-3
FWR 374 Mensuration	3
FWR 383 Economics of Conservation	3
FWR 390 Principles of Fish & Wildlife Ecology	3
FWR 434 Forest Engineering & Harvesting	3
FWR 462 Watershed Management	2
FWR 470 Intro to Forest Land Resources Planning	2
FWR 476 Forest Regulation & Finance	3
FWR 484 Forest Policy & Administration	3
FWR 494 Models for Resource Decisions II	3
Soils 205 General Soils	3
Electives to total 136 cr	—

B. SCIENCE OPTION

First and Second Years	Credits
Courses common to all curricula	21
Biol 202 General Zoology	4

Bot 241 Systematic Botany 3
Chem 111 Principles of Chemistry 4
Chem 112 Inorganic Chem & Qual Analysis 5
Econ 251-252 Principles of Economics 6
FWR 221 Forest Resources 3
FWR 294 Models for Resource Decisions I 3
Communications electives 2
Computer electives 2
Geog *or* geol (physical) *or* organic chem 4
Electives 7

Forestry Summer Camp
FWR 300 Forest Resource Measure 4
FWR 301 Wildland Ecology 4

Third and Fourth Years
FWR 307 Biometry 3
Natural sciences 17
Professional courses 15
Quantitative sciences 7
Electives to total 136 cr ..... —

RANGE RESOURCES (B.S.Range Res.)

First and Second Years	**Credits**
Courses common to all curricula	21
Biol 331 General Ecology	3
Bot 241 Systematic Botany	3
Chem 103 Intro to Chemistry	4
Chem 275 Carbon Compounds	3
CE 218 Elem Surveying & Photogrammetry	3
Econ 251 Principles of Economics	3
Econ 252 Prin of Econ, *or* AgEc 208 Prin of Farm & Range Mgmt, *or* AgEc 391 Ag Business Mgmt	3
FWR 294 Models for Resource Decisions I	3
Geol 101, 102 Physical Geol & Lab	4
Soils 205 General Soils	3
Communications electives	2
Computer electives	2
Electives	7

Forestry Summer Camp
FWR 300 Forest Resource Measure 4
FWR 301 Wildland Ecology 4

Third and Fourth Years
AnSc 305 Animal Nutrition 3
AnSc 321 *or* ID322 Beef *or* Sheep Science 3
Bot 311 Plant Physiology 3
Bot 432 Plant Ecology 3
FWR 307 Biometry 3
FWR 351 Elem of Range Management 3
FWR 370 Prin of Forest Management 2
FWR 383 Econ of Conservation, *or* AgEc 451 Land Resource Econ 3
FWR 390 Prin Fish & Wildlife Ecology 3
FWR 452 Range Communities 3
FWR 453 Range Methods & Techniques 3
FWR 454 Range Improvement & Mgmt Planning 3
FWR 455-456 Integrated Range Resource Mgmt 8
FWR 494 Models for Resource Decisions II 3
Soils 454 Soil Development & Classification 3
Electives to total 136 cr ..... —

WILDLAND RECREATION MANAGEMENT (B.S.Wildland Rec.Mgmt.)

First and Second Years	**Credits**
Courses common to all curricula	21
Bot 241 Systematic Botany	3
Chem 103 Intro to Chemistry	4
CE 218 Elem Surveying & Photogrammetry	3
Econ 272 Foundations of Econ Analysis	4
FWR 221 Forest Ecology	3
FWR 287 Prin of Wildland Recreation Mgmt	2
FWR 288 Law Enforcement in Wildland Rec Mgmt	3
FWR 294 Models for Resource Decisions I	3
Geol 101, 102 Physical Geol & Lab	4
Soc 110 Intro to Soc *or* Psych 100 Intro to Psych	3
Sp 131 Fundamentals of Speech	2
Computer electives	2
Electives	8

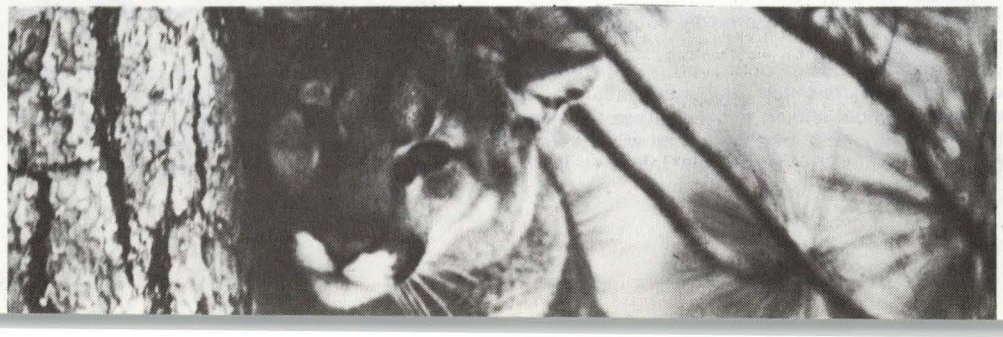
Forestry Summer Camp
FWR 300 Forest Resource Measure 1
FWR 301 Wildland Ecology 4
FWR 301 Wildland Recreation Field Studies 3

Third and Fourth Years
Eng 317 Tech & Engr Report Writing 3
FWR 307 Biometry 3
FWR 383 Economics of Conservation 3
FWR 384 Recreation Operations & Facilities 2
FWR 385 Wildland Recreation Management 3
FWR 386 Wildland Recreation Planning 3
FWR 387 Environmental Interpretive Meth 3
FWR 390 Prin of Fish & Wildlife Ecology 3
FWR 484 Forest Policy & Admin 3
FWR 489 Personalities & Philosophies in Conservation 2
FWR 494 Models for Resource Decisions II 3
Soc 313 Collective Behavior, *or* Psych 310 Social Psychology 3
Sp 362 Communication & the Small Group 3
Approved electives from one of the following areas:
rec interp-communication; rec mgmt-admin; *or*
rec resources planning-design 12
Electives to total 136 cr ..... —

WILDLIFE RESOURCES (B.S.Wildl.Res.)

First and Second Years	**Credits**
Courses common to all curricula	21
Biol 202 General Zoology	4
Biol 331 General Ecology	3
Bot 241 Systematic Botany	3
Chem 103 Intro to Chemistry	4
Chem 275 Carbon Compounds	3
Econ 251-252 Prin of Econ, *or* 272 Foundations of Econ Analysis	4-6
FWR 294 Models for Resource Decisions I	3
Geog 100, 101 Man's Physical Environment & Lab, *or* Geol 101, 102, Physical Geol & Lab	4
Phys 113-114 General Physics	6
Sp 131 Fundamentals of Speech	2
Communications electives	2
Computer electives	2
Electives	7

Third and Fourth Years
Biol 351 General Genetics 3
FWR 307 Biometry 3
FWR 314 Wildlife Ecology 3
FWR 351 Elem of Range Management 3
FWR 370 Prin of Forest Management 2
FWR 383 Econ of Conservation 3
FWR 411 Ichthyology 3
FWR 415 Limnology 3
FWR 442 Wildlife Management 3
FWR 448 Fish & Wildlife Population Ecology 3
FWR 494 Models for Resource Decisions II 3
FWR 495 Fish & Wildlife Seminar 1
Zool 416 Mammalian Physiology 4
Zool 482 Natural History of Birds 3
Zool 483 Natural History of Mammals 3
Electives to total 136 cr ..... —



College of Law

Albert R. Menard, Dean (101 Law Bldg.); Sheldon A. Vincenti, Associate Dean.

The College of Law was established as a college of the University of Idaho in 1909. It 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 seminar 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 scientific habits of thought.

Admission to the Bar

A degree from the University of Idaho College of Law satisfies the legal educational prerequisite for the taking of any bar examination in the United States. However, prelegal requirements may vary slightly, 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.

Prelegal Work

The subject matter of prelegal education is in general less important than the quality of work done and the caliber of the professors under whom the work is taken. Students preparing to enter law school should avoid courses that are not demanding and take those that will develop their powers of analytical thought. Intensive work will enable them to acquire the intellectual discipline and experience necessary for success in law school. Students should aspire to a critical appreciation of values and of political, economic, and social institutions: they should stress understanding, not just knowledge, in their studies. Words are the tools of the lawyer, and a major undergraduate objective in the selection both of courses and of activities outside the classroom should be development of the ability to communicate orally and in writing.

Usually an undergraduate major in one of the social sciences or in business administration is best, but students with other backgrounds ranging from agriculture to engineering or physics are accepted. While a study of accounting is not a prerequisite for admission to the College of Law, it is highly recommended that prelaw students gain some understanding of the fundamentals of this area. As a rule, the introductory course on a college level is sufficient. Another useful skill is the ability to operate a typewriter with reasonable speed and accuracy.

Within the particular college or university, prelaw advisers are generally available to guide students in selecting courses that will meet these objectives. The faculty of the College of Law is also available to assist in program planning.

Requirements for Admission

Applicants for admission must have a bachelor's degree from an accredited four-year college or university. Their cumulative grade point average must place them in the upper one-half of the college class and they should present a Law School Admission Test score that is well above the national median. Exceptions will be made to the requirement of a bachelor's degree in rare instances and admission extended to carefully selected students who are enrolled in "combined degree programs" (see below).

The Law School Admission Test is required of all applicants. This test is given by the Educational Testing Service throughout the United States in October, December, February, April, and July. The exact dates, places, and cost of the test, application blanks, and a bulletin of information about the test may be obtained by writing directly to Law School Admission Test, Educational Testing Service, Box 944, Princeton, New Jersey 08540, or to the College of Law, University of Idaho. Applicants cannot be assured of consideration unless they take the test no later than the December administration preceding the fall semester in which they desire admission.

Registration with the Law School Data Assembly Service of the Educational Testing Service is required of all applicants. Instructions concerning registration and an application blank for the purpose are contained in the same

bulletin that describes the Law School Admission Test or may be secured separately from the College of Law or the Educational Testing Service.

Procedure for Admission. All applicants must: (1) secure from the dean of the College of Law a personnel form and an application form, complete them and return them to the College of Law together with a check for the mandatory $10 application fee; (2) take the Law School Admission Test and have sent to the College of Law a score report; and (3) register with the Law School Data Assembly Service of the Educational Testing Service, directing that the file and analysis which that agency prepares be forwarded to the College of Law. Transcripts required by the instructions on the registration blank of the Law School Data Assembly Service should be forwarded to that service promptly.

A decision concerning admissibility will be made after receipt by the College of Law of the personnel and application blanks, the evaluation fee, the LSAT score from the Educational Testing Service, and the file, with analysis, from the Law School Data Assembly Service. Further instructions on the remaining steps that must be taken to convert this decision, if favorable, into an admission will be given with the letter transmitting the decision. Applications should be initiated no later than early December before the fall term in which the student intends to register, and all information necessary to the admission decision must be on file at the College of Law by March 15 of the year in which admission is desired.

Admission to Advanced Standing

Students who have previously studied law in a law school that is either a member of the Association of American Law Schools or is approved by the American Bar Association may be admitted only if they are in complete good standing and eligible to continue in the school in which previously registered and if, in the opinion of the Committee on Admissions, academic performance at that institution warrants such action. Usually the committee requires substantially above a 2.50 grade point average on all law courses undertaken. There must also be space available to accommodate the student. When space is available, priority is accorded transfer applicants who are residents of Idaho. If entrance by transfer is granted, the number of credits to be recognized from the previous institution is determined by the dean of the College of Law in each case. The last 26 semester credits of law must be completed in residence at the University of Idaho.

Nondegree Candidates

Students who are not admitted as candidates for the Juris Doctor degree are not accepted by the College of Law.

Combined Degree Programs

As has already been stated, applicants for admission to the College of Law must have a bachelor's degree from an accredited four-year college or university. Exceptions to this requirement may be made in very rare instances and admission extended to one or two carefully selected students who demonstrate unusual capacity for legal study on the basis of their college record (above 3.50) and LSAT score (above 650) and who are enrolled in a "combined degree program" which will award the student a bachelor's degree upon the successful completion of the first year of law study. The combined degree program must include 98 semester credits of undergraduate work before any work in a college or school of law may be undertaken. Such a program is offered at the University of Idaho through the Department of Political Science and Public Affairs Research in the College of Letters and Science. A student at the University of Idaho who is interested in a combined degree program should seek an adviser through that department. Combined programs also exist at certain other institutions that agree to grant the necessary bachelor's degree after one year of law study. It is not wise, however, to make long-range plans relying on admission to the College of Law as a combined degree student, because only one or two individuals each year are able to meet the standards for this category of admission. A combined-degree program is not recommended; it is successfully pursued infrequently.

Fees

Students in the College of Law pay $100 per semester in addition to the fees paid by students in other divisions of the university. ((See "Fees and Expenses" in part 2 of this catalog.)

Grading System

1. 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 the basis of P or F.

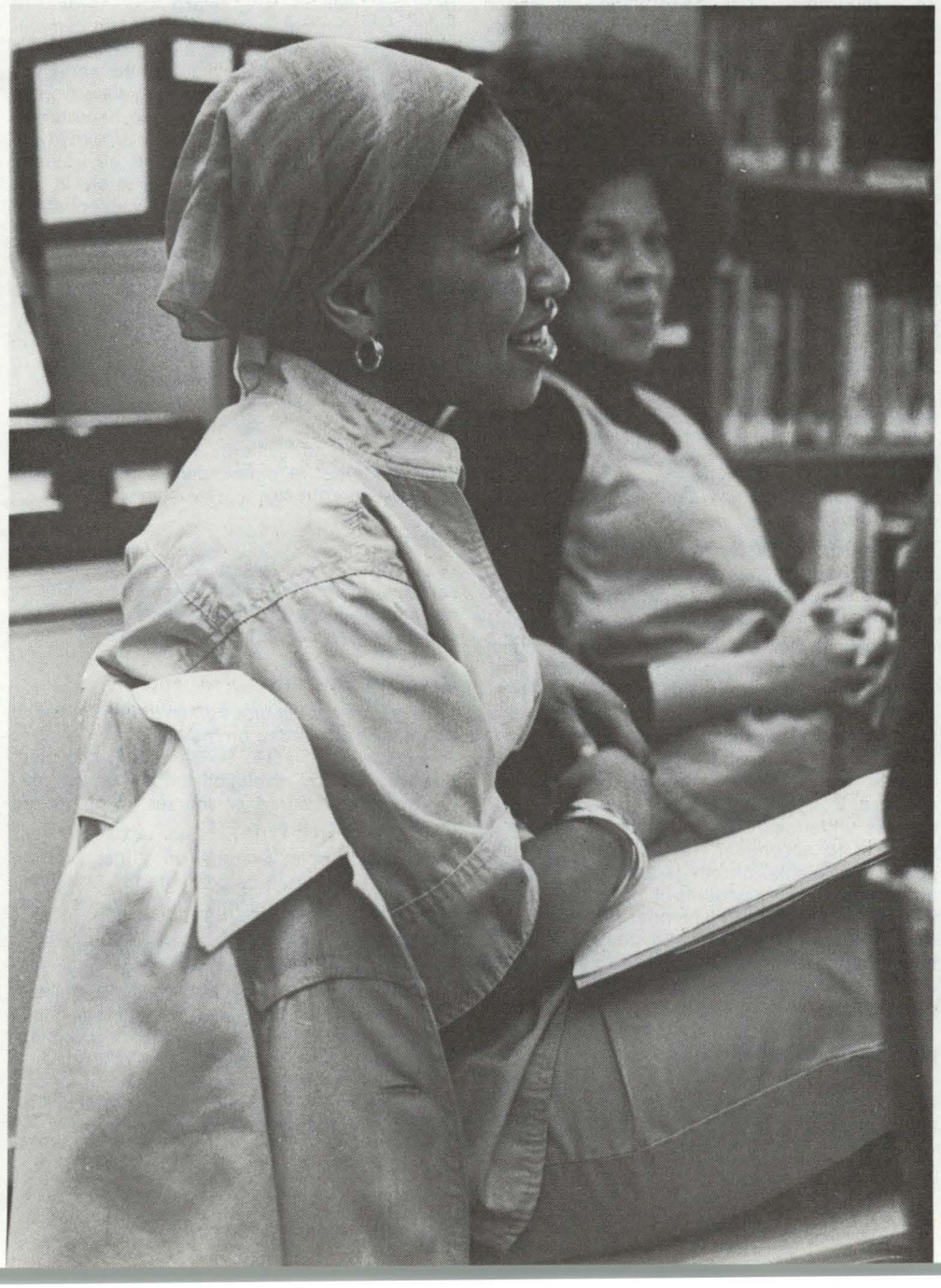
2. Grade point averages of students in the College of Law shall be computed by assigning the following numerical point values per semester hour: A = 4.00; A- = 3.67; B+ = 3.33; B = 3.00; B- = 2.67; C+ = 2.33; C = 2.00; C- = 1.67; D+ = 1.33; D = 1.00; D- = 0.67; F (or "fail" under the pass-fail basis) = 0.00. The cumulative grade point average is the quotient of total points assigned, divided by total hours undertaken, except that courses in which marks of I, W, or P (pass) have been given shall be disregarded in the computation. All other courses shall be included even if they have been repeated.

3. The grading system described above became effective in 1971. It applies in determining: (1) elegibility 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. It is also used on any grade reports issued by the College of Law. Plus or minus grades do not appear on transcripts issued by the registrar.

4. 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.

Additional Information

For more detailed information about the College of Law, including descriptions of the honor system, academic requirements, requirements for graduation, and curriculum, see the annual announcement of the College of Law.



College of Letters and Science

Elmer K. Raunio, Dean (112 Admin. Bldg.); John L. McMullen, Associate Dean; Elizabeth E. Stevenson, Associate Dean; Earl J. Larrison, Secretary of the College Faculty.

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 Art and Architecture, Biological Sciences, Chemistry, English, Foreign Languages and Literatures, History, Mathematics, Philosophy, Physics, Political Science and Public Affairs Research, Psychology, Sociology/Anthropology, and Theatre Arts. The School of Communication (journalism, photography and film, radio/television, and speech), the School of Home Economics, and the School of Music also function as departments of the college. Cooperating departments from other divisions include the Departments of Bacteriology and Biochemistry, Economics, Geography, and Naval Science, as well as the College of Law. The departments and schools in L & S offer nearly one hundred curricula and curricular options leading to baccalaureate degrees, as well as graduate study leading to master's and doctor's degrees.

Undergraduate. See "Major Curricula" below.

Graduate. The Graduate School offers work toward advanced degrees in many disciplines of the college. Currently work leading to a master's degree is available in the fields of anthropology, architecture, art, biological sciences, biology, botany, chemistry, English, French, German, history, home economics, interior design, mathematics, music, philosophy, physical sciences, physics, political science, psychology, social sciences, sociology, Spanish, 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. An interinstitutional doctoral program with a major in home economics (family and child development) is being developed.

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 under "Major Curricula" below.

Preparatory Programs in Medicine and Dentistry. Premedical and predental programs are offered in the college and are administered by the Pre-Medical and Pre-Dental Studies Committee. For baccalaureate programs in these fields, see "Major Curricula" below.

Environmental Sciences. The university does not offer a separate degree program in environmental sciences; however, students who wish to prepare for careers in this field should consult the L & S dean's office about the possibility of developing an appropriate plan of studies under the program in interdisciplinary studies.

Museology. The college offers juniors and above an opportunity to become acquainted with museums and museum work. Courses in museology serve as museum appreciation courses for the general student regardless of his or her major and as an introduction to museum work for the student who plans to enter this field professionally (see the major in museology under "Major Curricula" below).

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 predental studies, and the one- and two-year programs 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 Teacher Education Program in this part 4.

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 in English composition and physical education (see regulation J 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 below. The requirements for the various professional degrees (i.e., B.Arch., B.F.A., B.Mus., B.N.S., B.Phys., B.S.H.Ec., B.S.Pre-Dent., B.S.Pre-Med., and B.Tech.) are listed under "Major Curricula" below. The college B.A. and B.S. requirements do not apply to these professional degrees.

College Requirements for the B.A. and B.S. Degree

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 (12 credits minimum). At least four courses, including two from each of the following categories: (1) literature, philosophy, and courses that treat theatre arts or speech as literature; and (2) courses that deal with the history or appreciation of art, architecture, music, speech, or theatre arts.

Science (9 credits minimum). At least three courses (including one or more laboratory courses) to be taken in two or more of the following areas, one of which is to be in either of the first two categories: (1) life sciences, (2) physical sciences, (3) mathematics, and (4) approved courses dealing with science.

Social Sciences (9 credits minimum). At least three courses to be taken in two or more of the following fields: (1) anthropology, (2) economics, (3) geography, excluding physical geography and cartography, (4) history, (5) political science, (6) psychology, excluding Psych 205 and the more physiologically oriented courses, (7) social science, (8) sociology, (9) Museo ID301, (10) Museo ID 400, and (2) Sp 141 and 180.

Foreign Language (0 to 16 credits). The basic requirement is proficiency in 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) sixteen credits or four high-school units in one foreign language, or (b) twelve credits in one foreign language, plus one three-credit course in literature translated from the same language. The twelve credits may be satisfied by three high-school units in one foreign language.

Requirements for the B.S. Degree.

Humanities (9 credits minimum). At least three courses, including one course in literature, philosophy, or courses that treat theatre arts or speech as literature, plus one course that deals with the history or appreciation of art, architecture, music, speech, or theatre arts.

Science (same as the science requirement for the B.A. degree).

Social Sciences (same as the social science requirement for the B.A. degree).

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 fullfillment 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.

Honors

Honors are awarded at graduation from L & S on the basis of each student's entire academic record, but are granted only to those who have completed at least the last 64 credits in residence (see regulation J-2-a in part 3). The minimum grade point average (GPA) required for graduation with honors in a given year is 3.50 *or* the minimum GPA of the upper 10 percent of the students who graduated from L & S during the previous *calendar* year, whichever is higher. Similarly, students whose GPA is at least 3.90 *or* as high as or higher than the minimum GPA of the upper 3 percent of the students who graduated from L & S during the previous calendar year will be graduated *summa cum laude.* All

other students eligible for honors will be graduated *cum laude.*

In accordance with the above standards, the minimum GPAs for students graduating with honors during the 1978 calendar year are 3.65 for graduation *cum laude* and 3.90 for graduation *summa cum laude.* These averages will be recalculated for students graduating during the 1979 calendar year.

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 upon 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 (arranged in alphabetical order in this section).

AMERICAN STUDIES (B.A.)

General requirements for the B.A. degree, plus:

1. Nine cr in courses offered specifically for students in the American Studies program (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

Course	Credits
Eng 277-278 Survey of American Literature	6
Two courses in English literature	6
Five courses (selected from the following list)	15
Eng 327 Black Literature	
Eng 330 American Indian Literature	
Eng 427 American Fiction in the 20th Century	
Eng 439 Modern English & American Drama	
Eng 441 Intro to the Study of Language	
Eng 470 American Literature to 1830	
Eng 471 Poe, Hawthorne, and Melville	
Eng 472 Emerson, Thoreau, and Whitman	
Eng 473 Literature of the American West	
Eng 474 Growth of American Realism, 1865-1914	
Eng 476 American Folklore	
Courses in history and social science, incl at least 6 cr in each (selected from courses listed under the social sc emphasis and the following hist courses)	18
Hist 417-418 Twentieth-Century America	
Hist 432 The Negro in American History	
Hist 433-434 Social & Cultural History of the US	

B. History Emphasis

Course	Credits
Hist 101-102 History of Civilization	6
Hist 111-112 Intro to US history	6
Five courses (selected from the following list)	15
Hist 411-412 Amer Colonial & Revolutionary Hist to 1789	
Hist 413 US: Early National Period	
Hist 414 US: Sectionalism & Civil War	
Hist 415 US: Emergence of Industrial America	
Hist 417-418 Twentieth-Century America	
Hist 423 Idaho & the Pacific Northwest	
Hist 427-428 History of the Westward Movement	
Hist 429-430 History of American Diplomacy	
Hist 432 The Negro in American History	
Hist 433-434 Social & Cultural History of the US	
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
Eng 277-278 Survey of American Literature	
Eng 327 Black Literature	
Eng 330 American Indian Literature	
Eng 427 American Fiction in the 20th Century	
Eng 470 American Literature to 1830	
Eng 471 Poe, Hawthorne, and Melville	
Eng 472 Emerson, Thoreau, and Whitman	
Eng 473 Literature of the American West	
Eng 474 Growth of American Realism, 1865-1914	
Eng 476 American Folklore	

C. Social Science Emphasis

Course	Credits
Anthr 225 Aboriginal North American Indian, *or* 325 Indians of Idaho	3
Econ 251-252 Prin of Econ, *or* 272 Foundations of Econ Analysis *and* 435 Amer Econ Dev	6-7
Geog 220 Environment & Population of the US	3-4
Phil 425 American Philosophy	3
PolSc 428 American Political Thought	3
Psych 205 Developmental Psychology	3
RelSt 322 Religious Institutions	2
Soc 230 Social Problems	3
Soc 322 Racial & Ethnic Relations	3
One of the following courses: Anthro 402, Hist 496, PolSc 435, or Soc 410	3
Courses (selected from the following list)	9
Anthr 120 Intro to Social Anthropology	
Anthr 223 Western Ranching Culture	
Arch 483 Intro to City Planning	
Arch 484 City Planning	
Comm 120 Mass Communications in a Free Society	
Comm 455 History of Mass Communication	
Comm 492 Mass Communication & Public Opinion	
Econ 410 State & Local Government Finance	
Econ 441 Labor Economics	
Geog 165 Human Geography	
Geog 362 US & Canada	
Geog 430 Urban Geography	
MusH 340 American Music	
Phil 411 Social Philosophy	
PolSc 275 American State Government	
PolSc 276 American Local Government	
PolSc 431 Political Parties	
PolSc 432 The Legislative Process	
PolSc 433 Public Opinion & Electoral Behavior	
PolSc 438 Conduct of American Foreign Policy	
PolSc 467 Constitutional Law	
RelSt 282 The New Morality	
RelSt 323 Religion & Society	
SocSc 103 Intro to Black Culture	
Soc 310 Rural Sociology	
Soc 311 Urban Sociology	
Soc 313 Collective Behavior	
Soc 320 Marriage & the Family	
Sp 191 Communication of the Feminist Movement	
Four courses in literature and history, incl at least 3 cr in each (selected from the following list)	12
Eng 277-278 Survey of American Literature	
Eng 327 Black Literature	
Eng 330 American Indian Literature	
Eng 427 American Fiction in the 20th Century	
Eng 470 American Literature to 1830	
Eng 471 Poe, Hawthorne, and Melville	
Eng 472 Emerson, Thoreau, and Whitman	
Eng 473 Literature of the American West	
Eng 474 Growth of American Realism, 1865-1914	
Eng 476 American Folklore	
Hist 417-418 Twentieth-Century America	
Hist 432 The Negro in American History	
Hist 433-434 Social & Cultural History of the US	

ANTHROPOLOGY (B.A. or B.S.)

General requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Anthr 110 Intro to Physical Anthr & Archaeology	3
Anthr 120 Intro to Social Anthropology	3
Anthr 402 History of Anthropological Theory	3
Eng 441 Intro to Study of Language	3
Psych 217 Intro to Stats for Behavioral Sc, or equiv	3
Soc 110 Intro to Sociology	3

(Continued)

Soc 413 *or* 414 Early *or* Modern Social Theory	3
Anthropology electives (upper-division)	15
Related fields, incl at least 3 courses selected from the following	15
Econ 490 Comparative Economic Systems	
Geog 140 Economic Geography	
Geog 165 Human Geography	
Hist 433-434 Social & Cultural History of the US	
Museo ID301 Intro to Museology	
Phil 411 Social Philosophy	
Psych 320 Intro to Social Psychology	
Psych 461 Psychology of Personality	
Soc 320 Marriage & the Family	
Soc 321 The Community	
Soc 420 Social Stratification	
Soc 421 Population & Human Ecology	

ARCHITECTURE (B.Arch.)

A five-year professional curriculum divided into two parts: preprofessional (first two years) and professional (remaining three years). Due to a limited enrollment capacity, admission to the prog is highly competitive; prospective students should write to the dept head early to learn admission procedures. A cumulative GPA of 2.50 in all reqd courses in the two preprofessional years and the approval of a faculty review committee are reqd for admission to the professional prog. Grades are subject to faculty review and any probation, if granted, shall be at the discretion of the faculty. The 2.50 average must be maintained in all reqd courses in order to remain in good standing in the dept. The program is accredited by the National Architectural Accrediting Board (NAAB).

Course	Credits
Arch 155-156 Design & the Creative Process	4
Arch 253 Basic Design Review (req of transfers only)	(2)
Arch 255 Graphic Communication	2
Arch 256 Basic Architectural Design	2
Arch 266 Materials & Methods	3
Arch 353-354 Architectural Design I	10
Arch 365-366 Building Technology I	6
Arch 383 Environmental Analysis	2
Arch 385-386 History of Architecture	6
Arch 453-454 Architectural Design II	10
Arch 455-456 Architectural Design III	10
Arch 463-464 Environmental Control System	6
Arch 465-466 Building Technology II	6
Arch 473 Architectural Programming	2
Arch 475-476 Professional Practice I-II	6
Arch 483 Intro to City Planning	3
Art 111-112 Drawing I	4
Art 121-122 The Creative Process & Design	4
CE 112 Elementary Surveying	2
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
LArch 259 Landscape Architecture I	3
Math 140 College Algebra	3
Math 179 Analytic Trigonometry	1
Math 180 Analytic Geometry & Calculus I (or one of the following options)	2-5
ApSt 307 Prin of Statistics	
Bus 231 Statistics	
Bus 439 Systems & Simulation	
Math 184 and 440 Linear Algebra (a sequence)	
Math 184 and 461 Linear & Higher Algebra (a sequence)	
Phil 211 Logic	
Psych 217 Intro to Statistics for Behavioral Sciences	
Phys 113-114 General Physics	6
Physical education activities	2
Electives to total 160 cr for the degree (at least 4 cr must be from art; 12 cr must be from at least two of the following fields; anthro, econ, geog, hist, philosophy, political sc, psych, and soc; 10 cr must be chosen from an adviser-approved list of electives; and 21 cr (19 for transfer students) of free electives	—

ART (B.A. or B.F.A.)

Students working toward the B.A. degree in art must complete the general L & S requirements for that degree. Students working toward the B.F.A. degree substitute the following for the L & S general requirements:

B.F.A. GENERAL REQUIREMENTS

Course	Credits
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Literature electives	3
Physical education activities	2
Science electives	8
Social sciences electives	12

ART CORE PROGRAM

The following core is taken by students working toward either the B.A. or B.F.A. degree:

Course	Credits
Arch 155-156 Design & Creative Process	4
Arch 385-386 History of Architecture	6
Art 101-102 Survey of Art	4
Art 111-112 Drawing I	4
Art 121-122 Creative Process & Design	4
Art 211-212 Drawing II	6
Art 231-232 Painting I	4
Art 241-242 Three-Dimensional Design	4
Art 301-302 History of Painting	6
Art 400 Seminar: Art History	2
Art 497 Senior Proseminar	2

Plus completion of either the general option or one of the special options listed below:

A. GENERAL OPTION

Course	Credits
Art 223 Graphic Design I	2
Art 233-234 Water Color I	4
Art 251-252 Printmaking I	4
Art 261-262 Ceramics I	4
Art 271-272 Jewelry I	4

B. SPECIAL OPTIONS

The special options are divided into two parts: the preprofessional (first two years) and the professional (remaining two years). Students wishing to enter one of the special options begin their prog in the general art option. At the end of the soph year, or beginning of the jr year, the student may make appl to the art faculty for admission to one of the special options. Students accepted by the art faculty will follow one of the options listed below during the jr and sr yrs. Students not accepted to the special option prog will remain in the general art option. Admission to one of the special options requires:

a. A cumulative GPA of 2.50 in all 100-level and 200-level art and arch courses in the art core programs. Grades are subject to faculty review and any probation, if granted, shall be at the discretion of the art faculty. The 2.50 average must be maintained in all art and arch courses to remain in good standing in the special options.

b. A portfolio of the student's work showing general prep for the special option; the student should clearly demonstrate competency in the specific option area.

c. A written statement by the student clearly explaining reasons for wishing to pursue one of the special options.

d. A recommendation from at least one member of the art faculty, preferably a faculty member from the specific option area.

1. **Design.** The art core program plus:

Course	Credits
Art 223-223 Graphic Design I	4
Art 233-234 Water Color I	4
Art 251-252 Printmaking I	4
Art 323-324 Graphic Design II	6
Art 423-424 Graphic Design III	6
Bus 323 Prin of Advertising	3

2. **Sculpture.** The art core program plus:

Course	Credits
Art 251-252 Printmaking I	4
Art 261-262 Ceramics I	4
Art 271-272 Jewelry I	4
Art 341-342 Sculpture I	8
Art 441-442 Sculpture II	8

Art 463 Sr Thesis (sculpture) 4
Art 499 Directed Study (sculpture) 8

3. **Painting.** The art core program plus:

Course	Credits
Art 233-234 Water Color I	4
Art 251-252 Printmaking I	4
Art 311-312 Drawing III	6
Art 331-332 Painting II	6
Art 431-432 Painting III	6
Art 463 Sr Thesis (painting)	4
Art 499 Directed Study (painting)	8

4. **Ceramics.** The art core program plus:

Course	Credits
Art 261-262 Ceramics I	4
Art 361-362 Ceramics II	6
Art 363-364 Clay & Glaze Form	4
Art 461-462 Ceramics III	6
Art 463 Sr Thesis (ceramics)	4
Art 465 Ceramic Problems	8
Art 499 Directed Study (ceramics)	4

5. **Jewelry.** The art core program plus:

Course	Credits
Art 251-252 Printmaking I	4
Art 261-262 Ceramics I	4
Art 271-272 Jewelry I	4
Art 371-372 Jewelry II	8
Art 463 Sr Thesis (jewelry)	4
Art 471-472 Jewelry III	8
Art 499 Directed Study (jewelry)	8

6. **Printmaking.** The art core program plus:

Course	Credits
Art 233-234 Water Color I	2
Art 251-252 Printmaking I	4
Art 311-312 Drawing III	6
Art 351-352 Printmaking II	6
Art 463 Sr Thesis (printmaking)	4
Photo 281 Understanding Photography	3

7. **Art Education.** The art core program plus:

Course	Credits
Three of the following sequences	12
Art 223-224 Graphic Design I	
Art 233-234 Water Color I	
Art 251-252 Printmaking I	
Art 261-262 Ceramics I	
Art 271-272 Jewelry I	
Art 391 *or* 392 Crafts in Art Ed, *or* 361 Ceramics II, *or* 371 Jewelry II, *or* HEc 314 Weaving	2-3
Ed 314 Strategies for Teaching	2
Ed 319 Sec School Art Methods	2
Ed 431, *or* 431 and 435 Practicum	9
Ed 445 Proseminar in Teaching	1
Ed 468 Contemporary Education	3
Psych 205 *or* Ed 415 Developmental *or* Ed Psych	3
Approved art electives	10

Note: Students electing the art ed option take Psych 100, Intro to Psych, and at least one course in either U.S. history or govt as part of the general college requirements for social science.

BACTERIOLOGY (B.S.)

General requirements for the B.S. degree, plus:

Course	Credits
Bact 250 General Bacteriology	4
Bact 304 Pathogenic Bacteriology	3
Bact 305 Pathogenic Bacteriology Lab	2
Bact 460 Microbial Physiology	5
Biochem 380 Introductory Biochemistry	4
Biol 201 Intro to the Life Sciences	4
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 372 Organic Chem II	3
Math 111 Finite Mathematics	4
Math 112 Survey of Calculus	4
Phys 113-114-115-116 General Physics & Lab	8
Sp 131 Fundamentals of Speech	2
Electives, which may include any of the following strongly recommended courses	12
Bact 402 Food & Applied Microbiology	
Bact 409, 410 Immunology & Lab	
Bact 414 Clinical Lab Methods	
Bact 425 Soil & Aquatic Microbiology	
Bact 499 Directed Study	
Genet 314-315 General & Experimental Genetics	
Zool 119 Human Anatomy & Physiology	
Zool 488 Parasitology	

MEDICAL TECHNOLOGY OPTION

Students who wish to apply for clinical training in medical technology at an accredited hospital will be reqd to take Bact 409, 410, 414, Zool 119, and Zool 488 from the above list of elective courses.

BIOLOGY (B.A. or B.S.)

General requirements for either the B.A. or B.S. degree, plus the following courses (electives to be chosen in consultation with the dept adviser).

Course	Credits
Bact 250 General Bacteriology	4
Biol 201 Intro to the Life Sciences	4
Biol 202 General Zoology	4
Biol 203 General Botany	4
Biol 331 General Ecology	3
Biol 351, 352 General Genetics & Lab	4
Biol 361 Biological Literature	1
Bot 311, 312 Plant Physiology & Lab	5
Bot 425 Developmental Plant Anatomy	4
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 275, 278 Carbon Compound & Lab	4
Math 140 College Algebra	3
Zool 323 Comparative Vertebrate Embryology, *or* 324 Anatomy	4
Zool 414, 415 Cell Physiology & Lab *or* 416 Mammalian Physiology	4-5

BOTANY (B.A. or B.S.)

General requirements for either the B.A. or B.S. degree, plus the following courses (electives to be chosen in consultation with the dept adviser).

Course	Credits
Biol 201 Intro to the Life Sciences	4
Biol 202 General Zoology	4
Biol 203 General Botany	4
Biol 331 General Ecology	3
Biol 351, 352 General Genetics & Lab	4
Biol 361 Biological Literature	1
Bot 311, 312 Plant Physiology & Lab	5
Bot 425 Developmental Plant Anatomy	4
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 372, 376 Organic Chem II & Lab	5
Math 140 College Algebra	3
Math 180 Analyt Geom & Calculus I	4
Phys 113-114-115-116 General Phys & Lab	8

CHEMISTRY: GENERAL (B.S.)

General requirements for the B.S. degree, plus:

Course	Credits
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 372 Organic Chem I, II	6
Chem 278, 376 Organic Chem Lab	3
Chem 305-306 Physical Chemistry	6
Chem 307-308 Physical Chem Lab	2
Chem 409 Proseminar	1
Engr 131 Digital Computer Programming *or* Math 205 Intro to Computer Programming	1-3

(Continued)

Math 180, 190, 200 Analyt Geom & Calculus 11
Phys 220, 221, 222 Engr Phys 9

This is a subminimal curriculum for students wishing to enter the profession of chem, but will provide a suitable foundation in chem 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.

General requirements for the B.S. degree, plus the courses listed in the "Chemistry: General" curriculum (above), plus:

Course	Credits
Chem 454 Instrumental Analysis	4
Chem 463, 464 Inorganic Chem & Lab	4
FL/GN 121-122 Elementary German *or* FL/RU 171-172 Elementary Russian	8

Plus two additional chem courses having Chem 306 as a prereq, or an alternate upper-div course in math or physics in combination with an approved chem course.

CHEMISTRY: TECHNICAL LITERATURE (B.S.)

General requirements for the B.S. degree, plus:

Course	Credits
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 277, 372 Organic Chem I, II	6
Chem 278, 376 Organic Chem 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
Engr 131 Digital Computer Programming, *or* Math 205 Intro to Computer Programming	1-3
Eng 317 Tech & Engr Report Writing	3
FL/FR 101-102 Elementary French, *or* FL/RU 171-172 Elementary Russian	8
FL/GN 121-122 Elementary German	8
FL/GN 223-224 Scientific German, *or* FL/RU 271-272 Intermediate Russian	8
Math 180, 190, 200 Analyt Geom & Calculus	11
Phys 220, 221, 222 Engr Phys, *or* Phys 113-114-115-116 General Phys & Lab	8-9

CHEMISTRY: TECHNOLOGICAL (B.Tech.)

Note: Students who complete this curriculum will be certifiable to the American Chemistry Society.

General university requirements (see regulation J), plus:

Course	Credits
Acctg 201 Principles of Accounting	3
Bus 231 Statistics	4
Bus 265 Legal Environment of Business	3
Bus 321 Marketing	3
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 305-306 Physical Chemistry	6
Chem 307-308 Physical Chemistry Lab	2
Chem 272, 376 Organic Chem II & Lab	5
Chem 409 Proseminar	1
Chem 454 Instrumental Analysis	4
Chem 463, 464 Inorganic Chem & Lab	4
Econ 170 Contemporary Econ *and* 272 Foundations of Econ Analysis, *or* 251-252 Prin of Econ	6-7
Engr 131 Digital Computer Programming	2
Eng 317 Tech & Engr Report Writing	3
Math 184 Elements of Linear Algebra	2
Phys 220, 221, 222 Engr Physics	9
Sp 131 Fundamentals of Speech	2
Two courses in chem that require physical chem as prereq, *or* one chem course as above 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 390 (Intro to Chemical Engr Prin).

CHILD DEVELOPMENT (B.A. or B.S.H.Ec.)

See School of Home Economics following this L & S section.

CLASSICAL STUDIES (B.A.)

General requirements for the B.A. degree, plus:

Course	Credits
Art 101 Survey of Art	2
FL/EN 211-212 Classical Mythology	4
FL/EN 363-364 Survey of Classical Origins	6
FL/GK 341-342 Elementary Greek (or equiv)	8
FL/LA 161-162 Elementary Latin (or equiv)	8
FL/LA 261-262 Interm Latin (or equiv)	8
Phil 101 or 103 Intro to Philosophy	3
Additional Latin and/or Greek courses numbered above FL/LA 262 and FL/GK 342	12

Plus five courses in related fields approved by the major adviser.

CLOTHING, TEXTILES AND DESIGN (B.S.H.Ec.)

See School of Home Economics following this L & S section.

COMMUNICATION (B.A. or B.S.)

See School of Communication following this L & S section.

ECONOMICS (B.A. or B.S.)

Note: Cr earned in math beyond the stated math requirements will be accepted in satisfaction of the elective requirement in areas other than econ.

General requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Acctg 201 Principles of Accounting	3
Econ 252-252 Principles of Economics	6
Econ 321 Interm Microeconomic Analysis	3
Econ 372 Interm Macroeconomic Analysis	3
Math 111 Finite Math *and* 112 Survey of Calculus, *or* Math 140 College Algebra *and* 112 Survey of Calculus, *or* Math 140 College Algebra *and* Phil 211 Logic, *or* Math 180 Analyt Geom & Calculus I	4-8
Statistics electives	3-4
Upper-div cr in econ	18
Upper-div cr from anthro, geog, hist, philosophy, political sc, psych, or soc (see note above)	15

ENGLISH (B.A.)

Note: Recommended prep includes Eng 111-112, Lit of Western Civ, or 175, Intro to Lit.

Courses taken to satisfy the 36-cr dept requirement in English must be numbered 267 *or* above. Where specific courses are listed with the area requirements, the dept may approve equivalencies.

General requirements for the B.A. degree, plus:

Course	Credits
Eng 267-268 Survey of English Lit	6
Eng 277 *or* 278 Survey of Amer Lit	3
Eng 435 Shakespeare	3
Area requirements incl one course each from 6 of the areas below	18
Middle Ages—Eng 433, 434	
Renaissance and 17th Century—Eng 437, 451, 452, 453	
Restoration and 18th Century—Eng 421, 438, 456	
Nineteenth Century British—Eng 422, 465, 466	
American Literature—Eng 470, 471, 472, 474	
Twentieth-Century British and Amer—Eng 426, 427, 428, 439	
Linguistics—Eng 441, 442, 443, 496	

English electives from the following or from courses not used in the area requirements list 6
Eng 400 Seminar
Eng 426 Irish Literary Renaissance
Eng 436 Advanced Shakespeare
Eng 473 Lit of the Amer West
Eng 476 American Folklore
Eng 482-483 Major Authors
Eng 494 Methods of Literary Criticism (strongly recommended)
Eng 495 Literary Criticism (strongly recommended)
Related fields approved by chairman 20

FRENCH (B.A.)

General requirements for the B.A. degree, plus:

Course	Credits
FL/FR 101-102 Elem French (or equiv)	8
FL/FR 201-202 Interm French (or equiv)	8
Upper-division courses in French language	20
A second foreign language (elem and interm, or equiv)	16
Related fields (as approved by chairman)	20

GEOGRAPHY (B.A. or B.S.)

General requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Geog 100, 101 Man's Physical Environment & Lab	4
Geog 140 Economic Geography	3
Geog 165 Human Geography	3
Geog 250 World Regional Geography	3
Geog 380 Cartography	4
Geog 490 Trends in Geography	3
Geol 101, 102 Physical Geol & Lab	4
Geography electives (upper-division)	18
Related fields approved by the Dept of Geog	20

GERMAN (B.A.)

General requirements for the B.A. degree, plus:

Course	Credits
FL/GN 121-122 Elem German (or equiv)	8
FL/GN 221-222 Interm German (or equiv)	8
Upper-division courses in German lang	20
A second foreign language (elem and interm, or equiv)	16
Related fields (as approved by chairman)	20

HISTORY (B.A.)

Note: Recommended prep should incl at least 6 cr from intro courses in any two other social sc. The choice of specific courses in each group must be approved by the student's adviser from the Dept of History.

General requirements for the B.A. degree, plus:

Course	Credits
Lower-div courses selected from the following	12
Hist 101-102 History of Civ	
Hist 111-112 Intro to U.S. History	
Hist 271-272 History of England	
Upper-division history courses	20
Related fields	20

HISTORY (B.S.)

Note: Students expecting to take graduate work in history are strongly urged to take the B.A. rather than the B.S. degree.

Recommended prep should incl at least 6 cr from intro courses in any two other social sc. The choice of specific courses in each group below must be approved by the student's adviser from the Dept of History.

General requirements for the B.S. degree, plus:

Course	Credits
Lower-div courses selected from the following	12
Hist 101-102 History of Civ	
Hist 111-112 Intro to U.S. History	
Hist 271-272 History of England	
Upper-division history courses	20
Related fields	20
Plus any combination of the following	12
Any foreign language (high school foreign language may be substituted at the rate of 4 cr per yr)	
FL/EN 313-314 Modern French Lit in Translation	
FL/EN 323-324 German Lit in Translation	
LF/EN 363-364 Survey of Classical Origins	
FL/EN 373-374 Russian Lit in Translation	
FL/EN 393-394 Spanish Lit in Translation	
Eng 387 Modern European Lit	

HOME ECONOMICS AND HOME ECONOMICS EDUCATION (B.S.H.Ec.)

See School of Home Economics following this L & S section.

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 prog is focused toward meeting the student's particular educational goal by combining the offerings of two or more major depts. The prog normally is developed and presented during the soph year. It must be approved by: (a) at least one faculty member from each of the participating depts of the university, one of which must be in L & S, (b) the chairman of one of the L & S depts involved, and (c) the L & S Committee on Interdisciplinary Studies. L & S requirements for either the B.A. or B.S. degree apply. This prog requires a minimum of 128 cr, of which at least 50 cr must be in courses numbered 200 or above, incl a minimum of 36 cr in courses numbered 300 or above. It is recommended, however, that majors in interdisciplinary studies complete at least 50 cr in upper-div courses.

Interested students should consult the L & S dean's office for referral to the Interdisciplinary Studies Committee for further info about this prog.

INTERIOR DESIGN (B.F.A.)

Courses	Credits
Arch 155-156 Design & Creative Process	4
Arch 255 Graphic Communication	2
Arch 256 Basic Architectural Design	2
Arch 266 Materials & Methods	3
Arch 299 Directed Study	1
Arch 383 Environmental Analysis	2
Arch 385-386 History of Architecture	6
Arch 474 Sem: Problems in Environmental Design	2
Arch 499 Directed Study	2
Art 101-102 Survey of Art	4
Art 111-112 Drawing I	4
Art 121-122 Creative Process & Design	4
Art 223-224 Graphic Design I	4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
HEc 123 Textiles	3
HEc 314 Weaving	3
HEc 426 History of Interiors & Furnishings	3
IntD 351-352 Interior Design I	6
IntD 361 Interiors & Materials	3
IntD 362 Furniture Design & Construction	3
IntD 451-452 Interior Design II	6
IntD 461 Interior Systems & Construction	2
IntD 472 Professional Practice of Interior Design	2
Math 111 Finite Mathematics	4
Math 112 Survey of Calculus	4
Psych 100 Intro to Psychology	3
Art electives	12
Physical education activities	2
Electives to total 128 cr for the degree	—

JOURNALISM (B.A. or B.S.)

See School of Communication following this L & S section.

LANDSCAPE ARCHITECTURE (B.L.Arch.)

Landscape arch, one of several design/planning professions, is the art and sc of integrating man's activities (development) with the environment to produce a desirable result or effect. Landscape architects, as part of a planning team, become involved in the site design of such projects as subdivisions, golf courses, ski areas, college campuses, parks, highway rest areas, urban malls, and campgrounds. At the regional scale, they aid in the preparation of resource inventories, evaluations, and develop-

(Continued)

ment plans for such projects as wild rivers, reservoirs, wilderness areas and national parks.

Note: Due to a limited enrollment capacity, admission to the prog is highly competitive; prospective students should write to the L.A. chairman early to learn admission procedures. The prog is accredited by the American Society of Landscape Architecture (ASLA).

Course	Credits
Arch 155-156 Design & Creative Process	4
Arch 384 Environmental Analysis	2
Arch 483 Intro to City Planning	3
Arch 484 City Planning	2
Art 111-112 Drawing I	4
Art 121-122 Creative Process & Design	4
Biol 201 Intro to Life Sciences	4
Biol 203 General Botany	4
Biol 331 General Ecology	3
CE 112 Elementary Surveying	2
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Geog 100, 101 Man's Physical Environment & Lab	4
Geol 101, 102 Physical Geol & Lab	4
Geol 335 Geomorphology	3
LArch 259-260 Landscape Arch I	11
LArch 269-270 Landscape Constr I-II	6
LArch 288 Plant Materials	3
LArch 289 Hist of Landscape Arch	2
LArch 358 Professional Office Practice, LA	2
LArch 359-360 Landscape Arch II	12
LArch 388 Plant Materials	3
LArch 459-460 Landscape Arch III	12
Math 140 College Algebra	3
Soils 205 General Soils	3
Soils 354 Soil Resources & Land Use Planning	2
Physical education activities	2
Electives to total 136 cr for the degree, of which at least 2 cr must be from art and 12 must be from at least 2 of the following fields: anthro, econ, geog, hist, philosophy, political sc, psych, soc, and forestry	—

LATIN (B.A.)

General requirements for the B.A. degree, plus:

Course	Credits
FL 161-162 Elem Latin (or equiv)	8
FL 261-262 Interm Latin (or equiv)	8
Upper-division courses in Latin	20
A second foreign language (elem and interm, or equiv)	16
Related fields (as approved by chairman)	20

LATIN-AMERICAN STUDIES (B.A.)

General requirements for the B.A. degree, incl Spanish for the foreign language requirement, plus:

Course	Credits
FL/SP 384 Hispanic Culture & Institutions	3
FL/SP 387-388 Survey of Span-Am Lit, *or* FL/SP 487-488 Contemporary Span-Am Lit	6
Geog 360 Latin America	3
Hist 435 Colonial Latin America	3
Hist 438 Mexico Since Indep, Central Am & Carib, *or* Hist 439 National Latin Am	3
Plus at least seven of the following courses (or the optional courses listed above):	
Anthr 320 Peoples of the World	3
Anthr 330 World Prehistory	3
*Econ 477 Econ of Developing Countires	3
Eng 111-112 Lit of Western Civ	6
FL/SP 386 Survey of Spanish Lit	3
Hist 440 Inter-Amer Relations	3
Hist 465-466 Social & Cultural Hist of Europe	6
Phil 411 Social Philosophy	3
PolSc 438 Conduct of Amer Foreign Policy	3
PolSc 440 International Org & Law	3
*PolSc 483 Modernization & Political Change	3

*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.

LAW—COMBINED PROGRAM (B.A.-J.D. or B.S.-J.D.)

The B.A. or B.S. degree will be awarded to candidates who complete 98 cr by the end of the jr yr (incl all general requirements for the B.A. or B.S. and 12 cr in courses numbered 300 or above with the approval of their adviser), as well as the 30 cr in the 1st yr of the law curriculum. Upon satisfactory completion of the law curriculum (see College of Law in the section immediately preceding L & S), the degree of Juris Doctor will be conferred. Students in this combined program enroll in L&S for their first 3 yrs and in the College of Law for the final 3 yrs. For requirements for entrance into the College of Law under the combined program, see "Combined Degree Programs" in the College of Law section.

Note: The College of Law does not recommend a combined-degree program; it is successfully pursued infrequently.

MATHEMATICS (B.A. or B.S.)

General requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Phys 220, 221, 222 Engr Phys I, II, III (to acquaint the student with an area in which math is applied; upon the approval of the dept, substitution of other courses to meet this objective may be allowed)	9
Math 180, 190, 200 Analyt Geom & Calculus	11
Math 184 Elements of Linear Algebra	2
Math 186 Theory of Numbers *or* 215 Seminar in Topology of the Plane	2-3
Math 461 Higher Algebra	3
Math 471 Advanced Calculus	3
Math 462 Higher Algebra, *or* 472 Adv Calculus	3
Math electives in courses numbered above 300, at least 6 cr of which are in courses numbered above 401 (Math 300, 320, 331, and 332 may not be applied toward this requirement)	12

MATHEMATICS: APPLIED (B.S.)

General requirements for the B.S. degree, plus:

Course	Credits
Engr 131 Digital Computer Programming	2
Math 180, 190, 200 Analyt Geom & Calculus	11
Math 184 Elements of Linear Algebra	2
Math 205 Intro to Computer Programming	3

Plus one of the following options

A. STATISTICS OPTION

Course	Credits
ApSt 406 Statistical Research Methods	3
Math 320 Probability & Statistics	3
Math 451-452 Probability Theory & Math Stat	6
Math 471-472 Advanced Calculus	6
At least two courses selected from the following:	6
ApSt 507 Experimental Design	
Math 305 Computer Org & Programming	
Math 405 Adv Programming	
Math 433 Numerical Analysis	
Math 434 Numerical Analysis	
Math 440 Linear Algebra	
Math 480 Partial Differential Equations	
Math 487 Data Structures	
Math 499 Directed Study	
Approved electives in fields where stats are applied (not to be in applied stats courses)	6

B. COMPUTER-PROGRAMMING OPTION

Course	Credits
Math 305 Computer Org & Programming	3
Math 310 Ordinary Differential Equations	3
Math 405 Advanced Programming	3
Math 433-434 Numerical Analysis	6
Math 440 Linear Algebra	3
Math 487 Data Structures	3
At least three courses selected from the following:	9
Math 320 Probability & Statistics	
Math 407 Discrete Mathematical Structures	
Math 451 Probability Theory & Math Stats	

Math 452 Probability Theory & Math Stats
Math 461 Higher Algebra
Math 462 Higher Algebra
Math 471 Advanced Calculus
Math 472 Advanced Calculus
Math 480 Partial Differential Equations
Math 482 Advanced Applied Math
Math 490 Intro to Set Theory

MUSEOLOGY (B.A. or B.S.)

This major prepares students for work in a wide range of museum jobs. Museum work requires a theoretical intro, breadth of ed and exper, a variety of technical "know-how," and competency in one or more subject areas. All of this is taken into account in the list of reqd and elective courses that constitute the major.

General requirements for either the B.A. or B.S. degree, plus:

Course	Credits
One of the following courses	3
Anthr 110 Intro to Physical Anthr & Archaeology	
Anthr 120 Intro to Social Anthr	
Anthr 225 Aboriginal N Am Indian	
Anthr 301 Study of Man	
Anthr 325 Indians of Idaho	
Anthr 330 World Prehistory	
Anthr ID425 Contemporary N Am Indian	
Anthr 435 North American Prehistory	
*Arch 155-156 Design & Creative Process	4
Art 101-102 Survey of Art	4
*Art 121-122 Creative Process & Design	4
Biol 462 Biol Field & Museum Tech	3
Eng 390 Adv Prose Writing	3
Geog 250 World Regional Geography	3
Hist 433 *or* 434 Social & Cultural Hist of US	3
IEd 140 Wood Tech, *or* 300 Finishing Materials & Methods	2-3
Jour 121 News Wrtg, *or* 432 Feature Article Wrtg	3
Museo ID301 Intro to Museology	3
Museo ID400 Seminar	2-3
Museo ID402 Intermediate Museology	3
Museo ID450 Advanced Museology *and/or* ID499 Directed Study	4
OAd 313 Office Management	2
Psych 100 Introduction to Psychology	3
Electives representing at least four different subject areas selected from the courses listed below	12
Ed 328 Audiovisual Aids	
Eng 201 The Research Paper	
Eng 317 Tech & Engr Report Writing	
Film 388 Cinematography for TV	
FWR 287 Principles of Wildland Recreation Mgmt	
FWR 387 Environmental Interpretive Methods	
Geog 380 Cartography	
HEc 123 Textiles	
HEc 314 Weaving	
HEc 326 Housing & Home Furnishings	
HEc 426 History of Interiors & Furnishings	
LibSc 420 Class & Cataloging	
Phil 401 Philosophy of the Arts	
Phil 412 Philosophy of Science	
Photo 281 Understanding Photography	
Psych 205 Developmental Psychology	
Psych 320 Social Psychology	
RadTV 322 Educational Uses of Broadcasting	
SocSc 185 *or* 385 Study Tour Abroad	
Soc 110 Intro to Sociology	
Soc 230 Social Problems	
Soc 311 Urban Sociology	
Soc 321 The Community	
Sp 131 Fundamentals of Speech	
Sp 140 Nonverbal Communication	
Plus electives chosen from one of the following fields: anthro, art, botany, elem ed, geol, U.S. hist, sc and technology, or zool	12

Recommended: additional courses in the student's special museum field and related areas, and additional courses from the list of electives beyond the 12 cr that are reqd.

*Arch 155-156 are to be taken concurrently with Art 121-122.

MUSIC AND MUSIC EDUCATION (B.A. or B.Mus.)

See School of Music following this L & S section.

NAVAL SCIENCE (B.N.S.)

Course	Credits
CS 205 Intro to Computer Programming	3
Hist 456 Recent Times	3
Math 180, 190 Analyt Geom & Calculus I, II	8
NS 101 Intro to Naval Science	2
NS 102 Ship Systems I	3
NS 201 Ship Systems II	3
NS 202 Sea & Maritime Affairs	2
NS 301 Navigation	3
NS 302 Naval Operations	3
NS 401 Naval Organization & Mgmt	3
NS 402 Naval Leadership	3
Phys 113-114 General Physics	6
Phys 115 *or* 116 General Physics Lab	1

A naval sc student must complete at least 80 percent of the requirements toward another university degree, as approved by the dean of the college concerned.

A student in naval sc 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 L & S; however, the academic records of the student concerned remain with the college in which he or she is registered for the regular baccalaureate degree.

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 chairman of philosophy.

General requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Phil 201 Ethics	3
Phil 211 Logic	3
Phil 309 History of Ancient Philosophy	3
Phil 310 History of Modern Philosophy	3
Philosophy electives (upper-division)	15
Related fields (humanities, social sc, and sc)	20

PHYSICS (B.A. or B.S.)

General requirements, for either the B.A. or B.S. degree, plus:

Course	Credits
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis, *or* 114 General Chem	4-5
Math 180, 190, 200 Analytic Geometry & Calculus	11
Phys 220, 221, 222 Engineering Physics I, II, III	9
Phys 321-322 Analytic Mechanics	6
Phys 341-342 Electricity & Magnetism	6
Phys 351 Elementary Quantum Mechanics	3
Phys 360 Intro to Modern Physics	3
Phys 498 Research	1
Mathematics (upper-div)	6
Plus, for the B.A. only:	
Upper-div physics courses (incl at least 3 cr of lab	9
Plus, for the B.S. only:	
Upper-div physics courses (incl at least 3 cr of lab	15

PHYSICS (B.Phys.)

Course	Credits
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis, *or* 114 General Chem	4-5
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3

(Continued)

Math 180, 190, 200 Analyt Geom & Calculus 11
Phys 220, 221, 222 Engr Phys I, II, III 9
Phys 321-322 Analytical Mechanics 6
Phys 341-342 Electricity & Magnetism 6
Phys 351 Elem Quantum Mechanics 3
Phys 360 Intro to Modern Physics 3
Phys 411 Physical Instrumentation 3
Phys 431 Thermodynamics & Kinetic Theory 3
Phys 443 Optics 3
Upper-div physics courses 3
Mathematics (upper-division) 11
Physical education activities 2
Social sciences electives (anthro, econ, hist, philosophy, political sc, or soc) 6

Plus the equiv of one yr of one of the following modern foreign languages: French, German, Italian, or Russian.

POLITICAL SCIENCE (B.A.)

General requirements for the B.A. degree, plus

Course	Credits
PolSc 105 Intro to Political Science	3
Intro courses in other social sc	6
Additional political sc courses number 150 or above (minimum of 20 cr required in upper-div courses; total to incl PolSc 435, and at least 3 cr in PolSc 425 or 426)	26
Upper-division related field courses	20

Note: A maximum of 9 cr of political sc internship courses may be counted toward meeting the political sc cr requirements. Political sc courses should be distributed so as to incl at least 3 dealing primarily with U.S., and at least 3 dealing primarily with non-U.S., political processes, ideas, or govt. The choice of specific electives must be approved by the dept.

POLITICAL SCIENCE (B.S.)

General requirements for the B.S. degree, plus:

Course	Credits
Math 111 Finite Math, *or* 140 College Alg, *or* 180 Analyt Geom & Calculus I	3-4
PolSc 105 Intro to Political Science	3
Intro courses in other social sc	6
Additional political sc courses numbered 150 or above (minimum of 20 cr required in upper-div courses; total to incl PolSc 435, and at least 3 cr in PolSc 425 or 426)	26
Research methods in the behavioral sc, stats, data processing, or computer programming (may be counted as related field if upper-div)	5
Upper-division related field courses	20

Note: A maximum of 9 cr of political sc internship courses may be counted toward meeting the political science cr requirement. Political sc courses should be distributed so as to incl at least 3 dealing primarily with U.S., and at least 3 dealing primarily with non-U.S., political processes, ideas or govt. The choice of specific electives must be approved by the dept.

PRE-DENTAL STUDIES (B.S.Pre-Dent.)

Students in the four-year predental prog satisfy the requirements of the premedical curriculum (see below), except that the sr-yr option A for predental students reads as follows: Option A—Completion of the first yr of dental study at an approved college of dentistry.

PRE-MEDICAL STUDIES (B.S.Pre-Med.)

Students not having high school chem take Chem 103 in place of Chem 111. Where electives are specified in the first 3 yrs, the following are suggested: Math 180, 190, 200, Analytic Geom & Calculus I, II, III, and Phys 220, Engr Physics I.

FIRST THREE YEARS

Course	Credits
Biol 201 Intro to the Life Sciences	4
Biol 202 General Zoology	4
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 372, 376 Organic Chem II & Lab	5
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Math 140 College Algebja *or* Math 111 Finite Math and Math 112 Survey of Calculus	3-8
Phys 113-114-115-116 Gen Phys, *or* 221, 222 Engr Physics II, III	6-8
Zool 323 Comparative Vertebrate Embryology	4
Zool 324 Comparative Vertebrate Anatomy	4
Physical education activities	2
Social sciences electives	6
Electives to complete 96 cr for the first 3 yrs	11-18
Recommended elective: Foreign language	14-16

SENIOR YEAR

Completion of either of the options below:

Option A—Completion of the first yr of medical study at an approved college of medicine.

Option B—Completion of sufficient cr to total 128, incl at least 36 cr in courses numbered 300 or above, and at least 12 of these upper-div cr must be in the social sciences and/or humanities. One course in math or stats beyond Math 111-112 or 140.

Suggested sr-yr electives:

Biol 351 General Genetics	3
Chem 305-306, 307-308 Physical Chem & Lab, *or* 302, 303 Prin of Physical Chem & Lab	4-8
Chem 481-482 *or* 380 Biochemistry	4-6
Zool 416 Mammalian Physiology	4
Zool 481 Ichthyology, *or* 488 Parasitology, *or* 489 Herpetology, *or* 414 Cell Physiology	3-4

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 programs are suggested for students who plan to transfer to a school of nursing.

ONE-YEAR AND ONE SUMMER PROGRAM (38-39 credits)

Course	Credits
Bact 250 General Bacteriology	4
Biol 201 Intro to Life Sciences, *or* Math 140 College Algebra	3-4
Chem 103 Intro to Chem, *or* 111 Prin of Chem	4
Chem 114 General Chemistry, *or* 275, 278 Carbon Compounds & Lab	4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
H&S 288 First Aid	2
HEc 270 Nutrition	3
Psych 100 Intro to Psychology	3
Soc 110 Intro to Sociology	3
Sp 131 Fundamentals of Speech	2
Humanities electives	2
Physical education activities	2

TWO-YEAR PROGRAM (64 credits)

Course	Credits
Bact 250 General Bacteriology	4
Biol 201 Intro to Life Sciences	4
Chem 103 Intro to Chem, *or* 111 Prin of Chem	4
Chem 114 General Chem, *or* 275, 278 Carbon Compounds & Lab	4
HEc 270 Nutrition	3
HEc 334 Child Development	3
Psych 100 Intro to Psychology	3
Soc 110 Intro to Sociology	3
Zool 119 Human Anatomy & Physiology	5
Humanities and social sciences electives (at least 6 cr in each field)	21
Communications electives (3 cr must be in written communication	6

Physical education activities	2
Electives	2

Strongly recommended elective:

HEc 340 Family Relations	3

PRE-PHYSICAL THERAPY STUDIES

UI does not offer a formal prog in prephysical therapy studies; however, the prephysical therapy adviser will assist interested students to select courses that will best qualify them for transfer into a regular prog at another institution.

There are 3 plans of study leading to professional qualification in physical therapy: (1) 4-yr bachelor's degree courses for high school graduates and transfer students; (2) 12- or 16-month certificate courses for students who hold the bachelor's degree; and (3) courses leading to the master's degree for students with a bachelor's degree and the requisite background. As noted above, such programs are not offered at UI.

Recommended Preparation
The courses listed below incl most of the essential courses for transfer into a typical prog.

Course	Credits
Biol 201 Intro to the Life Sciences	4
Biol 202 General Zoology	4
Chem 111 Principles of Chemistry	4
Chem 114 General Chemistry	4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Math 140 College Algebra	3
Phys 113-114-115-116 General Phys & Lab	8
Psych 100 Intro to Psychology	3
Psych 205 Developmental Psychology	3
Psych 311 Abnormal Psychology	3
Soc 110 Intro to Sociology	3
Zool 119 Human Anatomy & Physiology	5
Humanities electives	3
Physical education activities	2
Electives	14

Note: Students wishing to earn a bachelor's degree at UI before transferring into a certificate program in physical therapy may earn the degree in an allied area.

PSYCHOLOGY (B.A. or B.S.)

Note: The alternatives for the math requirements will be determined on the basis of high school math courses and aptitude scores in consultation with dept advisers. Alternatives in the major area and related courses should be selected in consultation with the dept adviser.

General requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Psych 100 Intro to Psychology	3
Psych 201 Research in Behavioral Sc	4
Psych 217 Intro to Stat for Behavioral Sc	3
Electives from Psych 300-499 (minimum)	20
Mathematics (minimum)	3
Courses in biol or zool incl 4 cr of lab	6

RADIO-TELEVISION (B.A. or B.S.)

See School of Communication following this L & S section.

RELIGIOUS STUDIES

Admission to a school of theology involves meeting satisfactorily its entrance requirements, acceptable scholastic records, and possession of personal qualifications essential for effective leadership. The American Association of Theological Schools recommends a broad liberal arts background as the primary prep for theological studies, along with such appropriate courses in religious studies as may be available at the student's undergraduate institution.

UI does not offer a major in religious studies. The following courses are suggested for students who (1) plan to transfer into a religious studies major at another institution, (2) plan to go to a seminary or theological school, or (3) wish to be introduced to the field of religious studies. The list is divided between "core" courses and "collateral" courses, and is not intended to be exhaustive

Core Courses	Credits
Anthr 421 Belief Systems of Simple Societies	3
Eng 375 Bilbe as Literature	3
Hist 448 Reformation Europe	3
Phil 111 Intro to Phil of Religion	3
Phil 305 Phil of Religion	3
Phil 432 India's Philosophies	3
RelSt 104 Biblical Hist & Thought	3
RelSt 106 Essentials of Christianity	2
RelSt 131 Religion & Meaning of Existence	3
RelSt 204 Special Topics: Bible Studies	3
RelSt 321 Contemporary Theological Thought	2
RelSt 322 Religious Institutions	2
RelSt 323 Religion & Society	2
RelSt 404 Special Topics: Bible Studies	3

Collateral Courses	Credits
Art 101-102 Survey of Art	4
FL/EN 211-212 Classical Mythology	4
Hist 101 History of Civilization	3
Hist 441-442 Greek & Roman History	6
Hist 446 Medieval Europe	3
Hist 457 Hist of the Middle East	3
Phil 101 *or* 103 Intro to Philosophy	3
Phil 201 Ethics	3
Psych 320 Social Psychology	3
RelSt 490 Technology & Human Values	2
Soc 321 The Community	3

SOCIOLOGY (B.A.)

General requirements for the B.A. degree plus the following courses (electives must be approved by the head of the Dept of Soc/Anthro).

Course	Credits
Anthr 110 Intro to Physical Anthr & Archaeology	3
Anthr 120 Intro to Social Anthr	3
Psych 461 Psych of Personality	3
Soc 110 Intro to Sociology	3
Soc 230 Social Problems	3
Soc 314 Social Statistics (or equiv)	3
Soc 410 Intro to Social Research	3
Soc 412 Social Structure & Personality	3
Soc 413 Early Social Theory	3
Soc 414 Modern Social Theory	3
Sociology electives (upper-division)	12
Related fields to incl at least 3 courses selected from the following	18

Anthr 320 Peoples of the World
Anthr 321 Culture & Personality
Anthr 402 History of Anthr Theory
Anthr 420 Ethnological Issues
Anthr 420 Belief Systems of Simple Societies
Anthr ID425 Contemporary N. American Indian
Comm 370 Comm & Attitude Change
Comm 455 History of Mass Comm
Comm 492 Mass Comm & Public Opinion
Econ 251 Prin of Economics
Phil 411 Social Philosophy
Phil 425 American Philosophy
PolSc 433 Public Opinion & Electoral Behavior
Psych 205 Developmental Psychology
Psych 311 Abnormal Psychology
Psych 320 Social Psychology

SOCIAL WORK EMPHASIS

UI does not offer a degree in social work; however, soc majors who wish to prepare for a career in the field of social work or gerontology may qualify for the license reqd to practice in Idaho by incl in the B.A. or B.S. curriculum *either* 6 cr in supervised clinical practicum *or* at least 12 cr in social work courses. The following courses fulfill either of these requirements:

Course	Credits
Soc 231 Practicum in Aging	1-4
Soc 240 Intro to Social Welfare	3
Soc 241 Contemporary Social Welfare Org	3
Soc 409 Field Methods in Social Work	3-8
Soc 440 Methods of Social Work	3

The following courses are suggested for the allowable soc electives and free electives:

Course	Credits
Bact 254 Public Health & Hygiene *or* 101 Food & Life	3
PolSc 275 American State Govt	3
Psych 205 Developmental Psych	3
Psych 311 Abnormal Psych	3
Soc 320 Marriage and the Family	3
Soc 330 Juvenile Delinquency *or* 331 Criminology	3
Soc 431 Problems of the Aging	3-4

SOCIOLOGY (B.S.)

General requirements for the B.S. degree plus the following courses (electives must be approved by the head of the Dept of Soc/Anthro):

Course	Credits
All requirements listed for the B.A. in sociology	60
Math 111 Finite Math, *or* 140 College Algebra *or* 180 Analyt Geom & Calculus I	3-4
Two courses from the following	5-7
Biol 201 Intro to the Life Sc	
Engr 131 Digital Computer Programming (or equiv)	
Phil 412 Phil of Science	
Psych 418 Interm Stats for Behavioral Sc (or equiv)	

SPANISH (B.A.)

General requirements for the B.A. degree, plus:

Course	Credits
FL/SP 181-182 Elem Spanish (or equiv)	8
FL/SP 281-282 Interm Spanish (or equiv)	8
FL/SP 381-382 Adv Spanish Grammar & Comp	6
FL/SP 383-384 Hispanic Culture & Institutions	6
FL/SP 385-386 Survey of Spanish Literature	6
FL/SP 388 Survey of Spanish-American Literature	3
Upper-division courses in Spanish language	3
A second foreign language (elem and interm, or equiv)	16
Related fields (as approved by chairman)	16

SPEECH (B.A. or B.S.)

See School of Communication following this L & S section.

THEATRE ARTS (B.A. or B.S.)

The selection of courses in related fields within either option must be approved by the head of the dept.

General requirements for either the B.A. or B.S. degree, plus:

Core Courses	Credits
ThA 102 Stage Makeup	1
ThA 103 Introduction to Stagecrafts	2
ThA 105 Basics of Performance	2
ThA 150 Performance Lab	8
ThA 163 Technical Production	3
ThA 190 Theatre Practice I	4
ThA 263 Basics of Scene Design & Graphics	2
ThA 271 Play Analysis	3
ThA 272 Intermediate Acting	3
ThA 273 Stage Lighting	3
ThA 362 Costume for the Stage	3
ThA 390 Theatre Practice II	4
ThA 420 Production Management	2
ThA 467-468 The Theatre	6
ThA 469 Modern Theatre	3
ThA 471-472 Directing	6

Plus completion of either of the options below:

A. ACTING-DIRECTING OPTION

Course	Credits
ThA 106 Basics of Performance	2
ThA 305 Methods in Characterization	3
ThA 306 Advanced Acting	3
ThA 407-408 Styles of Acting	6
Courses in related fields	20

B. TECHNICAL THEATRE OPTION

Course	Credits
ThA 363 Costume Construction	3
ThA 364, 464 Scene Design I, II	6
Courses in related fields	20

THEATRE ARTS (B.F.A.)

General requirements for the B.S. degree *and* the core and other courses applicable to either of the options listed under the requirements for the B.A. or B.S. in theatre arts (see above), plus the following additional requirements.

Note: Courses listed below that satisfy the foregoing requirements may be counted toward those requirements also.

A. ACTING-DIRECTING OPTION

Course	Credits
Art 101 Survey of Art	2
Eng 111-112 Literature of Western Civ	6
Eng 267 *or* 268 Survey of English Lit	3
Eng 277 *or* 278 Survey of American Lit	3
Eng 335 Shakespeare for Nonmajors	3
FL/EN 363 Survey of Classical Origins	3
Hist 101-102 History of Civilization	6
Hist 271 *or* 272 History of England	3
Hist 441 Greek & Roman History, *or* 446 Medieval Europe	3
MusH 100 Music Appreciation	3
Physical ed (2 cr each of dance and fencing taken in freshman and soph yrs)	4
Psych 100 Intro to Psychology	3
Psych 205 Developmental Psych	3
Soc 110 Intro to Soc, *or* 230 Social Problems	3

B. TECHNICAL THEATRE OPTION

Course	Credits
*Arch 155-156 Design & Creative Process	4
*Arch 385-386 History of Architecture	6
Art 101-102 Survey of Art	4
Art 111-112 Drawing I	4
Art 121-122 Creative Process & Design	4
Art 211-212 Drawing II	6
Art 223-224 Graphic Design I	4
Hist 101 History of Civilization	3
**HEc 123 Textiles	3
**HEc 124 Clothing	3
**HEc 324 Flat Pattern Study	3
**HEc 327 Tailoring	3
**HEc 424 Original Design	3
*IEd 140 Wood Technics	3
*IEd 170 Wood Product Design & Fabrication	3
*IEd 315 Industrial Design	2
MusH 100 Music Appreciation	3
MusH 459 Opera Literature	3
Phil 101 *or* 103 Intro to Philosophy	3
Phil 401 Philosophy of the Arts	3
Physical ed (2 cr each of dance and fencing taken in the freshman and soph yrs)	4
Soc 110 Intro to Sociology	3

*Not taken by students concentrating in costuming.
**Taken by students concentrating in costuming.

ZOOLOGY (B.A. or B.S.)

General requirements for either the B.A. or B.S. degree, plus the following courses (electives are to be chosen in consultation with the dept adviser).

Course	Credits
Biol 201 Intro to the Life Sciences	4
Biol 202 General Zoology	4

Biol 203 General Botany 4
Biol 331 General Ecology 3
Biol 351, 352 General Genetics & Lab 4
Biol 361 Biological Literature 1
Chem 111 Principles of Chemistry 4
Chem 112 Inorganic Chem & Qual Analysis 5
Chem 253 Quantitative Analysis 5
Chem 277, 278 Organic Chem I & Lab 4
Chem 372, 376 Organic Chem II & Lab 5
Math 140 College Algebra 3
Math 180 Analyt Geom & Calculus I 4
Phys 113-114-115-116 General Phys & Lab 8

Plus one of the following options:

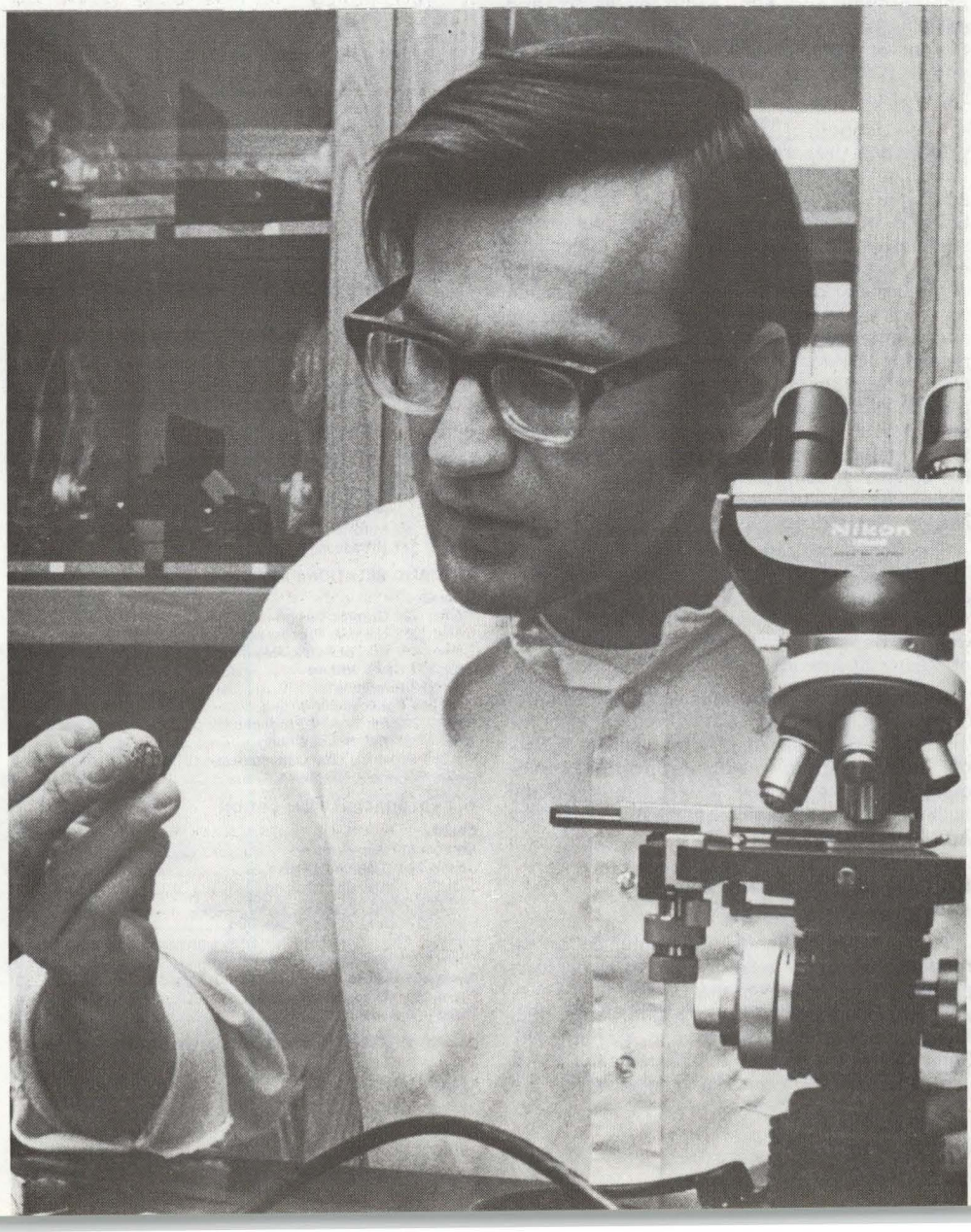
A. VERTEBRATE OPTION

At least one course from each of the following groups:

Zool 323 Comparative Vertebrate Embryology *or* 324 Comparative Vertebrate Anatomy, *or* 427 Vertebrate Histology & Organology 4
Zool 414-415 Cell Physiology & Lab, *or* 416 Mammalian Physiology 4-5
Zool 481 Ichthyology, *or* 482 Natural Hist of Birds, *or* 483 Natural Hist of Mammals, *or* 489 Herpetology 3-4
Zool 484 Invertebrate Zool, *or* 488 Parasitology, *or* Ent 211 General Entomology 3-5

B. INVERTEBRATE OPTION

Ent 211 General Entomology 4
Ent 342 Insect Identification 4
Ent 442 Immature Insects, *or* Zool 435 Limnology, *or* Zool 487 Protozoology, *or* Zool 488 Parasitology 3
Ent ID484 Insect Anatomy & Physiology 4
Ent ID498 Insect Morphogenesis 4
Zool 414-415 Cell Physiology & Lab 5
Zool 484 Invertebrate Zoology 5



School of Communication of the College of Letters and Science

Elmer K. Raunio, Dean of the College of Letters and Science; Don H. Coombs, Director of the School of Communication (Communication Bldg.).

The academic disciplines and services in the field of communication were brought together under the School of Communication in 1972. The school functions as an administrative unit of the College of Letters and Science and is responsible for the subject fields of communication, journalism, photography and film, radio-television, and speech. Broadcast Services, which is part of the School of Communication, operates KUID-TV and KUID-FM, the university's television and radio stations.

The School of Communication provides professional preparation in communication fields and also functions as a multidepartmental academic unit of the College of Letters and Science for the purpose of offering courses for students in other fields. The school's objectives are: (1) to provide a means for greater integration of the broader communications area; (2) to open up areas for imaginative curricular development and synthesis, including graduate training and research; (3) to bring the various areas into closer relationship and cooperation; (4) to provide students with the best possible education and training for their chosen professional fields; (5) to maintain effective broadcast services for the university, community, and state.

Major Curricula

The School of Communication offers curricula in communication, journalism, radio-television, and speech leading to the degree of Bachelor of Arts or Bachelor of Science, and, cooperatively with the Department of Theatre Arts, the degree of Master of Arts in Teaching.

Students in this school must satisfy the general College of Letters and Science requirements for the B.A. or B.S. degree, plus the specific School of Communication and departmental requirements listed below. (Consult the graduate bulletin for the requirements for the Master of Arts in Teaching).

School of Communication Requirements

All majors in the School of Communication are required to take at least one 2-credit course in each of the basic skills areas: (1) written, (2) oral, and (3) visual communication; plus Comm 488, Theory in Communication, and Comm 496, Senior Research Project. For students to receive internship credit toward a degree from the School of Communication requires approval of the School of Communication.

A cumulative grade point average of 2.50 in all School of Communication courses taken and the approval of a faculty review committee are reqd of students seeking upper-class standing in the school. Grades are subject to faculty review and any probation, if granted, shall be at the discretion of the faculty. In order to remain in good standing in the school, the 2.50 average must be maintained in all School of Communication courses taken.

COMMUNICATION (B.A. or B.S.)

General L & S and School of Communication requirements for either the B.A. or B.S., plus:

Course	Credits
Two courses from the following	4-5
Comm 120 Mass Comm in a Free Society	
Comm 490 Law of Mass Comm	
Sp 141 Interpersonal Comm	
One course from the following	2-3
Comm 492 Mass Comm & Public Opinion	
PolSc 433 Public Opinion & Electoral Behavior	
Soc 313 Collective Behavior	
One course from the following	3
Comm 370 Comm & Attitude Change	
Psych 320 Social Psychology	
Soc 412 Social Structure & Personality	

Plus from 6 to 12 communication-related courses selected to reflect personal and career specialization interests, and one of the following options:

A. ADVERTISING OPTION

Course	Credits
Bus 321 Marketing	3
Bus 323 Prin of Advertising	3
Comm 224 Graphic Design I	2
Comm 360 Adv Media & Sales: Broadcast	2
Comm 362 Adv Media & Sales: Print	2
Comm 366 Creative Processes of Advertising	4
Comm 372 Prin of Public Relations	3
Jour 121 News Writing	3
RadTV 292 Intro to TV Production	3
RadTV 387 Broadcast Writing	3

B. PUBLIC RELATIONS OPTION

Course	Credits
Comm 224 Graphic Design I	2
Comm 366 Creative Processes of Advertising	4
Comm 372 Prin of Public Relations	3
Jour 121 News Writing	3
Jour 222 Reporting	3
Jour 384 Publications Editing	3
RadTV 292 Intro to TV Production	3
RadTV 387 Broadcast Writing	3
Sp 341 Organizational Communication	3
Sp 362 Comm & the Small Group	3

C. PHOTOGRAPHY/FILM OPTION

Course	Credits
Art 101-102 Survey of Art	4
Comm 224 Graphic Design I	2
Jour 384 Publications Editing	3
Film 288 Basic Film—Super 8	3
Film 302 History of American Film	3
Film 388 Cinematography for Television	3
Photo 281 Understanding Photography	3
Photo 301 History of Photography	3
Photo 381 Advanced Photography	4
Photo 400 Seminar	3

D. INTERPERSONAL COMMUNICATION OPTION

Course	Credits
Comm 491 Propaganda	2

Sp 121 Improving Listening Skills 1
Sp 131 Fundamentals of Speech 2
Sp 140 Nonverbal Communication 1
Sp 141 Interpersonal Communication 2
Sp 311 Intercultural Communication 2
Sp 321 Interviewing 3
Sp 331 Resolution of Conflict 2
Sp 341 Organizational Communication 3
Sp 362 Comm & the Small Group 3
Electives in behavioral and social sciences, business, communication, or English (approved by adviser) 12

JOURNALISM (B.A. or B.S.)

General L & S and School of Communication requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Comm 120 Mass Comm in a Free Society	2
Comm 455 History of Mass Comm	3
Comm 490 Law of Mass Comm	3
Jour 121 News Writing	3
Jour 222 Reporting	3
Jour 323 Public Affairs Reporting	3
Advertising electives	2-3
Cognate fields* (incl econ, hist, lit, political sc, soc, philosophy, psych, speech, and theatre arts, *with at least one 2-4 cr course in each of the first five fields named;* at least 15 of these 30 cr must be at the upper-div level)	30
Plus one of the options listed below and sufficient electives to complete 128 cr for the degree	—

A. NEWS-EDITORIAL OPTIONS

Course	Credits
Jour 354 News Editing	3
Jour 424 Interpretive Writing	3
At least three of the following:	
Comm 372 Prin of Public Relations	3
Comm 445 Internship	3
Comm 492 Mass Comm & Public Opinion	2
Jour 384 Publications Editing	3
Jour 432 Feature Article Writing	3
Photo 281 Understanding Photography	3
Photo 485 Photojournalism	3
Sp 321 Interviewing	3

B. RADIO-TELEVISION NEWS OPTIONS

Course	Credits
Film 288 Basic Film—Super 8	3
RadTv 285 Radio Production I	2
RadTv 494 Radio-Television News	3
At least three of the following:	
Comm 372 Prin of Public Relations	3
Comm 445 Internship	1-8
Comm 492 Mass Comm & Public Opinion	2
Film 388 Cinematography for TV	3
Jour 424 Interpretive Writing	3
Photo 281 Understanding Photography	3
RadTV 141 Intro to Radio-TV Broadcasting	3
RadTV 292 Intro to TV Production	3
RadTV 387 Broadcast Writing	3
Sp 321 Interviewing	3

*Candidates for the B.S. degree are also reqd to complete at least 20 cr in a specialized field (or a logical combination of related courses) that will constitute a minor. The minor prog must be worked out with an adviser in the minor field and approved by the chairman of the Department of Journalism. In the event that the minor for the B.S. degree is one of the cognate fields, no more than 6 of the cr in the minor may be counted toward the 30-cr cognate-fields requirements.

RADIO-TELEVISION (B.A. or B.S.)

General L & S and School of Communication requirements for either the B.A. or B.S. degree, plus:

Course	Credits
Comm 490 Law of Mass Comm	3
Film 388 Cinematography for TV	3
RadTV 141 Intro to Rad-TV Broadcasting	3
RadTV 253 Recording & Broadcasting Tech	3
RadTV 285 Radio Production I	2
RadTV 292 Intro to TV Production	3
RadTV 385 Radio Prod II	2
RadTV 387 Broadcast Writing	3
RadTV 492 Advanced TV Production	4
RadTV 493 Broadcast Management	2
Additional courses in the School of Communication	12
Plus the following course areas beyond the general L & S requirements:	
Advertising	2-3
Speech	2
Humanities (B.S. degree only)	6
Social sciences	6

In addition to the above, candidates for the B.S. degree are reqd to complete at least 20 cr in a specialized subject-matter area (or logical combination of related courses) that will constitute a minor. The minor prog must be worked out with an adviser in the minor field and approved by the chairman of radio-television.

The following courses are not required, but should be used in the major's prog (or minor field) to emphasize professional broadcast areas of career interest:

Comm 360 Adver Media & Sales: Broadcast
Film 288 Basic Film—Super 8
RadTV 200 Seminar
RadTV 203 Workshop
RadTV 299 Directed Study
RadTV 322 Ed Use of Broadcasting
RadTV 400 Seminar
RadTV 403 Workshop
RadTV 494 Radio-TV News
RadTV 499 Directed Study

SPEECH (B.A. or B.S.)

General L & S and School of Communication requirements for either the B.A. or B.S. degree, plus the following courses (electives must be approved by the student's adviser):

Course	Credits
Comm 491 Propaganda	2
Sp 111 Great Speakers on Great Issues	2
Sp 131 Fundamentals of Speech	2
Sp 141 Interpersonal Communication	2
Sp 151 Oral Interpretation	2
Sp 211 Communication of Minorities	2
Sp 231 Informative Speech	2
Sp 331 Resolution of Conflict	2
Sp 362 Comm & the Small Group	3
Additional cr in speech	6
Related fields	20

School of Home Economics of the College of Letters and Science

Elmer K. Raunio, Dean of the College of Letters and Science; Gretchen L. Potter, Acting Director of the School of Home Economics (108 Mary Hall Niccolls Home Economics Bldg.).

A Department of Home Economics was established in 1902 at the University of Idaho. The School of Home Economics was organized in 1974 and functions as an administrative unit within the College of Letters and Science. As a professional and academic unit, the objectives of the School of Home Economics are to (1) prepare graduates for a variety of professional careers as home economists, (2) provide for the general or liberal education of the student for the development of responsible leadership and citizenship for effective participation in home and community life, and (3) offer general enrichment courses for all students.

Major Curricula

The curricula in the School of Home Economics provide opportunities for study in a variety of careers. Five majors at the undergraduate level are available with various options within each major. The majors leading to the degree of Bachelor of Science in Home Economics include: general home economics; home economics education; food and nutrition; clothing, textiles and design; and child development. The food and nutrition major includes the food and nutrition research option and the combined coordinated undergraduate program in dietetics with Eastern Washington University (Cheney) and the Spokane clinical facilities. In addition, the degree of Bachelor of Arts may be obtained in child development. With careful planning, double options in several majors may be achieved. (Consult the graduate bulletin for requirements for the M.S. and M.A.T. degrees.)

Certification

For information on membership in the American Dietetics Association, see the curriculum in food and nutrition.

Home economics education majors are eligible for vocational endorsement upon the completion of degree requirements. They may apply for teacher certification in the state of Idaho and are qualified to teach consumer-homemaking in grades 7 through 12. In addition, if students also elect the extension practicum, they are qualified to apply for positions with the Cooperative Extension Service.

Students may elect one of several options in the curriculum in child development which qualifies them to apply for state certification to teach in the public schools.

Home Economics Scholarships

Application forms and information about scholarships for home economics students may be obtained from the director of the School of Home Economics or from the Office of Student Financial Aid.

CHILD DEVELOPMENT (B.S.H.Ec.)

General L & S requirements for the B.S. degree, incl Psych 100 and Zool 119; plus:

Course	Credits
Ed 303 Kindergarten Ed	2-3
Ed 434 Children's Literature	3
HEc 109 Intro to Home Ec	1
HEc 113 Art	3
HEc 123 Textiles, *or* 124 Clothing, *or* 229 Clothing Analysis	2-3
HEc 234 Intro to Child Development	3
HEc 270 Nutrition	3
HEc 271 Foods, *or* 170 Family Nutrition & Meal Mgmt	2-3
HEc 334 Child Development	3
HEc 340 Family Relations	3
HEc 346 Family Resource Mgmt	2
HEc 409 Trends & Perspectives in Home Ec	1
HEc 433 Preschool Curriculum	3
HEc 434 Preschool Participation	6-9
HEc 435 Hist & Phil of Child Development	2
HEc 448 Consumer Education	3
Psych 205 Developmental Psychology	3
Sp 131 Fund of Speech, *or* 151 Oral Interp	2

Plus one of the following options:

A. Merrill-Palmer
B. Pacific Oakes
C. Additional major in the College of Education
D. Approved courses in sociology/social work
E. HEc 498 Home Ec Internship

CHILD DEVELOPMENT (B.A.)

General L & S requirements for the B.A. degree, incl Psych 100 and Zool 119, plus:

Course	Credits
Ed 303 Kindergarten Ed	2-3
Ed 434 Children's Lit	3
HEc 109 Intro to Home Ec	1
HEc 113 Art	3
HEc 234 Intro to Child Development	3
HEc 270 Nutrition	3
HEc 334 Child Development	3
HEc 340 Family Relations	3
HEc 346 Family Resource Mgmt	2
HEc 409 Trends & Perspectives in Home Ec	1
HEc 433 Preschool Curriculum	2
HEc 434 Preschool Participation	6-9
HEc 435 Hist & Phil of Child Development	2
HEc 436 Current Theories of Child Development	3-4
HEc 448 Consumer Ed	3
Psych 205 Developmental Psych	3
Sp 131 Fundamentals of Speech, *or* 151 Oral Interp	2

Plus one of the following options:

A. Merrill-Palmer
B. Pacific Oakes
C. Additional major in the College of Education
D. Approved courses in sociology/social work
E. HEc 498 Home Ec Internship

CLOTHING, TEXTILES AND DESIGN (B.S.H.Ec.)

Course	Credits
Art 101-102 Survey of Art	4
Bus 323 Principles of Advertising	3

Chem 103 Intro to Chem, *or* 111 Prin of Chem, *or* Phys 101 Fundamentals of Physical Sc 4
Eng 103 Basic Skills for Writing 3
Eng 104 Essay Writing 3
HEc 109 Intro to Home Economics 1
HEc 113 Art 3
HEc 123 Textiles 3
HEc 124 Clothing 3
HEc 229 Clothing Analysis 2
HEc 270 Nutrition 3
HEc 271 Foods 2
HEc 314 Weaving 3
HEc 324 Flat Pattern Study 3
HEc 326 Housing & Home Furnishings 3
HEc 334 Child Dev *or* 234 Intro to Child Dev 3
HEc 340 Family Relations, *or* 346 Family Resource Mgmt, *or* Soc 320 Marriage & the Family 2-3
HEc 409 Trends & Perspectives in Home Ec 1
HEc 413 Textile Design 2
HEc 423 Advanced Textiles 3
HEc 448 Consumer Education 3
Psych 100 Intro to Psychology 3
Soc 110 Intro to Sociology 3
Physical education activities 2
Science electives 8
Social sciences electives 3

Plus one of the following options:

A. CLOTHING OPTION

Course	Credits
HEc 327 Tailoring	3
HEc 329 Hist of Costume & Textiles	3
HEc 424 Original Design	3
HEc 429 Soc-Psych Aspects of Clothing	2

B. INTERIORS OPTION

Course	Credits
HEc 426 Hist of Interiors & Furnishings	3
HEc 428 Family Housing	2

FOOD AND NUTRITION (B.S.H.Ec.)

Course	Credits
Bact 250 General Bacteriology	4
Chem 111 Principles of Chemistry	4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
HEc 109 Intro to Home Economics	1
HEc 270 Nutrition	3
HEc 271 Foods	3
HEc 272 Food Management	2
HEc 409 Trends & Perspectives in Home Ec	1
HEc 470 Problems in Nutrition	3
HEc 474 Investigation of Foods	3
Math 140 College Algebra	3
Psych 100 Intro to Psychology	3
Soc 110 Intro to Sociology	3
Zool 119 Human Anatomy & Physiology	5
Physical education activities	2

Plus one of the following options:

A. GENERAL DIETETICS OPTIONS

Course	Credits
Anthr 120 Intro to Social Anthropology	3
ApSt 307 Principles of Statistics	3
Bus 413 Human Relations in Business	3
Chem 112 Inorganic Chem & Qual Analysis, *or* 114 General Chem	4-5
Chem 275 Carbon Compounds, *or* 277 Organic Chem	3
Chem 278 Organic Chemistry I Lab	1
Chem 380 Introductory Biochemistry	4
Econ 251 Principles of Economics	3
Engr 131 Digital Computer Programming	2
HEc 113 Art, *or* 123 Textiles	3
HEc 242 Household Equip, *or* 346 Family Resource Mgmt, *or* 448 Consumer Education	2-3
HEc 334 Child Development	3
HEc 384 Food Administration I	6
HEc 473 Community Nutrition	3

Recommended but not required:

HEc 124 Clothing	3
HEc 347 *or* 349 Home Management	3
HEc 487 Dietetics Practicum	8

B. COORDINATED UNDERGRADUATE PROGRAM OPTIONS

The same as option A, with the addition of:

Course	Credits
Ed 415 Educational Psychology	3
Eng 317 Tech & Engr Report Writing	2
HEc 371 Diet Therapy	4
HEc 372 Clinical Dietetics I	4.6
HEc 375 Intro to Clinical Dietetics	3
HEc 376 Advanced Nutrition	3.3
HEc 385 Food Administration II	5.3
HEc 472 Clinical Dietitics II	5.3
HEc 484 Food Systems Management I	4
HEc 486 Infant & Child Nutrition	2.3
HEc 488 Food Systems Management II	4

C. FOOD AND NUTRITION RESEARCH OPTIONS

Course	Credits
AnSc 305 Principles of Nutrition	3
Bact 402 Food & Applied Microbiology	4
Chem 112 Inorganic Chem & Qual Analysis	5
Chem 253 Quantitative Analysis	5
Chem 277, 278 Organic Chem I & Lab	4
Chem 372, 376 Organic Chem II & Lab	5
Math 180 Analytic Geom & Calculus I	4
Social sciences electives	6

Plus at least 15 cr selected from the following:

ApSt 307 Principles of Statistics	3
Biol 201 Intro to Life Sciences	4
Chem 302 Principles of Physical Chemistry	3
Chem 380 Introductory Biochemistry	4
Chem 481, 482, 483, 484 Biochem & Lab	10
Eng 317 Tech & Engr Report Writing	3
HEc 113 Art, *or* 123 Textiles	3
HEc 242 Household Equip, *or* 346 Family Resource Mgmt, *or* 448 Consumer Ed	2-3
HEc 334 Child Development	3
HEc 478 Recent Advances in Food	2
Math 190, 200 Analyt Geom & Calculus II, III	4-7
Zool 417 *or* AnSc 451 Endocrine Physiology	3
Proficiency in one foreign language equiv to completion of FL/FR 201-202, Interm French, *or* FL/GN 221-222, Interm German	0-8

GENERAL HOME ECONOMICS (B.S.H.Ec.)

Course	Credits
Bact 250 General Bacteriology, *or* 254 Public Health & Hygiene	3-4
Chem 102 Chem & the Citizen, *or* 103 Intro to Chem *or* 111 Prin of Chem, *or* Phys 101 Fundamentals of Physical Sc	3-4
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
HEc 109 Intro to Home Economics	1
HEc 113 Art	3
HEc 123 Textiles	3
HEc 124 Clothing	3
HEc 229 Clothing Analysis	2
HEc 270 Nutrition	3
HEc 271 Foods	3
HEc 272 Food Management	2
HEc 326 Housing & Home Furnishings	3
HEc 334 Child Development	3
HEc 340 Family Relations	3
HEc 346 Family Resource Management	2
HEc 347 *or* 349 Home Management	3
HEc 409 Trends & Perspectives in Home Ec	1
HEc 448 Consumer Education	3
HEc 470 Problems in Nutrition	3
Psych 100 Intro to Psychology	3
Soc 110 Intro to Sociology	3
Zool 119 Human Anatomy & Physiology	5

(Continued)

Physical education activities	2
Social sciences electives	3

Plus one of the following options:

A. GENERAL OPTION

Course	Credits
Foreign language or humanities	7-9

B. JOURNALISM OPTION

Course	Credits
Comm 372 Prin of Public Relations	3
Jour 121 News Writing	3
Jour 222 Reporting	3
Jour 354 News Editing	3
Jour 432 Feature Article Writing	3
Electives from journalism, photography, or radio-TV	7

C. BUSINESS OPTION

Course	Credits
Acctg 201 Prin of Accounting	3
Acctg 202 Managerial Accounting	3
Bus 321 Marketing	3
Econ 251-252 Prin of Economics	6
Business electives	6

HOME ECONOMICS EDUCATION (B.S.H.Ec.)

Course	Credits
Ed 201 Intro to Teaching	2
Ed 415 Educational Psychology	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
HEc 109 Intro to Home Economics	1
HEc 113 Art	3
HEc 123 Textiles	3
HEc 124 Clothing	3
HEc 229 Clothing Analysis	2
HEc 242 Household Equipment	3
HEc 270 Nutrition	3
HEc 271 Foods	3
HEc 272 Food Management	2
HEc 326 Housing & Home Furnishings	3
HEc 334 Child Dev, *or* 234 Intro to Child Dev	3
HEc 340 Family Relations	3
HEc 346 Family Resource Management	2
HEc 347 *or* 349 Home Management	3
HEc 352 Methods in Teaching Home Ec	3
HEc 409 Trends & Perspectives in Home Ec	1
HEc 448 Consumer Education	3
HEc 455 Challenges of Teaching Home Ec	3
HEc 470 Problems in Nutrition	3
Psych 100 Intro to Psychology	3
Soc 110 Intro to Sociology	3
Sp 131 Fundamentals of Speech, *or* 151 Oral Interp	2
Humanities electives	3
Social sciences electives (to include econ)	6
Physical education activities	2
Sc (incl one of more lab courses) cr to be taken in physical, biological, and bacteriological areas	12

Plus one of both of the following options:

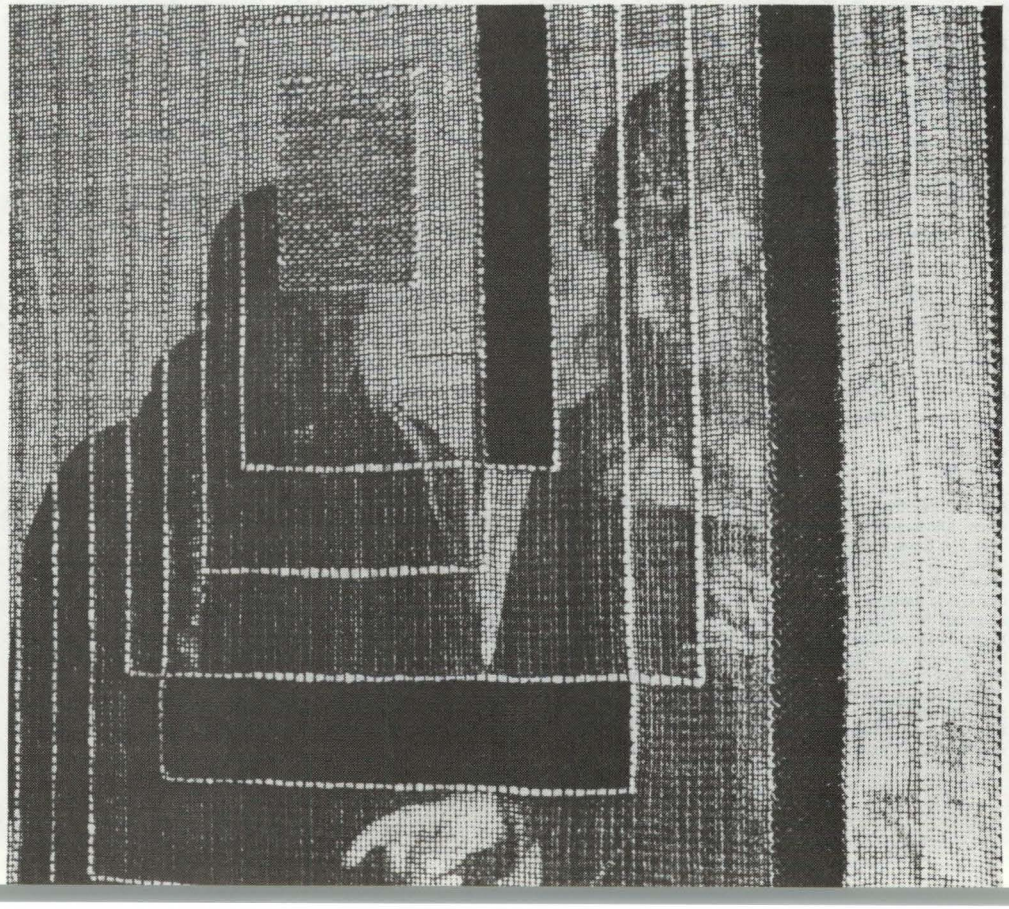
A. CLASSROOM TEACHING OPTION

Course	Credits
HEc 457 Student Teaching in HEc Class	6-9
VocEd 351 Principles of Voc Ed	2
VocEd 473 Intro to Adult Ed *or* 474 Psych of Adult Learners	3
VocEd 497 Coordination Techniques	3

Plus an approved 20-cr teaching minor in additional courses in home ec to attain a 45-cr major.

B. EXTENSION OPTION

Course	Credits
AgEd 348 Extension Methods	2
HEc 457 Student Teaching in HEc Class, *or* 458 Cooperative Extension Practicum	6-9



School of Music of the College of Letters and Science

Elmer K. Raunio, Dean of the College of Letters and Science; William A. Billingsley, Director of the School of Music (206 Music Bldg.).

A Department of Music was established at the University of Idaho in 1893. The School of Music was organized as an administrative unit within the College of Letters and Science in 1969 and serves as the state's preeminent center for undergraduate and graduate programs in musical performance. In addition, the School of Music, functioning both as a professional school and as an academic department within the College of Letters and Science, shares with the other senior institutions in the state system of higher education the responsibility to offer liberal studies in music as well as programs for the preparation of music teachers.

Students in the school learn through performance, listening, analysis, and creation. Curricular emphasis is on the understanding of musical style and techniques of all eras, including the present, and on achieving balance between the aesthetic and the practical.

The University of Idaho is accredited by the Northwest Association of Schools and Colleges and the National Council for the Accreditation of Teacher Education. As a full member of the National Association of Schools of Music, the School of Music maintains standards in accordance with those set by the association.

Facilities

The Music Building comprises faculty studio-offices, instrumental and vocal facilities, a record and score library, classrooms, a music education materials center, a record and tape listening center, a recital hall, and student lounges. A second building nearby houses private practice facilities. In addition, complete recording and radio-television facilities are available on campus. All equipment is maintained by professional staff. The school has two performance pipe organs and provides organ and grand piano practice instruments for students taking private lessons in these areas.

Performance Opportunities

The performing organizations in the School of Music are the University Symphony Orchestra, Idaho Chamber Orchestra, Concert Choir (Vandaleers), Band (two sections of Wind Ensemble, plus Concert Band, Vandal Marching Band, three sections of Jazz Lab Band, and pep bands), Chorus (University Singers and Women's Chorus), Opera Workshop, Collegium Musicum, Brass Choir, Percussion Ensemble, and numerous smaller ensembles—Madrigal Singers, string quartets, woodwind and brass quintets, etc. These groups are open to all students, and majors in areas other than music comprise as much as one-half of the membership in some of the organizations. In addition to their many concerts on campus, several of these groups participate in tours of Idaho and the Northwest.

Transfer Students

Because the various curricula in the School of Music are planned in continuity with basic courses taken during the first year, students planning to major in this school at the University of Idaho are strongly advised to enter the university as freshmen or enroll in a community college transfer program that is designed to parallel the requirements indicated below. Students transferring from other institutions with preparation differing from the university pattern may be admitted to an appropriate curriculum in music or music education; however, it may be necessary for such students to take more than the minimum number of credits for a degree.

Concerts and Recitals

The School of Music presents an annual series of concerts and recitals that includes faculty artists, oustanding students, student and faculty performing groups, and guest musical attractions. In addition, there is a regular series of daytime concerts in the Music Building. Most concerts are open to the public without charge; however, a small admission fee is charged for special events, such as opera and performances by certain visiting groups.

Financial Aids

Information about scholarships and financial aids for music students may be obtained from the director of student financial aid.

Major Curricula

The School of Music offers curricula leading to the degrees of Bachelor of Music, Bachelor of Arts, Master of Music, Master of Arts, and Master of Arts in Teaching.

The Bachelor of Music degree is offered with majors in vocal or instrumental performance, composition, instrumental music education, vocal music education, or a combination of vocal and instrumental music education. It is a professional music degree and is the normal precedent for graduate work in music.

The Bachelor of Arts is offered with majors in applied music (performance), music history and literature, and music theory. The B.A. emphasizes a broad liberal education and is neither professionally oriented nor the normal route to certification for public school music teaching.

General and specific requirements for the undergraduate curricula are listed below. Recommended four-year curriculum sequences are available from the office of the School of Music. Consult the catalog of the Graduate School for requirements for the M.A., M.Mus., and M.A.T. degrees.

General Requirements for All B.A. and B.Mus. Degrees

Keyboard Proficiency. Minimum keyboard proficiency for all music majors is met by satisfactory completion of MusC 133, Theory Keyboard Laboratory. Certain curricula may have additional requirements that are included in the School of Music Handbook. Students should confer with their adviser for specific requirements appropriate to their curriculum.

Academic Junior Standing (AJS). Each major in the School of Music must be admitted into AJS by the music faculty before he or she will be permitted to enroll in music courses at the 300 level. Normally, this occurs during the first semester of the sophomore year. Transfer students may not be admitted into AJS until 12 hours have been completed at the university, during which time the student was enrolled as a major in the School of Music; however, a transfer student may enroll in 300-level courses before being admitted to AJS if the normal sequence of courses would justify this procedure.

Upper-Division Standing (UDS). For an undergraduate to enroll in MusA 301, he or she must have passed the requirements of the major area; this involves a special jury examination and demonstrates the successful completion of the fundamentals of the student's major area of performance and the ability to continue improving in a manner that will lead to the performance requirements of the degree and the major emphasis.

Convocation. Majors in the School of Music are required to attend a specified number of musical events as a part of their musical development. In order to certify this attendance, registration in MusX 140, Convocation, is required during every semester until the requirement is fulfilled. It is a graduation requirement that all B.A. and B.Mus. candidates receive a passing grade in MusX 140 for seven semesters of their residence at the University of Idaho. Students will not be admitted to academic junior standing until they have passed three semesters of convocation (admittance to AJS normally occurs after the first semester of the sophomore year). Transfer students are expected to enroll in MusX 140 during their first registration, and to receive a passing grade in a specified number of semesters (to be determined when the student's program is set up).

BASIC REQUIREMENTS FOR THE B.A. DEGREE IN MUSIC

Course	Credits
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
MusC 133 Theory Keyboard Lab	1
MusC 141 Musicianship & Music Lit	3
MusC 142, 241, 242 Theory of Music I, II, III	9
Mus 341 20th-Century Music Theory & Lit	4
MusH 144, 243, 244 History of Music I, II, III	6
MusX 140 Convocation (seven semesters)	0
Physical education activities	2
Humanities (L & S humanities requirements, plus courses from art, arch, dance, lit, or theatre arts)	18
Science (L & S science requirement)	9-12
Social sciences (L & S social science requirement plus additional social sciences courses)	12
Foreign language (L & S foreign language requirement)	0-16

Note: Of the minimum of 128 cr reqd for the B.A. degree, at least 78 cr must be in courses *outside* of the School of Music.

MUSIC: APPLIED MUSIC (B.A.)

Basic requirements for the B.A. degree in music, plus:

Course	Credits
MusA 100, 101, 201, 301 (2 cr each semester, at least 4 cr in 301) Indiv Instruction	16
MusA 490 Senior Recital	0
One of the following courses	2-3
MusC 325 Composition	
MusC 327 Orchestration I	
MusC 331 Modal Counterpoint	
MusC 332 Tonal Counterpoint	
Period course to be selected from MusH 410-418	
Electives to total 128 cr for the degree	—

MUSIC: HISTORY AND LITERATURE (B.A.)

Basic requirements for the B.A. degree in music, plus:

Course	Credits
MusA 100, 101, 201, 301 (1 cr each semester) Individual Instruction	8
MusC 331 *or* 332 Modal & Tonal Counterpoint	2
MusC 327 Orchestration I	2
Period courses to be selected from MusH 410-418	4-6
Music history electives	2
Electives to total 128 cr for the degree	—

MUSIC: THEORY (B.A.)

Basic requirements for the B.A. degree in music, plus:

Course	Credits
MusA 100, 101, 201, 300 (1 cr each semester) Indiv Instr	8
MusC 331, 332 Modal & Tonal Counterpoint	4
MusC 325 Composition	2
MusC 327 Orchestration I	2
MusC 427 Orchestration II	2
Electives to total 128 cr for the degree	—

BASIC REQUIREMENTS FOR THE B.MUS. DEGREE

Course	Credits
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Physical education activities	2
Large performance ensembles—to be selected from MusA 103, 104, 105, 106, 303, 304, or 306 (registration is normally reqd during the first 2 yrs of residence; registration in some performance ensemble, large or small, is reqd throughout the student's first eight semesters)	4
Elective ensembles—from MusA 265, 266, 280, 365, 366, or 480 (additional large-ensemble cr may be elected from MusA 103, 104, 105, 106, 303, 304, 305, or 306 to satisfy this requirement)	2
MusA 100, 101, 201, 301 Indiv Instr (major area)	12*
MusA 145 Piano Class	1
MusC 139, 140, 239, 240 Aural Skills I, II, III, IV	4
MusC 141 Musicianship & Music Literature	3
MusC 142, 241, 242 Theory of Music I, II, III	9
MusH 321-322 Music in Western Civilization	6
MusX 140 Convocation (seven semesters)	0

*To fulfill the basic requirements for the B.Mus. degree, vocal music ed majors who are preparing to teach solely at the elem-school level are only reqd to achieve soph-level proficiency and pass 6 cr in indiv instruction.

MUSIC: INSTRUMENTAL PERFORMANCE (B.Mus.)

Basic requirements for the B.Mus. degree, plus the specific requirements in one of the three sections below. It is strongly recommended that instrumentalists elect literature or pedagogy courses appropriate to their major fields.

A. KEYBOARD

Course	Credits
MusA 100, 101, 147-148, 151, *or* 201 Indiv or Class Instr (secondary fields)	4
MusA 301 Indiv Instr (major)	12
MusA 387 Conducting I (recommended)	0-2
MusA 490 Senior Recital	0
Additional elective ensemble performing groups	2
MusH 431 and/or 432 Piano Literature	2-4
MusT 433 Piano Pedagogy	2
Courses acceptable toward the L & S general requirements for the B.A. degree (not counting courses in music, physical education, or Eng 103, 104)	26
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-6 cr; MusC, 6-12 cr; MusH, 4-12 cr; MusT, 0-6 cr; MusX, 0-6 cr)	18
Electives to total 128 cr for the degree	—

B. WOODWINDS

Course	Credits
MusA 100, 101, 201 Indiv Instr (3 secondary woodwinds) including, at a minimum: MusA 201 (1st secondary woodwind), 1 cr; MusA 101 (2nd secondary woodwind), 1 cr; MusA 101 (3rd secondary woodwind), 1 cr	3-9
MusA 305, 306, 365 Large or small ensemble (principal woodwind)	1
MusA 105, 106, 265 Large or small ensemble (1st secondary woodwind)	2
MusA 105, 106, 265 Large or small ensemble (2nd secondary woodwind)	1
MusA 105, 106, 265 Large or small ensemble (3rd secondary woodwind)	1
MusA 301 Indiv Instr (principal woodwind)	2
MusA 387 Conducting I	2
MusA 490 Senior Recital (on at least 2 instruments, one of which must be flute, oboe, or bassoon)	0
MusT 252 Reed Techniques	1
MusT 254 Flute Techniques	1
MusT 438 Practicum (in applied performance studies or music education)	2
Courses acceptable toward the L & S general requirements for the B.A. degree (not counting courses in music, physical education, or Eng 103, 104)	26
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-6 cr; MusC, 6-12 cr; MusH, 6-12 cr; MusT, 0-6 cr; MusX, 0-6 cr)*	24
Electives to total 128 cr for the degree	—

*Indiv instruction and large or small ensembles may be applied to the general electives, but are not applicable to this requirement.

C. OTHER ORCHESTRAL INSTRUMENTS OR GUITAR

Course	Credits
MusA 100, 101, 146, 147-148, 151, 201, *or* 245-246 Indiv or Class Instr (secondary fields)	0-4
MusA 301 Indiv Instr (major)	12
MusA 265, 266, 365, 366 Ensemble	2
MusA 387 Conducting I	2
MusA 490 Senior Recital	0
Additional elective ensemble performing groups	2
Courses acceptable toward the L & S general requirements for the B.A. degree (not counting courses in music, physical education, *or* Eng 103, 104)	26
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-6 cr; MusC, 6-12 cr; MusH, 6-12 cr, MusT, 0-6 cr, MusX 0-6 cr)	24
Electives to total 128 cr for the degree	—

MUSIC: VOCAL PERFORMANCE (B.Mus.)

Basic requirements for the B.Mus. degree, plus:

Course	Credits
MusA 100, 101, 146, 151, 201, *or* 245-246 Indiv or Class Instr (secondary fields)	4
MusA 301 Indiv Instr (major)	12
MusA 387 Conducting I	2
MusA 490 Senior Recital	0
Additional elective ensemble performing groups	2
MusH 435 Solo Vocal Literature	2
MusT 437 Vocal Pedagogy	2
Foreign lang (two yrs of one language or one yr each of two languages)	16
Courses acceptable toward the L & S general requirements for the B.A. degree (not counting courses in music, physical education, *or* Eng 103, 104; however, ThA 105, 272, and 407 may be counted)	10
Additional music electives (to be selected from courses in the 300-499 series in the following proportions; MusA, 0-4 cr; MusC, 6-12 cr; MusH, 6-12 cr; MusT, 0-4 cr; MusX, 0-4 cr)	18
Electives to total 128 cr for the degree	—

MUSIC: COMPOSITION (B.Mus.)

Basic requirements for the B.Mus. degree, plus:

Course	Credits
*MusA 100, 101, *or* 201 Indiv Instr (piano)	0-4
MusA 387 Conducting I	2
MusC 325 Composition	2
MusC 327 Orchestration I	2
MusC 331, 332 Modal & Tonal Counterpoint	4
MusC 427 Orchestration II	2
MusT 251, 252, 253, 254 Instr Tech	4
Additional composition (from MusC 200 and/or 400)	6
Courses acceptable toward the L & S general requirements for the B.A. degree (not counting courses in music, physical education, or Eng 103, 104)	26
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-4 cr; MusC, 4-8 cr; MusH, 6-12 cr; MusT, 0-4 cr; MusX, 0-6 cr)	14
Electives to total 128 cr for the degree	—

*Competence at the piano should be viewed as an essential tool of the composer.

MUSIC EDUCATION: VOCAL (B.Mus.)

Basic requirements for the B.Mus. degree, plus completion of one of the two sections below:

A. PREPARATION FOR JR.-SR. HIGH SCHOOL MUSIC TEACHING

Course	Credits
MusA 100, 101, 146, 151, 201, *or* 245-246 Indiv or Class Instruction (secondary fields)	5-9
MusA 301 Individual Instruction (major)	2-4
MusA 387 Conducting I	2
Additional elective ensemble performing groups	2
MusT 381 Elementary School Music Methods	3
MusT 383 Principles of Music Teaching	3
MusT 385 Choral Music in Secondary Schools	2
MusX 283 Diction for Singers	2
Ed 201 Intro to Teaching	2
Ed 314 Strategies for Teaching	2
Ed 432 Practicum: Music Teaching	9
Ed 445 Proseminar in Teaching	1
Psych 100 Intro to Psychology	3
Psych 205 *or* Ed 415 Developmental *or* Ed Psych	3
Additional electives in Eng composition *and/or* lit	6
Social sciences electives	6
Science *and/or* mathematics electives	8
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-4 cr; MusC, 2-6 cr; MusH, 2-6 cr; MusT, 0-4 cr; MusX, 0-4 cr)	8
Electives to total 128 cr for the degree	—

B. PREPARATION FOR ELEMENTARY SCHOOL MUSIC TEACHING

Note: Students who choose this program must enroll in *vocal* ensembles to fulfill the elective ensembles under the basic requirements for the B.Mus. degree.

Course	Credits
MusA 201 Individual Instruction	2
MusA 146, 245-246 Piano Class	3
MusA 147-148 Voice Class	2
MusA 387 Conducting I	2
MusT 381 Elementary School Music Methods	3
MusT 383 Principles of Music Teaching	3
MusT 481 New Concepts in Elementary Music Teaching	3
Ed 201 Intro to Teaching	2
Ed 314 Strategies for Teaching	2
Ed 432 Practicum: Music Teaching	9
Ed 445 Proseminar in Teaching	1
Ed 428 Audiovisual Aids	3
Ed 434 Children's Literature	3
Psych 100 Intro to Psychology	3
Psych 205 Developmental Psychology	3
Additional electives in Eng composition *and/or* lit	6
Social sciences electives	6
Science *and/or* mathematics electives	8
Sp 151 Oral Interpretation	2
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-4 cr; MusC, 2-6 cr; MusH, 2-6 cr; MusT, 0-4 cr; MusX, 0-4 cr)	7
Additional electives to total 128 cr for the degree	—

Strongly recommended, but not required:

Ed 415 Educational Psychology	3

MUSIC EDUCATION: INSTRUMENTAL (B.Mus.)

Basic requirements for the B.Mus. degree, plus:

Course	Credits
MusA 100, 101, 146, 147-148, 151, 201, *or* 245-246 Indiv or Class Instr (secondary fields)	5-9
MusA 301 Indiv Instr (major)	2-4
MusA 387 Conducting I	2
Additional elective ensemble performing groups	2
MusT 251, 252, 253, 254 Instrument Tech	4
MusT 381 Elem School Music Methods	3
MusT 383 Prin of Music Teaching	3
MusT 386 Instrumental Mus in Sec Schools	2
Ed 201 Introduction to Teaching	2
Ed 314 Strategies for Teaching	2
Ed 432 Practicum: Music Teaching	9
Ed 445 Proseminar in Teaching	1
Psych 100 Intro to Psychology	3
Psych 205 *or* Ed 415 Developmental *or* Ed Psych	3
Additional electives in Eng composition *and/or* lit	6
Social sciences electives	6
Science *and/or* mathematics electives	8
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-4 cr; MusC, 2-6 cr; MusH, 2-6 cr; MusT, 0-4 cr; MusX, 0-4 cr)	8
Electives to total 128 cr for the degree	—

MUSIC EDUCATION: VOCAL-INSTRUMENTAL (B.Mus.)

Basic requirements for the B.Mus. degree, plus:

Course	Credits
MusA 100, 101, 146, 147-148, 151, 201, *or* 245-246 Indiv or Class Instr (secondary fields)	5-9
MusA 301 Indiv Instr (major)	2-4
MusA 387 Conducting I	2
Additional elective ensemble performing groups	2
MusT 251, 252, 253, 254 Instrument Tech	4
MusT 381 Elem School Music Methods	3
MusT 383 Prin of Music Teaching	3
MusT 385 Choral Mus in Sec Schools	2
MusT 386 Instrumental Mus in Sec Schools	2
Ed 201 Introduction to Teaching	2
Ed 314 Strategies for Teaching	2
Ed 432 Practicum: Music Teaching	9
Ed 445 Proseminar in Teaching	1
Psych 100 Intro to Psychology	3
Psych 205 *or* Ed 415 Developmental or Ed Psych	3
Additional electives in Eng composition *and/or* lit	6
Social sciences electives	6
Science *and/or* mathematics electives	8
Additional music electives (to be selected from courses in the 300-499 series in the following proportions: MusA, 0-4 cr; MusC, 2-4 cr; MusH, 2-4 cr; MusT, 0-4 cr; MusX, 0-4 cr)	8
Electives to total 128 cr for the degree	—

College of Mines and Earth Resources

Maynard M. Miller, Dean (206 Mines Bldg.); Charles J. Smiley, Associate Dean; Terry R. Howard, Secretary of the College Faculty.

The College of Mines and Earth Resources (then called "School of Mines") was established in 1917 as an administrative unit of the university. There are three academic departments in the college, the Departments of Geography, of Geology, and of Mining Engineering and Metallurgy, and three other administrative divisions, the Glaciological and Arctic Sciences Institute, the Bureau of Mining Research, and Cart-O-Graphics

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 our various disciplines; the date following each is the year in which this degree was first conferred. 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. 1921, M.S. 1922, Ph.D. 1964); geological engineering (B.S. 1935, M.S. 1940); geography (B.S. 1958, M.S. 1968); hydrology (M.S. 1970).

In addition to the advanced degrees listed above, the Graduate School offers work 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.

The College of Mines and Earth Resources offers a full spectrum of courses that pertain to the earth, to man, and his environment. *Geology,* the "science of the earth" is, to some extent, basic to the other disciplines; it is such a broad subject, however, that most geologists specialize in one branch, paleobotany, petrology, etc. *Geological engineering* is the application of engineering principles to related geologic problems such as location of roads, damsites, and reservoirs. *Hydrology* is concerned with water; surface water, underground water, and water in the atmosphere. Much work is underway on pollution control and land-use planning.

Mining engineering involves more than just the technical processes of removing rock and ore from the earth's surface. For example, rock mechanics, geology of ore deposits, valuation of mineral deposits, mineral economics, and mine ventilation are included; very important also are mine-pollution control and land-reclamation techniques. *Metallurgy* is concerned with extracting metals from their ores and producing the myriad shapes of metals and alloys that are used in industry. Today much work is being done in two areas: (1) the development of metallurgical processes that will eliminate pollution of air and water, and (2) a search for practical methods of recycling scrap metal.

Integrating the physical and social sciences, *geography* considers environmental, economic, resource, political, urban, and cultural issues in such areas as regional studies, spatial analysis, and planning. In addition, the department participates actively in the training of teachers of geography, earth science, and social science. The department's program in cartography (map design and production) provides several computer-oriented courses, including work in computer mapping.

The Bureau of Mining Research conducts research on applied problems in the various academic disciplines of the college. This permits the staff to become involved with current problems in the mineral industry and provides a research atmosphere for students in the college. Major objectives of the bureau are: (1) to act as a liaison between the academic and industrial worlds, and (2) to meet the needs of the people of the state as represented by the various departments of state and local governments.

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 may also serve other agencies in the state and region.

Equipment and Facilities

Mining Engineering. Facilities and equipment include a rock mechanics and geophysical laboratory equipped with polariscope, strain recorder, electrical resistivity and magnetic units, and other instruments for stress-strain studies of rock structures. Mine surveying instruments, ventilation apparatus, and other mining engineering tools are available. Illustrative material includes maps, drawings, films, and slide collections that show mining methods and practices. The greatest assets for laboratory or graduate studies in mining engineering, however, are the deep mines in the Coeur d'Alene district. Mining students who are interested in practical investigations or basic research can usually arrange to gather necessary data at the best source—an operating mine.

Metallurgical Engineering. The extractive metallurgy laboratories are equipped for class instruction and research in ore dressing and process metallurgy. Equipment includes crushers, ball mills, pulverizers, screens and screen shakers, flotation machines, leaching equipment, and various other concentrating machines including a Carpco induced-roll

magnetic separator and a high-intensity electrostatic separator. Equipment is available for modern instrumental analysis as well as wet chemical and fire assaying. Computer facilities, including a 16K bit microprocessor with series and parallel I/O, allow training in data logging, on-line optimization, and process control techniques.

Physical metallurgy includes the metallography laboratory with facilities for polishing and etching metals, alloys, minerals, and ceramic materials for macroscopic and microscopic examination, a variety of microscopes for visual examination of specimens, and a metallograph, cameras, and darkroom for photographic works. The x-ray diffraction laboratory is equipped to handle a large variety of problems in metallurgy, ceramics, and mineralogy, such as identification of alloy phases and minerals, texture studies, and phase diagram determinations. Other equipment includes melting furnaces, forging hammer, and rolling mill for specimen preparation, heat treating and thermal analysis furnaces, physical and mechanical test instruments, and ceramics fabrication equipment.

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 flurorescence equipment, and an atomic absorption spectrophotometer. The electron microprobe of the Idaho Bureau of Mines and Geology is available to advanced students. Also available are several computers, resistivity survey equipment, hammer seismograph, soil drilling and sampling kits, and water-level recorders.

Research laboratories are equipped for work in applied geochemistry, economic geology, paleontology, photogeologic analysis, remote sensing, engineering geology, 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, geomorphology, and glaciology.

Geography. The department maintains a modern cartographic laboratory with a process camera, plate maker, phototypesetter, and numerous other pieces of arts equipment. A Numonics digitizer is also available in the department for use in class instruction and research. Through the university's Computer Services, the department has access to an IBM 370, model 145, a Calcomp digital plotter, optical scanning equipment, several terminals in various locations around campus, and a Tektronic graphics terminal. The University Library maintains a special collection of some 65,000 maps, and the department has its own collection for classroom teaching.

Peschel Collection. The college has a unique art collection on permanent loan from the heirs of William M. Peschel who lived for many years at Lewiston, Idaho. This collection contains prints and water colors illustrating parade uniforms worn by mining officials and workers in Germany about the seventeenth century. In addition to the illustrations, the collection includes ceremonial axes and canes that were carried by these officials.

Scholarships and Loan Funds

Students having a high academic standing in high school or college should refer to the "Financial Aid" section in part 2 of this catalog. The Hecla-Bunker Hill Scholarships are available to students in the college, but not exclusively to them. The following are exclusively for students in the College of Mines and Earth Resources: Mineral Industries Education Foundation—five scholarships that pay $500 each year for four years (open only to entering freshmen in mining engineering or metallurgical engineering); ASARCO Foundation—one $750 scholarship (open to a currently enrolled sophomore or junior); Idaho Mining Memorial Scholarship (open to entering students); A. E. Larson Scholarships (open to currently enrolled students); W. W. Staley Scholarship (open to currently enrolled students in mining engineering); out-of-state tuition waivers (open to new students who are not residents of Idaho); Albert Hall Featherstone Scholarships (open to currently enrolled graduate students); the Laney and J. J. Day loan funds are restricted to students enrolled in the College of Mines and Earth Resources. For further information, write to the Office of Student Financial Aid. University of Idaho.

Teacher Education Program

Students in the College of Mines and Earth Resources who are preparing for secondary school teaching should consult the information about the Teacher Education Program further on in this part 4 of the catalog.

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 below, the programs of study in this college require from 128 to 136 credits. The curricula include the departmental and general requirements as set forth above.

GEOGRAPHY (B.S.Geog.)

Course	Credits
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Geog 100, 101 Man's Physical Environment & Lab	4
Geog 140 Economic Geography	3
Geog 165 Human Geography	3
Geog 250 World Regional Geography	3
Geog 380 Cartography	4
Geog 490 Trends in Geography	3
One 3-cr geog elective selected from *each* of the following series: 315, 401; 430-447, 357-365, 455	9
Additional approved electives in geography	9
Econ 251-252 Prin of Econ; *or* Geol 101, 102 Physical Geol & Lab, and *either* Phys 101 Fundamentals of Physical Sc, *or* Phys 113, 115 General Physics & Lab	6-8
One yr college-level foreign lang; *or* Geog 370 Spatial Anal; *or* Engr 131 Digital Computer Programming *and* one of the following: ApSt 307, Bus 231, or Psych 217	3-8
Physical education activities	2
Approved electives in related fields	24
Approved electives to total 128 cr for the degree	—

GEOGRAPHY (B.A. or B.S.)

See these curricula in the College of Letters and Science section.

GEOLOGY (B.S.Geol.)

Course	Credits
ApSt 307 Principles of Statistics	3
Biol 100 Man & the Environment, *or* 201 Intro to the Life Sciences	4
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qualitative Analysis	5
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Eng 317 Technical & Engineering Report Writing	3
Geog 380 Cartography	4
Geol 101, 102 Physical Geology & Lab	4
Geol 106, 107 Historical Geology & Lab	4
Geol 211 Ancient Life, *or* 417 Adv Paleontology	3-4
Geol 255 Mineralogy	2
Geol 265 Lithology	2
Geol 301 Field Geology & Report Writing	6
Geol 335 Geomorphology	3
Geol 345 Structural Geology	3
Geol 365 Ingenous & Metamorphic Rocks	3
Geol 425 Sedimentology	2
Geol 426 Stratigraphy	3
Geol 465 Optical Mineralogy	3
Geol 467 Petrography	3
Math 140 College Algebra	3
Math 180 Analytic Geometry & Calculus I	4
Phys 113-114-115-116 Gen Phys & Lab; *or* 220, 221, 222 Engr Physics I, II, III; *or* upper-div courses in biol with perm of adviser	8-9
Physical education activities	2
Humanities and/or social sciences electives	12

Plus one course in computer programming, the equiv of one year of college-level study of a foreign language, and approved electives to complete the total of 128 cr for the degree.

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. This curriculum is administered by the Dept of Geology.

Course	Credits
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis, *or* 114 General Chemistry	4-5
Chem 302 Principles of Physical Chemistry, *or* ES 321 Thermodynamics & Heat Transfer	3
CE 112 Elementary Surveying	2
CE 486 Engineering Economy	3
Econ 251 Principles of Economics	3
EE 200 Systems & Circuits I	3
Engr 120-121 Engineering Analysis & Design I, II	4
Engr 131 Digital Computer Programming	2
ES 211 Intro to Mechanics	4
ES 221 Dynamics of Rigid Bodies	2
ES 320 Fluid Mechanics	3
ES 340 Mechanics of Materials	3
Eng 103 Basic Skills for Writing	3
Eng 104 Essay Writing	3
Geol 101, 102 Physical Geology & Lab	4
Geol 106, 107 Historical Geology & Lab	4
Geol 255 Mineralogy	2
Geol 265 Lithology	2
Geol 301 Field Geol & Report Writing	6
Geol 335 Geomorphology	3
Geol 345 Structural Geology	3
Geol 365 Igneous & Metamorphic Rocks	3
Geol 425 Sedimentology	2
GeolE 435 Intro to Geological Engr	3
Math 180, 190, 200 Analyt Geom & Calculus	11
Math 310 Ordinary Differential Equations	3
Phys 221, 222 Engr Physics, *or* 113-114-115-116 General Phys & Lab	6-8
Humanities and/or social sciences electives	15

The following courses are recommended electives for those students wishing to specialize in the areas indicated:

Mineral Exploration

GeolE 475 Mineral Deposits	4
GeolE 476 Explorational Geol, *or* ID485 Geochem Exploration	3
Min 103 Elements of Mining	2
Min 401 Rock Mechanics	3

Construction

CE 460 Soil Mechanics	3
GeolE 436 Geological Engr Design	3
Min 103 Elements of Mining, *or* 391 Mining Prin	2-3
Min 401 Rock Mechanics	3

Hydrology

AgE 351 Hydrology	2
CE 460 Soil Mechanics	3
Geol 409 Ground Water	3
GeolE 436 Geological Engr Design	3

The minimum number of credits for the degree is 134.

METALLURGICAL ENGINEERING (B.S.Met.E.)

Note: A sequence of technical electives should be chosen before the first technical elective course is taken. All electives must be approved by the student's adviser.

Course	Credits
ChE 323 Material & Energy Balances	3
Chem 111 Principles of Chemistry	4
Chem 112 Inorganic Chem & Qual Analysis, *or* 114 General Chemistry	4-5
Chem 305-306 Physical Chemistry	6
EE 200 Systems & Circuits I	3
EE 314 Electronics & Control Systems	4

(Continued)

Engr 101 Engineering Graphics 2
Engr 120-121 Engr Analysis & Design I-II 4
Engr 131 Digital Computer Programming 2
ES 211 Intro to Mechanics 4
ES 320 Fluid Mechanics 3
ES 321 Thermodynamics & Heat Transfer 3
ES 340 Mechanics of Materials 3
Eng 103 Basic Skills for Writing 3
Eng 104 Essay Writing 3
Eng 317 Tech & Engr Rpt Wrtg, *or* 313 Bus Wrtg 3
Math 180, 190, 200 Analyt Geom & Calculus 11
Math 310 Ordinary Differential Equations 3
Met 102 Materials & Their Manufacture 1
Met 201 Elements of Materials Science 3
Met 202 Apparatus & Practices 2
Met 308 Intro to Metallurgic Thermodynamics 3
Met 400 Seminar 2
Met 412 Mechanical Metallurgy 2
Met 413 Physical Metallurgy 4
Met 414 Metallurgical Design 2
Met 441 Ore Dressing 4
Met ID442 Extractive Metallurgy 4
Min 103 Elements of Mining 2
Phys 221, 222 Engr Physics II, III 6
Physical education activities 2
Math elective (one upper-div course or equiv) 3
Humanities and social science electives 17
Metallurgy electives 3
Technical electives 7-8

The minimum number of credits for the degree is 136.

MINING ENGINEERING (B.S.Min.E.)

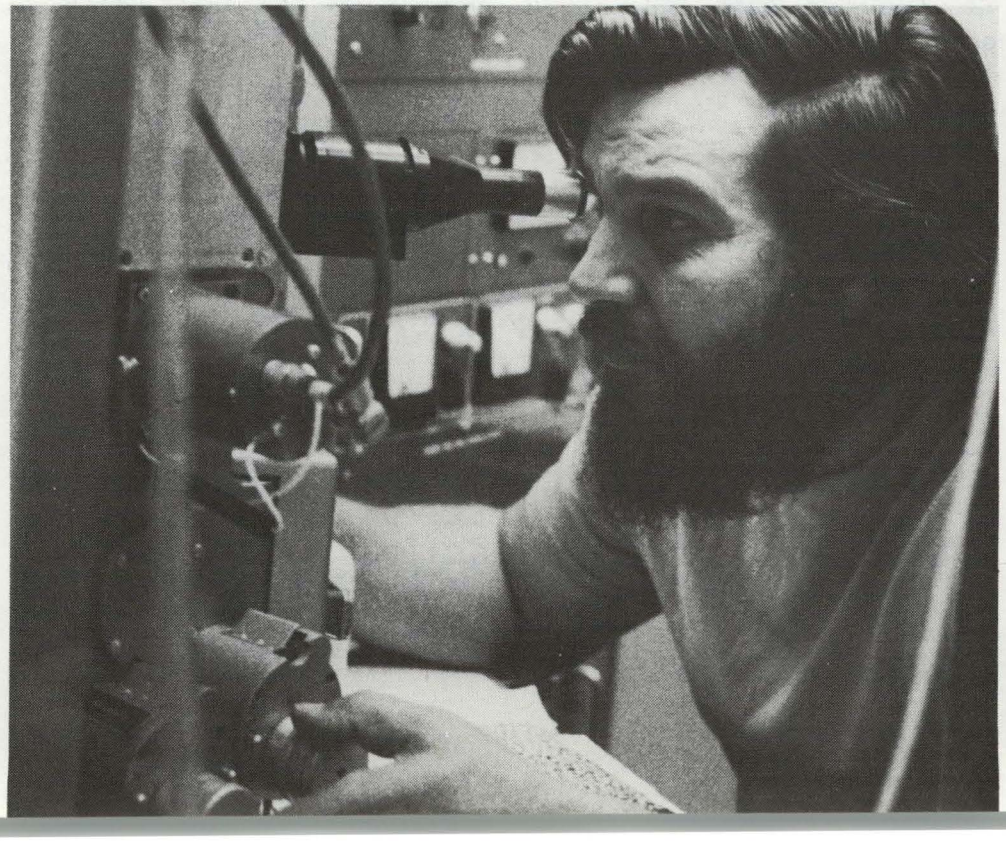
As part of a cooperative program with Oregon State University, Oregon resident students may enroll in this program and will **not** be charged out-of-state tuition by UI. This curriculum is administered by the Dept of Mining Engr and Metallurgy.

Note: Approved field experience, appropriate summer employment, or an applied course in mine surveying and geologic mapping is reqd before graduation.

Course **Credits**

Chem 111 Principles of Chemistry 4
Chem 114 General Chemistry 4
CE 211 Engineering Measurements 4
EE 200 Systems & Circuits I 3
EE 314 Electronics & Control Systems, *or* 324 Electrical Machinery 3-4
Engr 101 Engineering Graphics 2
Engr 120-121 Engr Analysis & Design 4
Engr 131 Digital Computer Programming 2
ES 211 Intro to Mechanics 4
ES 320 Fluid Mechanics 3
ES 321 Thermodynamics & Heat Transfer 3
ES 340 Mechanics of Materials 3
Eng 103 Basic Skills for Writing 3
Eng 104 Essay Writing 3
Eng 317 Tech & Engr Rpt Wrtg, *or* 313 Bus Wrtg 3
Geol 101, 102 Physical Geol & Lab 4
Geol 255 Mineralogy 2
Geol 265 Lithology 2
Geol 345 Structural Geology 3
Math 180, 190, 200 Analyt Geom & Calculus 11
Math 184 Elements of Linear Algebra, *or* approved upper-div math course, *or* equiv 2-3
Math 310 Ordinary Differential Equations, *or* approved upper-div math course, *or* equiv 3
Met 201 Elements of Materials Science 3
Met ID442 Extractive Met, *or* 441 Ore Dressing 4
Min 103 Elements of Mining 2
Min 218 Mine Rescue & First Aid 1
Min 352 Mine Management 3
Min 372 Mine Ventilation II: Quantitative & Qual Control 2
Min 390 Mine Development 2
Min 391 Mining Principles 3
Min 401 Rock Mechanics 3
Min 470 Mine Services 3
Phys 221, 222 Engr Physics II, III 6
Physical education activities 2
Tech electives in mining engr/metallurgy (with the approval of the dept head, one of these courses may be from another dept) 7
Approved humanities and social sciences courses (consult dept office for official list) 17

The minimum number of credits for the degree is 136.



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 current time schedule. In addition, the two schools cooperate in programs in medicine and veterinary medicine.

Medical Education (WAMI Program)

Guy R. Anderson, Director, Idaho WAMI Program (112 Life Sc. Bldg.).

In the WAMI Program, offered by the University of Washington School of Medicine (UWSM) and selected universities and communities in Washington, Alaska, Montana, and Idaho (WAMI), medical students from Idaho receive the first year of their medical training at the University of Idaho. Students attend classes at the University of Idaho and Washington State University, thus benefiting from a large group of instructors and varied selection of elective courses; laboratories and other facilities for individual work are available at both institutions. First-year students also have the opportunity to work with local physician-preceptors. After completing the second year of the basic curriculum at the UWSM, the student continues in a program of clinical pathway electives during the third and fourth years that may be taken entirely at the UWSM or that may include participation in any of fourteen UWSM WAMI community clinics in the four participating states. Six-week clerkships in these community clinics, under the auspices of the UWSM and supervised by local physicians at the office or in the hospital, offer the student a realistic approach to the problems of medical practice.

Veterinary Medical Education

Floyd W. Frank, Dean, Idaho Faculty of the Northwest College of Veterinary Medicine (22 Veterinary Science Bldg.).

The University of Idaho cooperates with Washington State University in a program of veterinary medical education, research, and service. In this program, students from Idaho take the first three years of professional training in veterinary medicine at Washington State University; faculty members of both universities offer instruction in the professional and academic curricula. In the fourth year of the program, students receive part of their clinical training at a veterinary medical facility at Caldwell, Idaho, where they can specialize in preventive food-animal medicine. Cooperative graduate programs leading to M.S. and Ph.D. degrees are also available. Applicants for admission to the professional curriculum should address the Director of Admissions, Washington State University; applicants for admission to the academic curricula should address the graduate schools of both universities.

Idaho National Engineering Laboratory

In cooperation with other universities in the state and region, with the Energy Research Development Administration, and with others, the University of Idaho participates in graduate and undergraduate programs at the Idaho National Engineering Laboratory at Idaho Falls, Idaho. For more information, see "Special Programs" further on in this part 4 of the catalog.

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 Energy Research and Development Administration for graduate students and faculty to spend periods of time, up to one year, at a number of these laboratories pursuing research projects.

Interuniversity Program in Public Administration

Robert H. Blank, Chairman, Department of Political Science and Public Affairs Research (207 Admin. Bldg.).

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, administrative theory, organization and behavior, public management techniques, and administrative law, may be taken at any of the participating institutions without restriction. For further information, consult the chairman of the Department of Political Science and Public Affairs Research.

University Year for Action Program (UYA)

R. Ronald Wells, Director (109 Continuing Education Bldg.).

In the UYA program, a student may earn university credits outside the classroom while working full time for 12 months on a project that

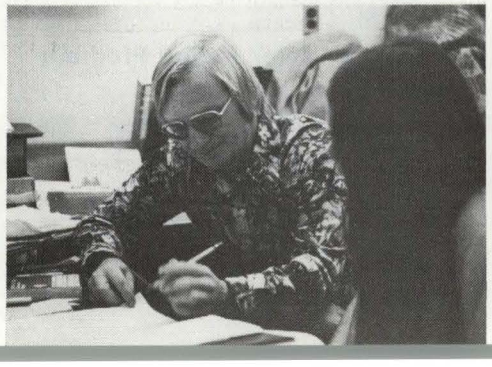
relates to the student's academic field. At the same time, UYA projects benefit Idaho by providing assistance from the university in addressing problems concerning disadvantaged people and their environment.

Cities, counties, state agencies, and nonprofit organizations across the state sponsor UYA projects. The only limitation on these "service-learning" projects is that they must somehow serve the needs of the disadvantaged and emphasize program development, research, or evaluation. Filling a normal staff position in an agency, if the position is primarily responsible for administering an existing program, is not suitable as a UYA project. Examples of past projects include working with state hospitals in mental health research, establishing foster home programs, working with city planning commissioners to develop plans to provide better living environments for the disadvantaged, developing recreation programs for disadvantaged youth, providing services for senior citizens, and setting up day-care programs for low-income mothers.

During the UYA year, students receive one calendar year of academic credit for their full-time work with sponsors, $200 monthly living allowance, reduction in university fees, and complete medical coverage. Students do not attend any regularly scheduled classes, but are provided assistance and guidance by the university faculty.

Students in the following areas are eligible to apply to the UYA program: the Colleges of Agriculture; Engineering; Forestry, Wildlife and Range Sciences; Letters and Science (currently limited to the following subjects—anthropology, architecture, art, bacteriology, child development, communication, home economics, interior design, journalism, museology, philosophy, psychology, political science, religious studies, social science, sociology, and theatre arts); and Mines and Earth Resources (currently limited to geography); and General Studies.

Students interested in applying to the UYA program should call or write the UYA director (109 Continuing Education Bldg.; 885-7983) for the current list of available projects. Final approval of students, projects, and each student's academic-credit program is determined by the faculty of the department(s) concerned.



Interinstitutional Doctoral Program

An interinstitutional doctoral program in home economics (child development and family life) is in the process of development. For further information, consult the director of the School of Home Economics.

Teacher Education Program

Everett V. Samuelson, Dean, College of Education (301 Educ. Bldg.).

The preparation of teachers is a cooperative enterprise between the College of Education and other divisions of the University. Overall coordination is achieved through the Teacher Education Coordinating Committee, which is made up of representatives from the professional and academic areas involved. However, the screening of all applicants for admission to, or continuance in, the Teacher Education Program 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 teaching have the option of completing their bachelor's degree in the College of Education (except for agricultural education, home economics education, and music education) or in the department of their subject major.

Admission to the Program

Upon completion of the first semester of the sophomore year, or 40 semester credits, all teacher-education students must make application for admission to, or continuance in, the Teacher Education Program. A standing committee of the College of Education reviews each applicant's total record and presents its recommendations to the dean of that college. The approval of the dean of the College of Education is required for admission to, or continuance in, the program. Admission to the Teacher Education Program does not carry with it permission to enroll in senior practicum. Additional procedures and requirements apply, as noted in the information under "Senior Practicum" in the College of Education section of this catalog, and as noted in the prerequisites to the specific courses in senior practicum.

Advising

Teacher education students have two advisers: one from the subject-matter department and one from the College of Education. 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 the teacher education program) the advisers are designated. They plan and approve a program of studies for the student. So long as the approved program is followed, only the student's college

adviser is required to sign the registration cards. Changes in the program require the signatures of both advisers. Exceptions to this rule are students majoring in a subject-matter area in the College of Education, students in the Department of Agricultural Education, the School of Home Economics, and the School of Music, who have advisers in their subject-matter areas only.

Certification for Secondary-School Teaching

Students admitted to the Teacher Education Program who are enrolled in a department or college not offering major studies in teacher education normally satisfy the requirements for the Idaho Standard Secondary-School Certificate by including the 20-credit 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; (4) two 30-credit teaching majors; Or (5) one 45-credit teaching major. (See "Teaching Majors and Minors" at the conclusion of the College of Education section.)

20-Credit Core. Developmental or Educational Psychology, 3 cr (Psych 205 or Ed 415); Strategies for Teaching, 2 cr (Ed 314); Special Methods, 2 cr (Ed 315, 316, 317, 318, 319, 341, or another approved special methods course); Proseminar in Teaching, 1 cr (Ed 445); Practicum, 9 cr (Ed 431 or another approved practicum course); Contemporary Education, 3 cr (Ed 468). *Note:* Psych 100, Intro to Psychology, is the prerequisite for Psych 205; however, in most programs this course may be counted among the general requirements in social sciences.

Exceptions. Teacher education students majoring in the College of Education, the Department of Agricultural Education, the School of Home Economics, or the School of Music have slightly different requirements. See the curricula for these fields in their appropriate college sections.

Procedures. The college in which the student is enrolled initiates the application for teacher certification. The subject-matter adviser and the professional education adviser both sign the necessary forms and forward them to the dean of the College of Education. The dean, in turn, works with the registrar to get the necessary supporting credentials and forwards the material to the proper certification office. 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.

The College of Education reserves recommendations for certification to students who have completed four years of preparation and hold a bachelor's degree.

Center for Native American Development

Jack R. Ridley, Director (Center for Native American Development, 730 Deakin Ave.).

The Center for Native American Development was established in 1972 to provide class and research instruction in native American resources and resource development. The overall objective of the center is to develop the management skills and capabilities of native students and tribal leaders through teaching, research, and service. The center also serves to broaden the understanding of tribal governments and the state of Idaho in economic planning for human and natural resource development, to assist tribal educators and committees toward a more effective and responsive educational system for native students, and to maintain communications with federal and native organizations that are concerned with current native American affairs. Supporting courses and directed study in native American affairs are also available through the center for all students in the university.

Graduate School

Robert W. Coonrod, Acting Dean of the Graduate School (108 Morrill Hall).

The Graduate School was formally organized in 1925, but the university has offered advanced degrees for 80 years, awarding the first master's degree in 1897. The Graduate School encompasses seven colleges and more than 50 departments and subject areas. This coverage of all regular disciplines and professional fields provides in one location a wide variety of academic work. Enrollments are large enough to provide the critical mass of students and faculty necessary for graduate programs and yet sufficiently small to permit close faculty-student relationships. Interdepartmental cooperation is an important factor on the Idaho campus, which is also the research center for the state.

Degree programs are offered in 110 areas for the master's degree, in 6 for specialist degrees, and in 22 for the doctoral degree. Specific degree offerings are given in the graduate bulletin, which also provides detailed information about the Graduate School, appointments, financial aids, library, research facilities, and procedures.

Undergraduate Enrollment in Graduate Studies (Partial Enrollment)

A senior in residence who is within 12 credits of

completing the requirements for the baccalaureate degree, and who meets the requirements for admission to the Graduate School, as set by the university and the department concerned, may apply for admission to partial enrollment in the Graduate School. On a form provided, a course registration plan designating undergraduate and graduate courses is submitted with the application for admission.

Admission in advance of registration permits certain courses to be designated for graduate credit. Capable students can thus begin graduate work at an earlier date than would otherwise be possible. Qualified seniors will normally be in their last semester when applying for partial enrollment. In some cases, a maximum of two semesters of partial enrollment may be desirable in order to permit study of courses in sequence.

Seniors in 500's Courses

A senior with at least a 3.00 grade point average may enroll in one course a semester at the 500's level with permission of the instructor and the dean of the Graduate School (dean's signature on the undergraduate registration card is required). Credits so earned while a senior are for undergraduate purposes and may not be offered later for an advanced degree. No undergraduate student may enroll in the cooperative graduate courses offered with Washington State University.

Continuing Education, Summer Sessions, and Special Programs

Susan S. Burcaw, Director of Continuing Education and State Coordinator of Correspondence Study (112 Continuing Education Bldg.); Paul F. Kaus, Director of Summer Session/Special Programs and Associate Director of Continuing Education (114 Continuing Education Bldg.).

Continuing education is administratively separate from the Office of Summer Sessions and Special Programs. However, since these programs are similar in their service roles to off-campus and part-time students, they are described together in this section of the general catalog.

Continuing Education Programs

The Continuing Education Office at the University of Idaho cooperates with Lewis-Clark State College and North Idaho College in the development of continuing education programs in northern Idaho. The university also offers continuing education programs in southern and eastern Idaho in subject and program areas where other public institutions do not have programs or services available.

Requests for continuing education services in any section of the state may initially be directed to the above-named director.

Extension Courses. Courses of this type offer University of Idaho credit and are available throughout the state within the limitations indicated above. Usually a minimum of 12 students is required to offer a course, and more may be needed if instructor travel is required. Within the north Idaho area, 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 academic unit in which the course is offered. Grade points are not computed for extension course credits.

Generally, no single catalog of extension 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 for extension credit 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. Since these courses are prepared in response to local needs and interests, anyone interested is urged to contact the Continuing Education Office a month or two before the term in which the course is proposed to be offered and indicate interest in a specific subject and provide some observations on the number of other people who may be interested in the same course in the geographic area.

Most higher education institutions, including the University of Idaho, restrict the amount of extension credit that is applicable toward a degree. Since the acceptability of this type of credit varies among institutions, and to some extent within institutions for specific degree programs, students intending to apply extension credit toward either undergraduate or graduate degrees should check with their own college or university. For University of Idaho general requirements on the acceptability of extension credits, see regulation J-5 in part 3.

Admission procedures for enrolling in extension 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 registrations may be requested. Standards for admission to extension courses are usually the same as admission for credit courses on campus. Exceptions to requirements will often be made in the event students are enrolled for audit or zero credit. Students regularly enrolled in residence are not allowed to also enroll in an extension course without prior approval.

Correspondence Study. Many University of Idaho courses are also offered through correspondence study. Each course parallels its campus counterpart in content and credits and

may be started at any time with one year for completion. As is true of extension courses, most institutions limit the amount of correspondence study applicable toward a degree. For University of Idaho limitations, see regulation J-5 in part 3. A student currently enrolled at an institution of higher learning should receive 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 the University of Idaho.

For a bulletin that contains further information on procedures, registration blanks, and a complete listing of college, high school, and noncredit courses, write or call the Correspondence Study Office at the university.

Coeur d'Alene Adult Education Center. A summer program is available at Coeur d'Alene that offers University of Idaho resident credit. The session lasts eight weeks with some shortcourses and workshops accelerated within that time period. Generally, a minimum of 12 students is required to offer a course, and qualified faculty must be available. Most of the courses are offered on the North Idaho College campus, and a local coordinator is employed to help supervise the operation.

To the extent that appropriate courses are available, students may complete all of the work required for a baccalaureate degree with the exception of 16 of the last 40 credits at the Coeur d'Alene Adult Education Center. After a candidate is within 40 credits of the number of credits required for the degree, he or she must complete in residence on the University of Idaho campus in Moscow a minimum of 16 credits (practicum, internship, and similar courses may not be counted among the minimum of 16). Among the remaining 24 credits, the student may count a maximum of eight credits earned at other senior colleges or universities, or through any of the following means: extension, correspondence study, bypassed courses, credit by examination, College Level Examination Program (CLEP), external study/experience, technical competence, or certain educational programs sponsored by the armed forces.

Anyone interested in enrolling in the summer program at Coeur d'Alene should contact the Continuing Education Office on the University of Idaho campus.

Cooperative Graduate Center, Boise. In cooperation with other institutions of higher education offering graduate level programs, the university participates in the Cooperative Graduate Center, which offers courses in the Boise-Caldwell area. Under this arrangement, students are allowed to register and receive credit from the participating institution of their choice, provided that that institution has approved the course and instructor. The program at the University of Idaho is offered under the general supervision of the Graduate School. Anyone intending to complete an advanced degree through this program must apply and be admitted to the University of Idaho Graduate School. Others may be admitted to the cooperative center courses as nonmatriculated students in which case transcripts from institutions previously attended may not be required.

Once a schedule of course offerings is established for the center, it is the responsibility of the respective institutions to publicize, make arrangements for advising, complete registration, etc., for students registering with their institution. For further information, write or call the Director of Continuing Education at Boise State University, Idaho State University, or the University of Idaho.

Conferences, Workshops, and Shortcourses. In addition to the credit programs reported above, a wide variety of continuing education noncredit programs can be arranged through the Continuing Education Office. These may range from leisure and aesthetic type activity to highly specialized technical subjects at the postgraduate degree level. Generally, offerings of this kind are limited to those that are defined as higher education level and to those subject areas in which the University of Idaho has expertise available.

Such workshops and shortcourses may be offered anywhere in the state if it is determined that the University of Idaho has unique capability to sponsor such continuing education activities. Fees vary widely with the nature of the offerings, although there is usually a specified limited enrollment for any given offering. Generally, unless outside funding is available, offerings of this kind are on a self-supporting basis, which means there must be sufficient income to cover all costs. Because of the wide variety of types of programs that can be offered, anyone interested is urged to write or call the Continuing Education Office with specific requests and to indicate a potential audience in the geographic area that may be interested. Once a program has been tentatively scheduled, special announcements are mailed using a mailing list that is believed to include those most likely to be interested in enrolling.

Summer Sessions

An eight-week summer session is scheduled each year, normally starting about the second week in June. In addition, pre- and post-session courses may be offered through the Special Programs Office, some of them on a self-supporting basis. During the eight-week session, many courses are accelerated into one-, two-, or three-week concentrated sessions, thus allowing students to complete a course in less than the

full eight weeks. Many recreational and cultural activities are scheduled through the Summer Recreation Office, as well as programs presented through the School of Music and the Department of Theatre Arts. Special programs for high school age students are also available in several areas.

Academic regulations included in this catalog are applicable during the summer session. Anyone interested in enrolling is invited to write the Office of Summer Sessions for a copy of the summer bulletin which is published each year in late February or early March. The bulletin contains complete information needed to register for the summer session.

Special Programs

Intersession, Presession, and Postsession Programs. The Special Programs Office is authorized to offer self-supporting programs during the break between semesters and at other times when the university is not regularly in session. In addition, the office may offer courses during regular sessions when the course is designed for a specific group of students and offered for a shorter period of time than the regular semester or summer session. In short courses offered for credit, students are allowed to register and earn credits at the rate of one per week. Courses offered are those approved for credit by the appropriate academic unit, and faculty are generally members of the regular staff or others who have been approved by the academic unit. Usually 12 students are required to offer a special-programs course, although arrangements can be made for individual-study type courses such as directed study, etc. People interested in enrolling in courses of this kind on campus should contact the Special Programs Office and indicate a specific interest.

INEL Education Program. The undergraduate portion of the education program at the Idaho National Engineering Laboratory at Idaho Falls is supervised by the Special Programs Office. The graduate portion of the same program is supervised by the Graduate School. The program offers resident credit to contractor employees of the Energy Research Development Administration. Courses are offered each semester, but no summer program is scheduled.

Applicants must meet requirements for admission to the University of Idaho. If appropriate courses are available, students may complete all of the work required for a baccalaureate degree at the INEL Education Center; some required courses, however, are available only on the Moscow campus. (See "residence requirements" in regulation J-2 in part 3.)

The program is administered by a resident director at Idaho Falls. For further information on specific courses available, write INEL Education Program, 550 Second Street, Idaho Falls, Idaho 83401.

INEL Certificate Program. Students enrolled at the INEL Education Center who complete the required courses with a grade point average of 2.00 or better and who pass an examination in the field of concentration may be awarded the Certificate of General Proficiency. Students who maintain a grade point average of 2.75 or better are exempted from the final examination. The program of studies for each area of concentration has been approved by the appropriate subject matter department at the university and by the University Curriculum Committee and includes between 24 and 33 semester hours of course work.

The certificate program should not be confused with the degree program; it allows for a limited amount of specialization in a restricted and specified series of courses. The significance of the certificate is dependent on its acceptance and support by the contractor employer at the INEL site and by others.

Credit earned while enrolled in the certificate program may also be applied toward a degree if the candidate is otherwise eligible under regular university requirements.

Officer Education Program

James D. Morris, Chairman, Officer Education Committee; Col. Richard C. Stockton, Head, Department of Naval Science (101 Navy Bldg.); Lt. Col. John N. Vanderschaff, Head, Department of Military Science (103 Memorial Gymnasium).

The Officer Education Program (OEP) is offered at the University of Idaho by the Departments of Military Science (Army OEP) and Naval Science (Navy-Marine OEP). University of Idaho students who are interested in the Air Force OEP may enroll in a cooperative program in aerospace studies that is offered through Washington State University.

The purpose of OEP is to prepare selected students to serve as commissioned officers in the Air Force, Army, Navy, and Marine Corps. This program constitutes the largest single source of trained officers for both the reserves and regular forces. Successful completion of requirements for both a baccalaureate degree and OEP study programs leads to a commission in the armed forces.

General Information

The two OEP departments offer, on a selective basis, four-year and two-year OEP programs. Under the provisions of present laws, the two services offer scholarships to selected students each year in a nation-wide screening and testing program. The financial assistance that is provided in conjunction with these OEP scholarships in-

cludes tuition, books, and all standard fees listed in the catalog, except room and board. In addition, students receive subsistence pay of $100 per month. The Army offers one-, two-, three-, and four-year scholarships; the Navy offers two-year and four-year scholarships. Nonscholarship students receive $100 per month during their final two years of OEP instruction only. Uniforms and textbooks for all OEP courses are provided at no cost.

Information concerning the specific courses in aerospace studies, military science, and naval science may be found in part 5 of this catalog. Each program is further explained below. Inquiries are welcomed and should be addressed to the respective OEP office.

Aerospace Studies

University of Idaho students who wish to become Air Force officers enroll in the aerospace studies course of training at Washington State University at no additional expense for tuition or fees. Classes are conducted on the Pullman campus and are offered at times that permit University of Idaho students to avoid conflicts with their other courses.

The Air Force OEP prepares men and women for commissioning and active service in the United States Air Force. Successful completion of the program can lead to challenging careers as pilots and navigators or in nonflying positions paralleling most civilian professions. Leadership and management experience gained in the Air Force OEP and as an Air Force officer equips young men and women for successful careers in the Air Force, should they elect to continue on active duty, or in other occupations. For more information concerning the cooperative Air Force OEP at Washington State University, consult the University of Idaho Office of the Academic Vice President.

Military Science

Army OEP is basically a study in leadership and management, applicable to either a civilian or military career. During the first year, students are instructed in the fundamentals of leadership and management, and, in the sophomore year, in applied leadership and management. In the advanced course (junior and senior years), the student progresses to advanced leadership and management and participates in seminars in the same field of study. At the end of the junior year, students attend a six-week summer camp at an Army post where those leadership and management principles learned in the OEP classroom are put into actual practice.

Two-Year Program. Specifically designed for the junior college student, but available to others, is a two-year program of study in which students initially attend a six-week encampment in lieu of the first two years of college OEP. This is followed by the study of advanced leadership and management seminars in the junior and senior years of college or university work.

Naval Science

The Navy-Marine OEP offers full and part scholarships leading to commissions and active duty as Navy or Marine Corps officers. Normally, students enter the program at the beginning of the freshman year; however, selected students may enter later, up to the beginning of the junior year. Students take 22 hours of professional courses taught by Navy and Marine Corps officers. Special provision for meeting freshman and sophomore requirements is made for students who enter the program in their junior year. Following graduation, a broad variety of duty assignments is available to the newly commissioned officer, including duty on nuclear submarines and surface ships, in naval aviation, supply corps, civil engineering corps, and ground or aviation assignments in the Marine Corps. All commissionees go on active duty at full pay and allowances immediately upon graduation.

Students who qualify and who plan to enter flight training as Navy or Marine Corps pilots after being commissioned, may apply for participation in the flight instruction program offered locally. Successful completion of this program meets most requirements for a private pilot's license.

Full Scholarship Program. Application for this program is normally made during the fall of the student's senior year of high school or freshman year of college. Initial selections are based on college entrance examination scores (SAT or ACT) and high school academic performance. A student on full scholarship participates in three summer training cruises of six to eight weeks' duration. The first and third cruises are aboard ships of the Pacific or Atlantic Fleet and often include travel to Europe or the Far East. During the second cruise, students are introduced to submarine, amphibious warfare, and aviation specialties. Full scholarship benefits include tuition, fees, books, and a $100 per month retainer. During summer cruises, the students receive one half the pay of an ensign, in addition to room and board. Graduates of this program are commissioned as regular officers in the Navy or Marine Corps.

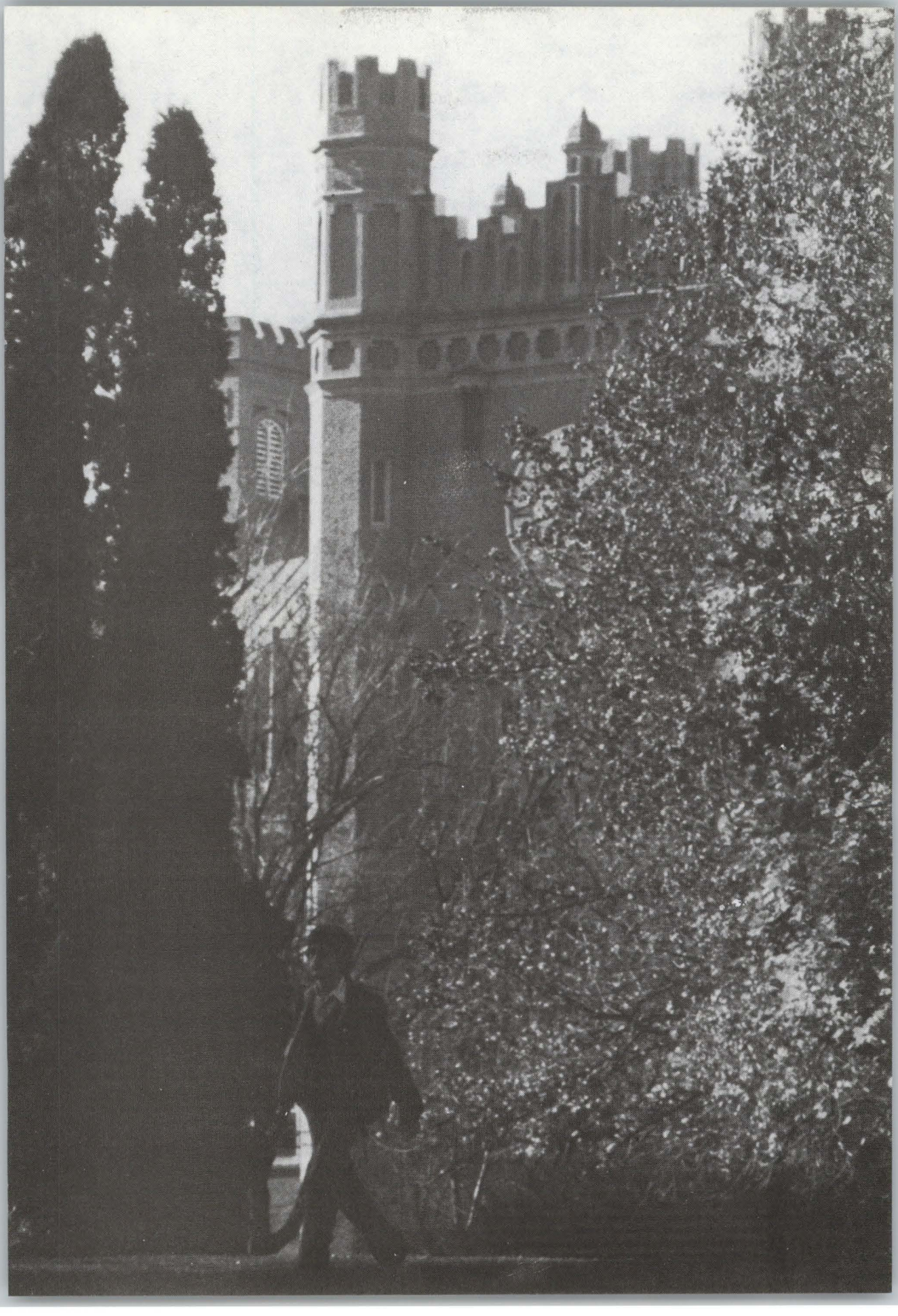
Part Scholarship Program. Application for this program is made directly to the head of the Department of Naval Science. Students receive their uniforms and naval science textbooks at no cost and begin receiving monthly subsistence pay of $100 per month at the beginning of the junior year. Part scholarship students may be nominated by the Professor of Naval Science to the Chief of Naval Education and Training for a

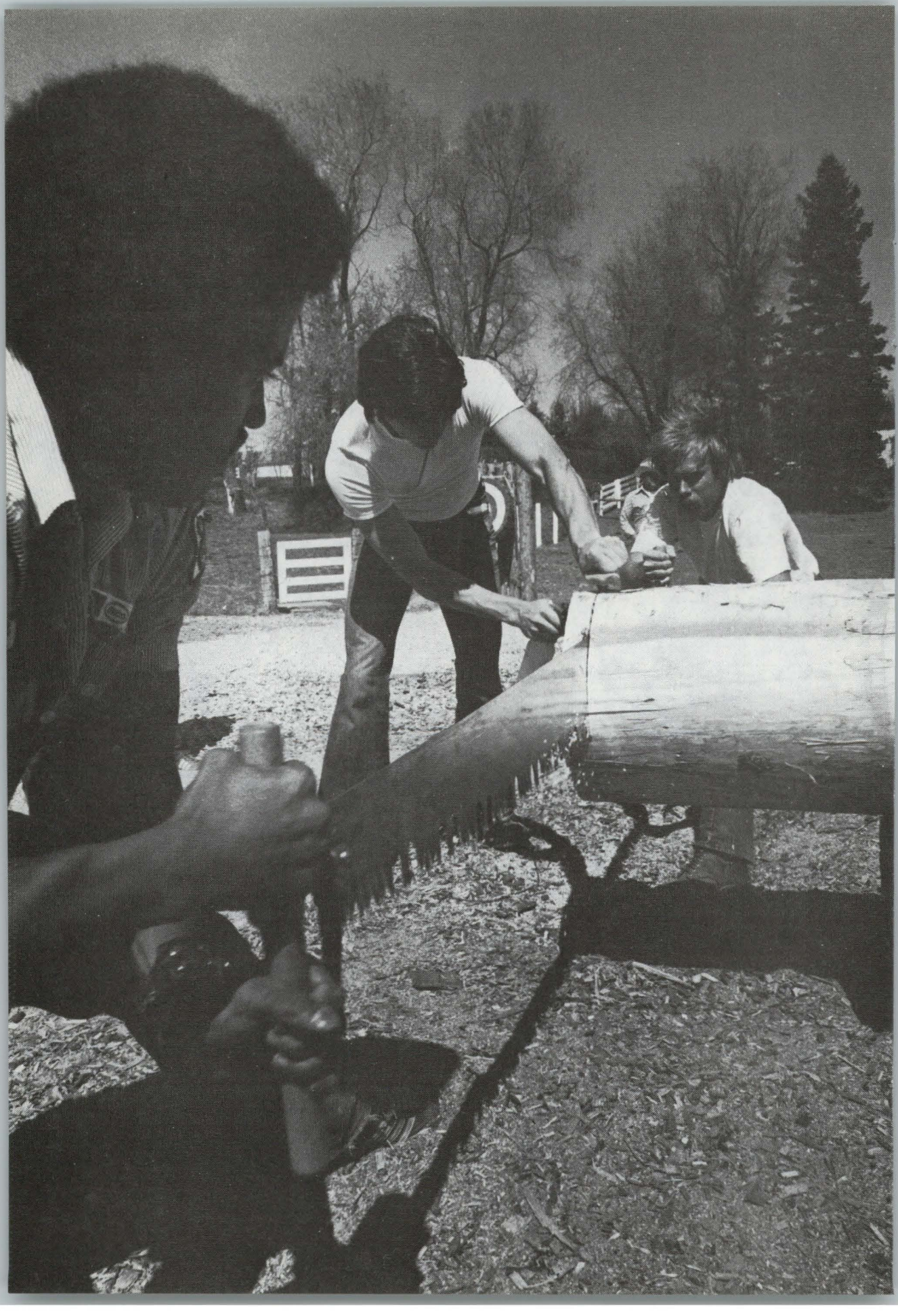
full scholarship, if their grades and military aptitude marks are sufficient. The program requires one training cruise during the summer following the junior year. It is an afloat cruise of the same type and with the same pay as described for the full scholarship program. Graduates of this program are ordered to active duty with reserve commissions.

Marine Corps Option. Both full and part scholarship 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 classes on Marine Corps subjects during their junior year and participate in summer training at the Marine Corps Schools at Quantico, Virginia, during the summer following the junior year.

Two-Year Program. Navy-Marine Corps full and part scholarship 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 the junior and seniors 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 full scholarships for their last two years of college. The remaining graduates receive part scholarships.

Field Trips. Field trips to Navy and Marine Corps facilities are arranged periodically in order to allow the Navy/Marine Corps OEP members the opportunity to learn more about the naval service.





Course Numbering System and Key to Abbreviations and Symbols

Subject fields in this section are listed in alphabetical order. Courses within certain subject fields are presented in subgroups. For example, in the foreign languages and literatures course section, all French courses are together, all German courses are together, etc.

Numbering System

Courses numbered 010-099 are high-school-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 Graduate School (see general regulation "B-8" in part 3 for the exception to this rule); courses numbered 800-999 are of a highly professional and technical nature that count toward a professional degree only (e.g., Juris Doctor, NOT toward academic degrees such as M.A., M.S., Ph.D.).

Letter Designations with Numbers

Certain course numbers also include letters preceding the arabic number, e.g., R101, X100, 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.

ID—cooperative course with Washington State University offered at the University of Idaho and available to WSU students.

N—offered in the National Science Foundation program only.

R—offered only in the educational program of the Idaho National Engineering Laboratory at Idaho Falls.

WS—cooperative course with Washington State University offered at WSU and available to University of Idaho students.

X—although any course may be offered by extension, those identified with X as a part of the number are normally offered by extension only.

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 without restriction as to maximum

Other Abbreviations

a/c—air conditioning

acctg—accounting

admin—administration(-tive)

adv—advanced

ag—agriculture(-al)

alt/yrs—offered in alternate years (the academic year in which it is to be offered is usually shown)

analyt—analytical

anthro—anthropology(-cial)

appl—application(-s)

approx—approximate

arch—architecture(-al)

AV—audiovisual

bact—bacteriology

biochem—biochemistry

biol—biology(-ical)

bldg(s)—building(-s)

bot—botany

bus—business

(Continued)

chem—chemistry(ical)
civ—civilization
comm—communication
constr—construction
coreq—corequisite
cr—credit
dem—demonstration
dev—development(s)
disc—discussion
div—division
econ—economic(-s)
ed—education(-al)
elec—electric(-al)
elem—elementary
engr—engineering
ent—entomology
equiv—equivalent
eval—evaluation
exam—examination
geog—geography
geol—geology(-ical)
govt(s)—government(-s, al)
GPA—grade point average
grad—graduate
guid—guidance
hist—history
hr—hour
ident—identification
incl—includes(-ing)
indiv—individual
info—information
interm—intermediate
interp—interpreting(-tation)
intro—introduction(-tory)
lab(s)—laboratory(-ies)
lec—lecture(-s)
lit—literature
math—mathematics(-ical)
max—maximum
mech—mechanical
mgmt—management
mgr—manager
org(s)—organization(-s, -al)
perm—permission of instructor
perm of dept—permission of the department or subject-field chairman
P/F—(graded) on the basis of pass or fail
prep—preparation
prereq—prerequisite
prin—principles
prog—program(-s)
psych—psychology(-ical)
qual—qualitative
rec—recreation
reqd—required
rpt—report
sc—science(-s)
soc—sociology
soph—sophomore
stats—statistics
specs—specifications
tech—technical(niques)
vet med—veterinary medicine
voc—vocational
vocab—vocabulary
vo-tech—vocational-technical
wk—week
wrtg—writing
yr—year
zool—zoology

Accounting—Acctg

Bruce P. Budge, Dept. Head (209-G Admin Bldg.). Faculty: George A. Anderson, Bruce P. Budge, Robert W. Clark, Harold L. Jones, Jack F. Truitt, Glen G. Utzman.

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: 201-202-301-302-401-402.

200 (s) **Seminar** (cr arr). Prereq: perm.

201 Prin of Acctg (3 cr) (C). Description and derivation of the primary financial statements prepared by accountants; acctg rationale; reports to stockholders and other investors; intro to other acctg courses and terminal course in financial acctg.

202 Managerial Acctg (3 cr) (C). Prin of cost determination and control of manufacturing activities; managerial use of cost info for planning and control; cost-profit-volume analysis; job-order costs; process costing; standard costs; budgeting; responsbility acctg; transfer prices; capital budgeting. Prereq: 201.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

281 Financial and Administrative Acctg (3 cr). For nonmajors; not open for cr to majors. Structure of acctg theory, using info in financial statements, acctg for mgmt control, and in making decisions. Prereq: 202.

299 (s) **Directed Study** (cr arr). Prereq: perm.

301-302 Interm Acctg (3 cr) (C). Acctg 301: review of fundamental acctg process; classification and valuation problems relating to

current and noncurrent assets; acctg prin and conventions used to govern valuation and procedures for statement presentations. Acctg 302: acctg prin involved in the presentation of the liability and owner's equity sections of the balance sheet, analysis of financial statements and statements of source and appl of funds. Prereq for 301: 202. Prereq for 302: 301.

385 Costs: Concepts and Methods (3 cr). Methods of specific order, process, and standard costing, overhead allocation. Prereq: 202, jr standing.

395 Fundamentals of Acctg (4 cr). Primarily for students in the M.B.A. program. Financial statements, limitation of data, partnership and corporate acctg, financial and cost analysis, and interp. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Adv Acctg (3 cr). Partnerships, fiduciary, estate, trust, govt, and institutional acctg. Prereq: 302.

402 Acctg for Nonprofit Orgs (3 cr).Acctg and reporting prin, standards and procedures appl to state and local govts and other not-for-profit institutions such as universities and hospitals; financial mgmt considerations and problems peculiar to the not-for-profit sector. Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

483-484 Federal and State Taxes (3 cr). Acctg 483: income-tax law in relation to individuals; determination of gross income, bus deductions, other deductions and exclusions; determination of tax liability and prep of tax returns. Acctg 484: income-tax law in relation to partnerships, corporations, and trusts and estates; tax-law research; estate, gift, and inheritance tax law; estate planning. Prereq: 202.

486 Costs: Analysis and Controls (3 cr). Cost analysis and control methods as a basis for planning, cost control, and decisions. Prereq: 385 and Bus 231.

491 Acctg Theory (3 cr). Hist; major areas of controversy in prin and theories. Prereq: 401.

493 Auditing Theory (3 cr). Nature, importance, and basis of the audit theory; standards and procedures. Prereq: 302.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

586 Costs: Relevance, Measurement, and Applications (3 cr). Dev of cost control. Prereq: perm.

Aerospace Studies—Aero

UI students interested in the Air Force Officer Ed Prog enroll in the following courses that are offered through Washington State University.

WS025 Field Training Course (0 cr). Appl must be made at least 4 mos before attendance date. Successful completion of this course meets the prereq for the Professional Officer Course (WS301-WS302, WS401-WS402). Six wks of academic and field exercises and orientation to Air Force life, conducted during the summer at an active Air Force installation. Prereq: 2 yrs college work and perm of dept.

WS049 Field Training Unit (0 cr). Successful completion of this unit meets the prereq for the Professional Officer Course (WS301-WS302, WS401-WS402). Four wks of military skills and orientation in military operations, conducted during the summer at an active Air Force installation. Prereq: 2 yrs college work, WS202 or equiv, and perm of dept.

WS101-WS102 U.S. Aerospace Forces (1 cr). Aero WS101: structure and capabilities of the U.S. aerospace strategic and defensive air forces; relationship of the indiv to the Air Force. Aero WS102: structure and capabilities of the U.S. aerospace general purpose and support forces; responsibilities and opportunities of the Air Force officer. One lec and 1-hr lab per wk. Prereq: WS101 for WS102.

WS201-WS202 Evolution of Aerospace Power (1 cr). Aero WS201: growth and dev of airpower doctrine and concepts from the origins of manned flight through WWII. One lec and 1-hr lab per wk. WS202: dev of airpower doctrine and concepts from the Berlin Airlift to today; peaceful employment of air-power as a force for stability. Prereq: perm of dept.

WS301 The Professional Military Officer (3 cr). Military officership as a profession, role of national security forces in the U.S.; comm skills. Prereq: 025, or 202 and 049.

WS302 National Security Forces in Contemporary American Society (3 cr). Defense strategy and conflict mgmt; formulation and implementation of U.S. defense policy, incl case studies; comm skills. Prereq: 301.

WS401 Air Force Leadership (3 cr). Professional leadership, responsibilities, and functions reqd of career Air Force officers; military justice system. Three lec and 1-hr lab per wk. Prereq: WS302.

WS402 Air Force Mgmt (3 cr). Mgmt prin and functions pertaining to command and supervision; case histories. Three lec and 1-hr lab per wk. Prereq: WS401.

WS456 Air Force Flight Instruction Prog (3 cr). Intro to airplane piloting, flight theory, meteorology, FAA regulations, and navigation. Two lec per wk, plus 25 hrs flying time during the semester. Prereq: enrollment in aerospace studies prog and perm of dept.

Afro-American Studies—AfrAm

Siegfried B. Rolland, Coordinator (311-B Admin. Bldg.).

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

322 Racial and Ethnic Relations (3 cr). See Anthr 322.

327 Black Lit (3 cr). See Eng 327.

385 African Political Systems (3 cr). See PolSc 385.

427 Peoples of Africa (3 cr). See Anthr 427.

432 The Negro in American Hist (3 cr). See Hist 432.

Agricultural Economics—AgEc

Richard W. Schermerhorn, Head, Dept. of Agricultural Economics and Applied Statistics (39A Iddings Wing, Ag. Sc. Bldg.). Faculty: Ahmed A. Araji, John E. Carlson, John O. Early, Dale O. Everson, Richard D. Gibb, Joel R. Hamilton, James R. Jones, Virgil D. Kennedy, Karl H. Lindeborg, Roger B. Long, Gerald E. Marousek, Neil L. Meyer, Edgar L. Michalson, G. Raymond Prigge, Arthur C. Rathburn, Robert L. Sargent, Richard W. Schermerhorn, Stephen M. Smith, David J. Walker, Russell V. Withers, J Clair Wixom.

101 Ag and Its Social and Econ Environment (3 cr) (C). Hist of ag and its relation to social and econ problems of the U.S. and the world; factors affecting production and marketing of ag products.

205 Farm Marketing and Mgmt Decisions (4 cr). Practical appl of econ prin and mgmt decisions in production and marketing of farm products. Three lec and one 2-hr lab per wk. May not be used for major cr by majors in ag econ.

278 Prin of Farm and Ranch Mgmt (3 cr) (208) (C). Decision making and profit maximization using econ prin, records, enterprise analysis, and comparison of alternative farming practices. Prereq or coreq: Econ 252.

289 Ag Markets and Prices (3 cr) (219) (C). Econ of ag markets and pricing institutions; analysis of supply, demand, elasticity,

futures markets; effect on ag markets and prices. Prereq or coreq: Econ 252.

332 Econ of Ag Dev (3 cr). Alt/yrs 78-79. Problems associated with the econ of dev of major ag areas of the world. Prereq: prin of econ.

356 Ag Programs and Policies (3 cr). Goals, methods, results of econ prog and policies in ag, incl role of govt and farm orgs. One 1-day field trip. Prereq: Econ 251-252.

361 Farm and Natural Resource Appraisal (3 cr). Same as FWR 361. Methods; factors affecting the value of land and related resources; valuations for loans, sale, assessment, condemnation, and other purposes; procedures used by govt and commercial agencies. Two 1-day field trips. Prereq: 278, 383, or Bus 311.

383 Econ of Conservation (3 cr). See FWR 383.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

391 Agribusiness Mgmt (3 cr). Econ theory of bus; appl to mgmt of ag processing and service firms; acctg, stats, and efficiency studies for problem-solving. Prereq: Econ 252 and 3 cr in acctg.

404 (s) **Special Topics** (cr arr).

414 Analyt Techniques in Agribusiness and Econ (3 cr). Linear equations, linear programming, marginal analysis, and statistical methods applied to problem solving in agribus and econ. Prereq: Econ 321 and Math 112 or equiv.

451 Land Resource Econ (3 cr) (C). Ag, forest, and mineral land use and classification; factors affecting land use; ownership, tenure, taxation, values, credit, and govt policies. Prereq: Econ 321.

453 Ag Price Analysis (3 cr) (353). Analyt tools for explaining and predicting price behavior of ag products; appl of econ and stats to price analysis. Prereq: 289 and Ag 321 or equiv.

467 Econ of Rural Community Dev (2 cr). Econ theory, analyt methods, and lit relevant to study of dev of rural areas. Prereq: Econ 321 and Soc 310.

477 Econ of Developing Countries (3 cr). See Econ 477.

481 Ag Market Analysis (3 cr). Structure, competition, and econ performance of ag product and input markets. Prereq: Econ 321, 372, or perm.

493 Ag Production Econ (3 cr). Econ theory related to ag production at the enterprise, firm, and industry levels. Prereq: 278 and Econ 321.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

507 Research Methodology (3 cr). Same as Econ 507. Theoretical background of the scientific method applied to econ research; org, procedures, reporting, and eval of research. Prereq: grad standing and perm.

508 Problems in Production Econ Research (3 cr). Objectives and tech; appl of probability models and their eval employing a number of econometric tech. Prereq: 493 and ApSt 406.

509 Adv Microecon Theory I (3 cr) (521). See Econ 509.

510 Adv Microecon Theory II (3 cr). See Econ 510.

522 Adv Aggregate Econ (3 cr). See Econ 522.

524 Theory of Econ Dev (3 cr). Alt/yrs 78-79. Same as Econ 524. Macrodynamic theory as it relates to econ growth; conditions for and process of econ dev and its significance to new areas and underdeveloped regions. Prereq: Econ 321, Econ 372.

525 Econometrics (3 cr). Same as Econ 525 and ApSt 525. Math formulation of theoretical econ models that serve as the basis for empirical investigations of econ behavior. Prereq: Econ 321 and 6 cr in stats.

551 Econ of Natural Resource Dev (3 cr). Allocation of natural resources over time and among uses; welfare econ and benefit cost analysis; valuation of extramarket goods; problems of social orgs. Prereq: 451 or equiv, and Econ 509.

599 (s) **Research** (cr arr). Prereq: perm.

Agricultural Education—AgEd

Douglas A. Pals, Dept. Head (111 Ag. Sc. Bldg.). Faculty: Robert C. Haynes, Dwight L. Kindschy, Douglas A. Pals, William H. Shane.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

299 (s) **Directed Study** (cr arr). Prereq: perm.

348 Extension Methods (2 cr) (C). Methods used in the field by extension personnel.

351 Prin of Voc Ed (2 cr) (C). Same as VocEd 351. Hist, aims, and purposes.

352 Beginning Methods (2 cr). Problems, methods, and materials.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

453 Adv Methods and Curricula (3 cr). Continuation of 352. Prereq: sr standing.

454 Methods of Teaching Farm Shop (2 cr). Appl of org and mgmt practices in teaching farm mechanics.

457 Adult Ag Ed Methods (2 cr). Methods in organizing and conducting young and adult farmer classes.

458 Supervision of the FFA (2 cr). Incl community work and other problems not covered in 453.

460 Practice Teaching (1-9 cr, max 9). Supervised teaching in secondary schools. Prereq: 352 and perm of dept.

470 Proseminar (1 cr, max 2).

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

557 Problems in Teaching Voc Ag (13 cr, max 9). Methods and new dev. Prereq: perm.

561 Adult Programs in Ag (1-6 cr, max 6). Philosophy, dev. and status of adult ed in relation to adult prog in the Northwest.

562 Adv Methods in Farm Mechanics (1-6 cr, max 6). Trends in teaching farm mechanics prog.

583 Program Planning in Voc Ag (1-6 cr, max 6). Emphasis on preparing off-farm ag occupations.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Agricultural Engineering—AgE

Delbert W. Fitzsimmons, Dept. Chairman (326 Buchanan Engr. Lab.). Faculty: George L. Bloomsburg, Charles E. Brockway, John R. Busch, John E. Dixon, Edwin A. Dowding, Delbert W. Fitzsimmons, James L. Halderson, Robert C. Haynes, Dorrell C. Larsen, Galen M. McMaster, Walter L. Moden, Myron P. Molnau, Charles L. Peterson, Roy E. Taylor, Larry G. Williams.

241 Intro to Ag Engr (1 cr). Appl of engr prin to ag problems. One 2-hr lab per wk.

242 Ag Engr Analysis (2 cr). Methods of analyzing and solving

engr problems; use of computers in solving selected problems. Prereq: Engr 131, Math 190.

299 (s) **Directed Study** (cr arr). Prereq: perm.

351 Hydrology (2 cr). Same as CE 321. Analysis of precipitation and runoff events; prin of evaporation, infiltration, and snowmelt.

352 Irrigation Engr (3 cr). Plant-soil-water relationships, theory and design of irrigation systems, water rights. Two lec and one 3-hr lab per wk. Prereq: ES 320.

372 Ag Machines (3 cr). Operation and functional requirements, force analysis, power transmission, safety, and economy. Two lec and one 3-hr lab per wk. Prereq: ES 340.

441 Instrumentation and Measurements (3 cr). Sensing elements, signal conditioning, data output and control. Two lec and one 3-hr lab per wk.

449 Elements of Structural Engr (4 cr). Design of steel and timber members and connections, reinforced concrete beams, slabs, columns, and footings. Prereq: ES 340.

451 Engr Hydrology (3 cr). Hydrologic cycle as applied to engr projects; hydrograph routing; design hydrographs; intro to hydrologic simulation. Prereq: 351.

454 Drainage System Design (2 cr). Theory and design of subsurface drainage systems; intro to unsaturated flow. Prereq: 320.

458 Open Channel Hydraulics (3 cr). Same as CE 421. Hydraulics of uniform and varied flow in open channels with fixed and movable beds.

461 Environmental Systems (3 cr). Analysis and synthesis of environmental control systems for animal production, crop storage, and plant growth; waste mgmt. Coreq: ES 321.

462 Elec Power and Processing (4 cr). Design and on-farm use of elec equipment and systems; processing and storage of ag products. Three lec and one 3-hr lab per wk; one 1 -day field trip. Prereq: ES 321.

471 Energy Conversion in Ag Systems (2-3 cr). Performance and characteristics of internal combustion engines and other energy sources; power transmission. Two lec, or two lec and one 3-hr lab per wk. Prereq: ES 321.

474 Fluid Power and Control Systems (2 cr). Circuit components; circuit design and testing; ag appl. One lec and one 3-hr lab per wk.

491-492 Seminar (0 cr). Professional aspects of the field. Graded P/F. Prereq: sr standing.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

ID502 (s) **Directed Study** (cr arr). Prereq: perm.

551 Adv Hydrology (3 cr). Prin of the hydrologic cycle in mountainous areas, incl precipitation, snowmelt, and systems simulation.

WS552 Adv Theory of Irrigation Water Requirements (3 cr). Alt/yrs 78-79. WSU 590. Energy balance and consumptive use of water; influence of farm and project irrigation system design criteria, mgmt and efficiencies.

WS553 Adv Theory and Design of Irrigation Systems (3 cr). Alt/yrs 78-79. WSU 591. Design and dev of irrigation systems. Two lec and one 3-hr lab per wk. Prereq: 352.

ID555 Natural Channel Flow (3 cr). Hydraulics of non-uniform flow in irregular channels, unsteady flow, and flow routing.

ID558 Fluid Mechanics of Porous Materials (3 cr). Statics and dynamics of multiflow systems in porous materials; properties of porous materials, steady and unsteady flow.

WS561 Adv Ag Engr Topics (1-4 cr). WSU 551. Directed group study of selected adv topics in ag engr.

562 Environmental Systems Design (3 cr). Structures and systems for livestock production, crop processing, and storage.

589 Water Resources Seminar (1 cr). See Inter 589.

600 Doctoral Research and Dissertation (cr arr).

Agricultural Mechanization—AgMech

Delbert W. Fitzsimmons, Chairman, Dept. of Agricultural Engineering (326 Buchanan Engr. Lab.). Faculty: John R. Busch, John E. Dixon, Delbert W. Fitzsimmons, Robert C. Haynes.

101 Oxy-Acetylene Welding (2 cr). Prin of operation, use, and care of welding and cutting equipment. One lec and one 2-hr lab per wk. Prereq: perm.

107 Arc Welding (2 cr). Prin of operation, use, and care of equipment. One lec and one 2-hr lab per wk. Prereq: perm.

112 Engr Appl in Ag (3 cr). Engr prin applied to farm machinery, bldgs, processing, irrigation, and energy utilization.

115 Graphical Representations (1 cr). Lettering, drafting procedures, orthographic projection, pictorial drawings, and sketching. One 3-hr lab per wk.

200 (s) **Seminar** (cr arr). Prereq: perm.

302-303 Ag Ed Shop I-II (4 cr). Primarily for ag ed students. AgMech 302: care and use of farm shop tools and equipment. AgMech 303: selection, operation, service, and repair of farm power units and machinery. Two lec and two 3-hr labs per wk. Prereq: perm.

305 Ag Machinery and Equipment (3 cr). Appl, mgmt, adjustment, and care of farm equipment; machinery fabrication, power transmission, and hydraulic systems. Two lec and one 3-hr lab per wk.

306 Ag Structures and Environmental Systems (2-3 cr). Planning farm bldgs, constr materials, beam and column design, insulation and ventilation for environmental control. Two lec, or two lec and one 3-hr lab per wk.

309 Ag and Automotive Engines (2-3 cr). Constr, service and repair; fuels and combustion; ignition, cooling, lubrication, and fuel systems; engine testing and energy use. Two lec, or two lec and one 2-hr lab per wk. Prereq for lab: perm.

312 Elec Power Appl (3 cr). Basic circuits; wiring and the code; motors and controls; heating, lighting, and power. Two lec and one 3-hr lab per wk.

315 Irrigation and Drainage (2-3 cr). Irrigation methods, water resources, water rights, conveyance and measurement, pumps, soil-water-plant relationships, and drainage. Two lec, or two lec and one 3-hr lab per wk.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

400 (s) **Seminar** (cr arr). Prereq: perm.

405 Ag Processing (3 cr). Grain cleaning, mixing, and drying; materials handling, heat transfer, pumps, fans, refrigeration, and instrumentation. Two lec and one 3-hr lab per wk.

499 (s) **Directed Study** (cr arr). Prereq: perm.

Agriculture (General)—Ag

Richard C. Dobson, Coordinator (47 Iddings Wing, Ag. Sc. Bldg.).

PREREQUISITE: Enrollment in courses in this subject field, except 203, requires the perm of the coordinator.

200; 400; 501 (s) **Seminar** (cr arr). Prereq: perm.

203 Environmental Pollution (3 cr). Same as Inter 203. How man pollutes his environment and what can be done about it; invited experts survey the spectrum of environmental disturbance.

204; 404 (s) **Special Topics** (cr arr).

205; 403; 503 (s) **Workshop** (cr arr). Prereq: perm.

299; 499; 502 (s) **Directed Study** (cr arr). Prereq: perm.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm.

510 Professional Problems (1-4 cr, max 4). Primarily for students in the nonthesis M.S. prog. Professional paper required.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Animal Sciences—AnSc

Jack E. McCroskey, Dept. Head (215 Ag. Sc., Bldg.). Faculty: Richard C. Bull, Ross E. Christian, Jerome J. Dahmen, Steven L. Davis, Dennis G. Falk, Kenneth R. Frederiksen, Terry L. Gregory, William C. Hamilton, Morris L. Hemstrom, Dan D. Hinman, John A. Jacobs, Stephen M. Maki, Jack E. McCroskey, Auttis M. Mullins, Charlie F. Petersen, Robert E. Roffler, Richard H. Ross, R. Garth Sesser, Erwin A. Sauter, Jr., Edward E. Steele, Robert H. Stoddard, Judith A. Templeton, David L. Thacker, Verl M. Thomas.

109 The Science of Animals that Serve Mankind (3 cr). Role of animal ag 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 Sc Dept: 110.

110 Animal Science Lab (1 cr). Lab exercises demonstrating the importance of domestic animals to human welfare. One 2-hr lab per wk. Coreq: 109.

152 Livestock Mgmt Practices (2 cr). Mgmt practices in the production, exhibition, and marketing of livestock and poultry. Two 2-hr labs per wk; one ½-day field trip. Graded P/F.

205 Intro to Animal Nutrition (3 cr). May not be used for major cr by majors in animal sc or range-livestock mgmt. Functions, metabolism, and requirements of nutrients with appl to the diets of animals and birds.

WS212 Dairy Cattle Traits (2 cr). WSU AS 212. Evaluating form and function in dairy cattle; measurement of production and eval of type. One lec and one 3-hr lab per wk.

222 Animal Reproduction and Breeding (3 cr). May not be used for major cr by majors in animal sc or range-livestock mgmt. Appl of prin of genetics and reproductive physiology in domestic animal improvement, fertility, systems of mating, and selection of tech.

224 Horse Mgmt and Training (3 cr). Appl of biol prin as related to form and function of the horse; emphasis on the relationship of structure to unsoundness and performance; practical horse mgmt and training; intro to equitation. Enrollment limited to 40 students. Two lec and one 2-hr lab per wk; one ½-day field trip.

263 Intro to Meat Science (3 cr). Basic meats course; inspection, slaughtering, processing, and factors that affect the quality and palatability of meat. Two lec and one 3-hr lab per wk.

264 Meat Technology (3 cr). Fabricating and pricing of wholesale and retail cuts of meat: technology of fresh and processed meat; sausage making; quality control. Two lec and one 3-hr lab per wk. Prereq: 263.

299 (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

303 Live Animal and Carcass Eval I (3 cr). Eval and selection of cattle, sheep, and swine for herd replacements; eval of market animals; carcass eval and grading, and factors that affect quality and quantity of meat; visual and objective appraisals. One lec and two 3-hr labs per wk; four 1-day and four ½-day field trips or equiv time.

304 Live Animal and Carcass Eval II (3 cr). Emphasis on use of records in selection and utilization of carcass value in pricing live market animals; factors that affect the econ value of meat animals. Students participate in live animal-carcass eval contests. One lec and two 3-hr labs per wk; four 1-day and four ½-day field trips in addition to contests or equiv time. Prereq: 303.

305 Animal Nutrition (3 cr). 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: organic chem or biochem.

306 Feeds and Ration Formulation (4 cr). Appl of prin of nutrition to ration formulation for poultry and livestock; eval feedstuffs for use in ration formulation. Three lec and one 2-hr lab per wk. Prereq: 305 or equiv.

321 Beef Cattle Science (3 cr). Breeding, feeding, and mgmt; commercial and purebred enterprises; mgmt of beef cattle on ranges, pasture, and in the feedlot.

ID322 Sheep Science (3 cr). Appl of the prin of genetics, reproduction, nutrition, health, and marketing to the mgmt of commercial and purebred sheep; new dev related to the sheep industry; production, eval, and utilization of wool. Two lec and one 2-hr lab per wk.

323 Dairy Cattle Mgmt (3 cr). Establishing a dairy farm, housing and managing large dairy herds, selection of breeding cattle, and marketing quality milk. Two lec and one 2-hr lab per wk; one 1-day field trip or equiv time.

WS326 Swine Production (3 cr). WSU AS 387. Prin of breeding, feeding, mgmt, and marketing of swine. Two lec and one 3-hr lab per wk. Prereq: 305, Biol 351.

328 Commercial Poultry and Egg Production (3 cr). Modern poultry breeding, reproduction, nutrition, and egg and poultry products; emphasis on housing and related environmental factors. Two lec and one 2-hr lab per wk; one 1-day field trip.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

403 (s) **Workshop** (cr arr). Normally offered in nutrition, breeding, products, mgmt. Graded P/F. Prereq: perm.

410 Production and Processing Practices (1 cr, max 2). Livestock, dairy, and poultry production; processing practices and facilities. One 7-day field trip or equiv time. Graded P/F.

WS413 Physiology of Lactation (3 cr). Alt/yrs 79-80. WSU AS 413. Endocrine system and physiology of milk secretion, incl bovine mammary anatomy, dev, endocrine control, and synthesis of milk. Prereq: VS 371.

WS415 Animal Nutrition Lab (1 cr). WSU AS 415. Proximate analysis, bomb calorimetry and other selected lab methods related to nutrition. Three hrs of lab per wk. Prereq: 305.

421 Population Genetics (3 cr). Same as Genet 421. Gene frequency analysis; effects of natural and artificial selection on the genetic composition of populations; inheritance of quantitative characters; concepts of heritability; effects of inbreeding and outbreeding on populations. Prereq: Genet 314 or equiv.

422 Animal Breeding (3 cr). Same as Genet 422. Appl of genetic prin to the improvement of farm animals; effects of inbreeding, outbreeding, assortative, and disassortative mating on animal populations; selection for economically important traits; heritability; genetic correlations; use of selection indexes. Prereq: Genet 314 or equiv.

450 Proseminar (1 cr, max 2). Special topics in animal sc.

451 Endocrine Physiology (3 cr). Same as Zool 417. Structure and physiology of glands of internal secretion and their hormonal effects on processes of growth, dev, metabolism, and production of vertebrates; minor emphasis on invertebrates. Prereq: Biol 202 and organic chem or biochem or perm.

452 Physiology of Reproduction and Lactation (3 cr). Physiology of reproduction of animals; structure, growth, dev, and physiology of the mammary gland. Prereq: Biol 202 and organic chem or biochem or perm.

453 Physiology of Reproduction and Lactation Lab (1 cr). Lab in reproduction and the structure, growth, dev, and physiology of the mammary gland. One 3-hr lab per wk. Prereq: 452 or Zool 411 (may be concurrent).

ID454 Artificial Insemination and Pregnancy Detection (2 cr). Anatomy and physiology of pregnant and nonpregnant reproductive systems; artificial insemination; male reproduction; pregnancy detection in domestic livestock. Enrollment limited to 20 students. Two 2-hr lec-labs per wk. Graded P/F. Prereq: 452 or Zool 411 (may be concurrent) and perm.

ID472 Meat Science (3 cr). Alt/yrs 78-79. Growth and dev of meat animals; factors affecting quantity and quality of meat. Prereq: 263 and biochem.

499 (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

500 Master's Research and Thesis (cr arr). Graded P/F.

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq:perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

511 Animal Nutrition (3 cr). Alt/yrs 78-79. Biochem and physiological aspects of nutrition of higher animals and man; function and metabolism of nutrients. Prereq: perm.

WS512 Energy Metabolism (3 cr). Alt/yrs 78-79. WSU AS 561. Biochem, physiological, and nutritional aspects of energy metabolism. Prereq: 305, 306, Chem 380.

ID513 Microbiol and Physiology of Ruminant Nutrition (3 cr). Alt/yrs 79-80. Physiology and microbial aspects of ruminant digestion and their influence on the metabolism of extraruminal tissues; interp of nutritive requirements in terms of rumen microbial activities; eval of research tech. Prereq: perm.

514 Physiology of Nonruminant Nutrition (3 cr). Alt/yrs 79-80. Physiology of digestion, absorption, and metabolism of nutrients in monogastric animals and birds; biol eval of nutrients and nutritional interrelationships. Prereq: perm.

ID&WS520 Seminar in Animal Physiology (1 cr, max arr). WSU AS 520. Current dev in animal physiology.

522 Statistical Genetics (3 cr). Same as ApSt 522 and Genet 522. Statistical tech used in population genetics research; methods of estimating heritability, genetic correlations, and phenotypic correlation; constr of selection indexes; mating systems; genetic homeostasis. Prereq: perm.

WS526 Adv Reproduction (4 cr). Alt/yrs 78-79. WSU AS 526. Physiology of sexual maturation; gametogenesis; sexual cycle; fertilization; embryonic dev; physiological, chem, and immunological characterization of hormones of reproduction. Three lec and three hrs of lab per wk. Prereq: 452 or equiv.

551 Adv Endocrine Physiology (3 cr). Biochem and physiological properties of hormones; lab tech in experimental endocrinology. Two lec and one 2-hr lab per wk. Prereq: 451, Chem 482.

WS596 Adv Topics in Animal Sciences (1-2 cr, max arr). WSU AS 598. Recent research in various disciplines of animal sc.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

Anthropology—Anthr

Roderick Sprague, Head, Dept. of Sociology/Anthropology (101 Faculty Office Complex West). Faculty: G. Ellis Burcaw, Thomas L. Grigsby, Ruthann Knudson, David G. Rice, Roderick Sprague.

PREREQUISITE: Ordinarily three cr in lower-div courses in anthro are required for registration in upper-div courses in this field, 301 excepted; other exceptions by perm.

109 Archaeology for the Amateur (3 cr). Intro to archaeological field methods, elem analysis, and interp of local finds. Six 1-day field trips.

110 Intro to Physical Anthro and Archaeology (3 cr). Theories, methods, and findings of human paleontology, prehist, and racial types.

120 Intro to Social Anthro (3 cr). Theories, methods, and findings of human culture and language.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

223 Western Ranching Culture (3 cr). Cultural ecology of livestock ranching; sheepmen, cattlemen, settlers. Prereq: 120 or 301.

224 The Basque People (3 cr). Ethnohist of the Basque Country, Latin America, and Western U.S. Prereq: 120 or 301.

225 Aboriginal North American Indian (3 cr) (C). Origins, physical types, languages, and cultures of American Indians.

299 (s) **Directed Study** (cr arr). Prereq: perm.

301 Study of Man (3 cr) (C). Not open for cr to majors in the Dept of Soc/Anthro or to students who have taken 110 or 120 or equiv. Nontech intro to anthro. Three 1-day field trips.

320 Peoples of the World (3 cr). Societies of Eurasia, Africa, Americas, Australia, and islands of the Pacific. Prereq: 120 or 301.

321 Culture and Personality (3 cr). Method and theory of the interrelationships between the indiv and culture.

322 Racial and Ethnic Relations (3 cr) (C). Same as Soc 322 and AfrAm 322. Racial, ethnic, and minority groups in the U.S.

325 Indians of Idaho (3 cr). Aboriginal American Indian societies of northwestern North America; emphasis on Idaho. Three 1-day field trips.

330 World Prehistory (3 cr). Prehistoric cultures of Old and New Worlds; tech of excavation; methods of archaeological analysis.

400 (s) **Seminar** (cr arr). Prereq: perm.

402 Hist of Anthropological Theory (3 cr). Anthro methods and theory in a developmental sequence. Prereq: 120, 320, 420.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

409 Anthro Field Methods (1-8 cr, max 8). Field training in archaeology and/or social anthro.

420 Ethnological Issues (3 cr). Contemporary theoretical debates in cultural ecology, ethnography, kinship, and econ anthro. Prereq: 120, 320.

421 Belief Systems of Simpler Societies (3 cr). Method and theory of comparative anthro study of religion.

ID424 Seminar in Basque Studies (3 cr). Reading and/or speaking knowledge of Basque, French, or Spanish recommended but not required. Prereq: 224.

ID425 Contemporary North American Indian (3 cr) (C). Current state of American Indian societies. Three 1-day field trips.

427 Peoples of Africa (3 cr). Same as AfrAm 427. Native societies; contemporary problems arising from European penetration; emergence of native states.

435 North American Prehistory (3 cr). Theories, methods, and findings of prehistoric North American archaeology.

WS480 Descriptive Lingusitics (3 cr). WSU 454. Phonological, grammatical, and semantic structures of natural language.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

509 Anthro Field Methods (1-8 cr, max 8). Indiv field work in approved areas. Prereq: perm.

ID521 Seminar in Acculturation (2-4 cr, max 4). Prereq: perm.

ID531 Historical Archaeology (3 cr). Excavation and analysis of historical archaeological sites. Three 1-day field trips. Prereq: perm.

WS571 Interp of Quaternary Terrestrial Sediments (4 cr). WSU 570. Pleistocene paleoclimatic changes as inferred from sediments, landforms, and fossil soils of archaeological importance. Three lec and one 3 hr lab per wk. Prereq: perm.

WS572 Physical Stratigraphy of Archaeological Sites (4 cr). WSU 571. Recognition, description, sampling, and analysis of

sediments typically found with human cultural materials. Three lec and one 3-hr lab per wk. Prereq: perm.

ID573 Paleoecology (3 cr). See Geol ID515.

WS576 Palynology (4 cr). Pollen morphology and pollen analysis; pollen ontogeny, morphology, preservation, size variation, and dispersion. Three lec and one 3-hr lab per wk.

WS577 Pollen Analysis (4 cr). Tech of pollen analysis and appl to quaternary studies; opportunity to work with sediments of past vegetational sequences. Three lec and one 3-hr lab per wk. Prereq: WS576.

WS580 Linguistic Field Methods (3 cr). WSU 554. Elicitation, analysis, and description of a natural language, utilizing a native speaker as informant. Prereq: perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Applied Statistics—ApSt

Dale O. Everson, Coordinator (30 Ag. Sc. Bldg.). Faculty: C. Randall Byers, James E. Crandall, Donald Del Mar, Louis L. Edwards, Jr., Dale O. Everson, Donald F. Haber, Wayne R. Hager, Joel R. Hamilton, Charles R. Hatch, Edward L. Kelly, Victor E. Montgomery, Philip D. Olson, Clarence J. Potratz, Anthony L. Rigas, Ping-Tsoong Sun.

Courses in this subject area are under the general jurisdiction of the University Curriculum Committee and its Subcommittee on Information Science.

217 Intro to Stats for the Behavorial Sciences (3 cr). See Psych 217.

301 Engr Stats (3 cr). See ES 301.

307 Prin of Stats (3 cr) (321). Same as FWR 307. Statistical inference, regression, correlation, enumeration data, linear models, analysis of variance, elem design. Two lec and one 2-hr lab per wk. Prereq: Math 111, 140, or perm.

320 Probability and Stats (3 cr). See Math 320.

406 Statistical Research Methods (3 cr). Biometrical analysis and interp of research problems, analysis of variance, covariance, correlation, multiple regression, experimental design. Prereq: 307 or perm.

418 Interm Stats for the Behavioral Sciences (3 cr). See Psych 418.

422 Sampling Methods (2 cr). Simple and stratified random sampling, systematic sampling, cluster sampling, double sampling, area sampling, analyt surveys, and estimation of sample size. Prereq: 307 or 320.

433-434 Numerical Analysis (3 cr). See Math 433-434.

451-452 Probability Theory and Math Stats (3 cr). See Math 451-452.

457 Nonparametric State (2 cr). See Bus 457.

502 (s) **Directed Study** (cr arr). Prereq: perm.

R505 Engr Stats (1-3 cr). See ES R505.

507 Experimental Design (3 cr). Constructing and analyzing experimental investigations; matrix tech for unequal subclass numbers; confounding factorials; incomplete block designs; response surface methodology. Prereq: 406 or equiv.

514 Adv Nonparametric Stats (3 cr). Analyt procedures for data when the dependent variable has ordinal or nominal properties; elaboration of chi-square procedures; randomization procedures for ranked data and data having internal properties; efficiency of nonparametric procedures and robustness of comparable parametric methods. Prereq: 406 or perm.

521 Multivariate Analysis (3 cr). The multivariate normal; conditional distributions for multinormal variates; Hotelling's T^2, discriminant functions, multivariate analyses of variance, canonical correlations, and factor analysis. Prereq: 406.

522 Statistical Genetics (3 cr). See AnSc 522.

525 Econometrics (3 cr). See AgEc 525.

R547 Applied Time Series Forecasting (3 cr). See EE R547.

Architecture—Arch

Paul L. Blanton, Head, Dept. of Art and Architecture (102 Art and Arch. North). Faculty: Jerry A. Bancroft, Robert M. Baron, Ronald D. Bevans, Paul L. Blanton, Anton A. Eder, Rosario P. Fasolino, Larry G. Fisher, William B. McCroskey, Mark L. Pence, William P. Sloan, Charles M. Tinder, R. Ronald Wells, Thomas Wood.

Note: Certain courses formerly listed here are now listed under the headings **Interior Design** and **Landscape Architecture.**

155-156 Design and the Creative Process (2 cr). Intro to design; lec, readings, and experiences to familiarize the student with the hist and dev of the design tradition and its appl in the visual, environmental, and communicative arts; emphasis on critical eval and understanding of the design process and its relationship to human society.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

253 Basic Design Review (2 cr). Intro to the design process; studio problems to familiarize the student with the basic design process and to explore design through projects, lec, and readings. Two 2-hr studios per wk and assigned work.

255 Graphic Comm (2 cr). Intro the process of graphic comm; studio projects to explore graphics through experiences, lec, and readings. Two 2-hr studios per wk and assigned work.

256 Basic Arch Design (2 cr). Intro to form, space, and systems concepts in arch. Two 2-hr studios per wk and assigned work.

266 Materials and Methods (3 cr). Materials characteristics from manufacture to constr; production info and resource lit investigation.

299 (s) **Directed Study** (cr arr). Prereq: perm.

353-354 Arch Design I (5 cr). Expansion of student vocab of arch 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 hist, research, and materials of constr related to arch design; encouragement of student experimentation and creativity. Three 3-hr studios per wk and assigned work; one 7-day field trip during yr.

365-366 Bldg Technology I (3 cr). Arch 365: basic structural design incl elem statics and prin and technology of wood structural design. Arch 366: prin and technology of structural reinforced concrete bldg design, applied to practical bldg problems by integrating solutions with Arch Design studio. Coreq: 353 for 365, 354 for 366. Prereq: 353 and 365 for 366.

383 Environmental Analysis (2 cr). Goals and ident of arch form determinants: ident and analysis of arch programming criteria; appl of computer tech.

384 Environmental Analysis (2 cr). Computer appl in arch; current tech for using the computer as a tool in the design process and potential future dev; practical appl in graphics, scheduling, structures, estimating, office mgmt, and other areas of design; prep of input data for existing prog and analysis of output info. Prereq: 383 or perm; prior experience in computer programming desirable.

385-386 Hist of Arch (3 cr). Arch 385: hist of ancient and medieval arch—prehistoric, Egyptian, West Asian, Aegean, Greek, Roman, Early Christian, Byzantine, Islamic, Romanesque, and Gothic periods. Arch 386: hist of Renaissance and Baroque periods in Europe from 1400 to 1800 and arch from the 17th to 20th centuries.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

453-454 Arch Design II (5 cr). Study directed at specifics of bldg design synthesizing related course work into a comprehensive problem solution from multiple-building planning to working drawings on a single bldg. Three 3-hr studios per wk and assigned work; one 7-day field trip during yr.

455-456 Arch 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 456, the student undertakes a self-directed arch design study with faculty consultation. Three 3-hr studios per wk and assigned work.

457 Intro to Community Dev (3 cr) (C). Process of community design; organizing and financing dev projects; community infrastructure and quality of the physical environment, especially the arch of public spaces, the urban landscape, and community facilities, both public and private.

463 Environmental Control Systems (3 cr). Design of water systems, heating, and a/c for arch appl.

464 Environmental Control Systems (3 cr). Arch design of lighting and elec in bldgs; prin and technology of design for energy, conservation, and alternative energy systems (solar energy, wind power, methane, wood, and hydro power design for local site use).

465-466 Bldg Technology II (3 cr). Arch 465: structural design with steel in bldgs; prin and technology of steel design applied to practical bldg problems by integrating solutions with Arch Design studio. Arch 466: structural design of bldgs with seismic analysis; prin and technology of masonry design. Coreq: 453 for 465; 454 for 466. Prereq: 353, 354, 365, and 366 for 465; 453 and 465 for 466.

473 Arch Programming (2 cr). Research and eval for arch thesis program; research methods and their appl.

474 Seminar: Problems in Environmental Design (2 cr). Issue disc of changing problems and concerns in environmental design: research methods, environmental perception, man and the design of his physical environment, arch theory and criticism.

475-476 Professional Practice I-II (3 cr). The architect's duties and responsibilities in practice (constr documents and contracts), project supervision, office admin, and comprehensive services; specification writing, unit costs, and bldg estimation.

483 Intro to City Planning (3 cr). Hist and theory of city planning and problems associated with urban growth.

484 City Planning (2 cr). Analysis of 20th-century planning in the U.S. and Europe; group housing and urban dev patterns. Prereq: 483.

485-486 Bldg Technology III (2 cr). Seismic analysis in basic and complex bldgs; special problems (bldg type); environmental control, comm, and sound control systems.

493-494 Seminar in Urban Studies (2 cr). See Inter 493-494.

497 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

498 (s) **Proseminar** (1-3 cr, max 6). Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

562 Concepts in Contemporary Habitation (3 cr). The house in hist establishing precedents for the current pattern of housing with a critical analysis to determine their suitability to the requirements of today's society.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Art

Paul L. Blanton, Head, Dept. of Art and Architecture (102 Art and Arch. North). Faculty: Frank A. Cronk, Nelson S. Curtis, James A. Engelhardt, David F. Giese, H. Lynne Haagenson, David L. Moreland, George H. Roberts, George T. Wray.

101-102 Survey of Art (2 cr). Historical overview of man's artistic production to promote an understanding and appreciation of the various arts with emphasis on painting, sculpture, and arch.

111-112 Drawing I (2 cr). Freehand drawing; emphasis on expressive use of materials. Two 2-hr studios per wk and assigned work.

121-122 The Creative Process and Design (2 cr). Intro to the design process; studio problems to familiarize the student with the basic design process, elements of design and dev of indiv design criteria as related to traditional and experimental concepts of design; studio problems explore basic design through two- and three-dimensional studies, experiences, and readings. Two 2-hr studios per wk and assigned work.

200 (s) **Seminar** (cr arr). Prereq: perm.

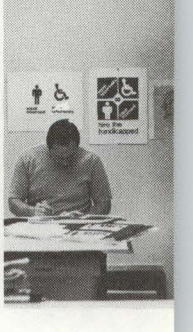
203 (s) **Workshop** (cr arr). Normally offered in painting, water color, sculpture, drawing, ceramics, design, printmaking, and jewelry. Prereq: perm.

204 (s) **Special Topics** (cr arr).

211-212 Drawing II (3 cr). Life drawing; work with various media to develop an understanding of the human figure. Two 2-hr studios per wk and assigned work. Prereq: 111-112.

221-222 Design II (2 cr). Adv design explored through various media in two- and three-dimensional problems. Two 2-hr studios per wk and assigned work.

223-224 Graphic Design I (2 cr). Art 223: basic letter forms and calligraphy. Art 224 (same as Comm 224): typography and layout. One lec and one 3-hr studio per wk.



231-232 Painting I (2 cr). Intro to the basic fundamentals of painting. Two 2-hr studios per wk and assigned work.

233-234 Water Color I (2 cr). Intro to tech of water color painting by indiv instruction and group criticism. One lec and one 3-hr studio per wk. Prereq: 111-112.

241-242 Three-Dimensional Design (2 cr). Studio work in three-dimensional design; basic spatial design concepts; creation of expressive order in space with attention to form, space, arrangement, movement, proportion, volume, unity, and contrast. Two 2-hr studios per wk plus assigned work.

251-252 Printmaking I (2 cr). Intro to relief and intaglio methods of printmaking; emphasis on sensitivity to materials and indiv dev.

261-262 Ceramics I (2 cr). Intro to clay forming tech, wheel-thrown and hand-built forming methods; ceramic design concepts; dev of indiv design criteria; glaze experimentation; fundamental types of ceramic ware; kiln procedures. Two 2-hr studios per wk plus assigned work.

271-272 Jewelry I (2 cr). Intro to basic jewelry materials and tech; basic jewelry design concepts; dev of indiv design criteria. Two 2-hr studios per wk plus assigned work.

299 (s) **Directed Study** (cr arr). Prereq: perm.

301-302 Hist of Painting (3 cr). Tech study of the great occidental painters.

311-312 Drawing III (3 cr). Adv drawing from the model, nature, and abstract form; emphasis on indiv dev. Two 2-hr studios per wk and assigned work. Prereq: 211-212.

323-324 Graphic Design II (3 cr). Problems in illustration and advertising design. One lec and two 3-hr studios per wk; one 2-day field trip one semester.

331-332 Painting II (3 cr). Interm painting from the model, nature, and abstract form. Two 3-hr studios per wk and assigned work. Prereq: 111-112 and 231-232.

333-334 Water Color II (2 cr). Tech of water color painting; sketching from still life and nature. One lec and one 3-hr studio per wk. Prereq: 111-112.

335-336 Composition (3 cr). Pictorial composition through student problems. Prereq: 111-112 and 211-212 or 331-332.

341-342 Sculpture I (2 or 4 cr). Studio investigation of basic sculptural concepts, materials, and tech. Two 2-hr studios per wk and assigned work for each 2 cr. Prereq: 241-242.

351-352 Printmaking II (3 cr). Tech of lithography stone, plate, photoplate transfer processes, color printing; emphasis on indiv dev. Two 2-hr studios per wk and assigned work.

361-362 Ceramics II (3 cr). Continuation of basic clay-forming and glazing tech; emphasis on expressive use of materials, design criteria, and dev of indiv concepts. Three 2-hr studios per wk and assigned work. Prereq: 261-262.

363-364 Clay and Glaze Formulation (2 cr). Tech of clay and glaze formulation and experimentation; basic raw materials available in the ceramic industry, methods of calculation and testing clays and glazes; emphasis on indiv experiments and relationship of clay and glaze qualities to indiv design concepts. One lec and one 3-hr studio per wk. Prereq: 261-262 or perm.

371-372 Jewelry II (2 or 4 cr). Adv jewelry tech: casting, etching, enameling, metalsmithing, and related areas, processes, and materials; emphasis on both tech and design. Two 2-hr studios per wk and assigned work for each 2 cr. Prereq: 271-272.

391-392 Crafts in Art Ed (2 cr). Design of leathers and other craft materials.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Normally offered in painting, water color, sculpture, drawing, ceramics, design, printmaking, jewelry, art ed, elem school art, jr high school art, and sr high school art. Prereq: upper-div standing and perm.

404 (s) **Special Topics** (cr arr).

423-424 Graphic Design III (3 cr). Adv problems in illustration and advertising design; lec on production and studio practice. One lec and two 3-hr studios per wk; one 2-day field trip one semester.

431-432 Painting III (2-4 cr, max 8). Adv painting with emphasis on the indiv dev of the student. Two 3-hr studios per wk and assigned work. Prereq: perm.

433-434 Water Color III (2 cr).

441-442 Sculpture II (4 cr). Studio investigation of adv sculptural concepts, materials, and tech. Two 4-hr studios per wk and assigned work. Prereq: perm.

461-462 Ceramics III (3 cr). Adv indiv work in clay-forming tech, glaze experimentation, and kiln procedures; continuation of indiv studio work. Three 2-hr studio sessions per wk and assigned work. Prereq: 261-262, 361-362.

463 (s) **Sr Thesis** (2 cr, max 4). Prep of sr thesis show in one of the following areas: general art, sculpture, painting, design, ceramics, jewelry; final grade assigned by the entire art faculty after the show. Prereq: admission to B.F.A. option.

465 (s) **Ceramic Problems** (4 cr, max 16). Adv indiv studies in specialized areas of ceramics; during alternating semesters the class will concentrate in one or more of the following areas: salt firing, low-fire, raku, porcelain, kiln constr, and kiln firing; emphasis will be placed on indiv design concepts, understanding of the inherent qualities of each specialized area under study, and the student's ability to relate indiv design concepts to the specialized area of study. One lec and one 3-hr studio session per wk and indiv work. Prereq: 261-262 and perm.

471-472 Jewelry III (4 cr). Adv jewelry tech with emphasis on design. Two 4-hr studios per wk plus assigned work. Prereq: perm.

497 (s) **Sr Proseminar** (2 cr, max 4). Seminar in professional problems in art; emphasizing specific areas, contemporary tendencies in art, or problems of professional practice. Graded P/F. Prereq: upper-div standing.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by graduate students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (2 or 4 cr, max 12). Indiv 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: upper-div standing and perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq:perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Studio Problems** (3-5 cr, max 10).

505 (s) **Special Topics** (cr arr).

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Bacteriology—Bact

Campbell M. Gilmour, Head, Dept. of Bacteriology and Biochemistry (14 Life Sc. Bldg.). Faculty: Guy R. Anderson, Sidney M. Beck, Donald L. Crawford, Campbell M. Gilmour, Richard C. Heimsch, Al J. Lingg, John E. Montoure, George W. Teresa.

101 Food and Life (3 cr). Concepts of food processing, additives, regulations, nutrition, fad diets, and food problems.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

250 General Bact (4 cr). Primarily for students in the sc. Two lec and two 2-hr labs per wk. Prereq: Chem 103 or 111.

254 Public Health and Hygiene (3 cr) (C). Applied hygiene and sanitation from the standpoint of bacteriological and related sc.

299 (s) **Directed Study** (cr arr). Prereq: perm.

304 Pathogenic Bact (3 cr). Disease-producing organisms; cultural, biochem, and morphological characteristics that serve as means of ident. Prereq: 250.

305 Pathogenic Bact Lab (2 cr). Isolation and ident of disease-producing organisms. Two 2-hr labs per wk. Prereq or coreq: 304.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

400 (s) **Seminar** (cr arr). Prereq: perm of dept.

402 Food and Applied Microbiol (4 cr). Microorganisms important in foods; spoilage, preservation, and food-borne disease. Two lec and two 3-hr labs per wk. Prereq: 250.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

409 Immunology (3 cr). Theory and mechanisms of the immune response. Prereq: 250.

410 Immunology Lab (2 cr). Serologic and immunochemical exam of the immune response. Two 2-hr labs per wk. Prereq or coreq: 409.

414 Clinical Lab Methods (4 cr). Procedure, theory and appl. Two lec and two 3-hr labs per wk. Prereq: 250, 304, Chem 253.

421 Clinical Diagnosis: Internship (1-32 cr, max 32). Lab methods used in accredited hospital and public health labs. Twelve months training. Prereq: 414.

425 Soil and Aquatic Microbiol (3 cr). Same as Soils 425. Biogeochem activites and relationships of microorganisms in soil

and aquatic environments. Two lec and one 3-hr lab per wk. Prereq: 250.

460 Microbial Physiology (5 cr). Concepts of microbial physiology; growth, metabolism, regulation, variation, structural-functional relationships. Three lec and two 2-hr labs per wk. Prereq: 250.

481 Virology (3 cr). See VS 481.

483 Virology Lab (1 cr). See VS 483.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Areas normally offered are: aquatic, food, immunolgy, medical, microbial ecology, physiology, and soils. Prereq: perm.

503 Adv Microbial Physiology (2 or 4 cr). Use of current lit to study recent advances in the physiology of selected microorganisms. Registration for 4 cr requires 2 additional projects. Prereq: 460 or perm.

504 (s) **Workshop** (cr arr). Prereq: perm.

505 Microbial Fermentations (2-4 cr). Alt/yrs 79-80. Organisms, processes, and analyt methods. Two lec, or two lec with labs per wk. Prereq: 250, Chem 372, or perm.

507 Bacterial Taxonomy (2 cr). Taxonomic groups of bacteria; philosophies of classification. Prereq: 250, 304.

512 Microbial Genetics (2-4 cr). Same as Genet 512. Genetics of microorganisms; reproduction, variation, and heredity. Prereq: elem course in genetics is recommended.

516 Adv Fish Diseases (4 cr). See FWR 516.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Biochemistry—Biochem

Campbell M. Gilmour, Head, Dept. of Bacteriology and Biochemistry (14 Life Sc. Bldg.). Faculty: Jorg A. L. Augustin, Karen R. Davis, G. Michael Hass, Michael D. Kluetz, Duane J. Le Tourneau, Lois K. Miller, Paul Muneta, Arthur W. Rourke, Robert D. White, Alvin C. Wise, James D. Willet.

380 Intro Biochem (4 cr). Same as Chem 380. Not open to students who have taken former Biochem 205 or Chem 480; max 7 cr in any combination of 380 or 480, and 481 and 482. General survey with lab training in modern methods. Three lec and one 3-hr lab per wk. Prereq: Chem 103, 275, and 278.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Undergrad Research (1-2 cr, max 4). Indiv study. Prereq: sr standing and perm.

404 (s) **Special Topics** (cr arr).

481-482 Biochem (3 cr). Same as Chem 481-482. Modern biochem. Max 7 cr in any combination of 380 or 480, and 481 and 482. Prereq: Chem 372, and Chem 302 or 306, or perm.

483-384 Biochem Lab (2 cr). Same as Chem 483-484. Two 3-hr labs per wk. For 483, prereq: Chem 253; coreq: 481. For 484, prereq: 483; coreq: 482.

486 Plant Biochem (3 cr). Alt/yrs 79-80. Same as Chem 486. Composition and metabolism of higher plants. Prereq: 380.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

581 Carbohydrates (3 cr). Alt/yrs 79-80. Same as Chem 581. Structure, function, and metabolism of carbohydrates. Prereq: 482 or perm.

582 Proteins and Enzymes (4 cr). Same as Chem 582. Protein structure and function; mechanism of enzyme action. Prereq: 481.

583 Lipids (3 cr). Alt/yrs 78-79. Same as Chem 583. Structure, function, and metabolism of glycerides and sterols; membrane structure. Prereq: 482.

584 Nucleic Acids (3 cr). Alt/yrs 78-79. Same as Chem 584. Structure, function, and metabolism of nucleic acids. Prereq: 482.

585 Physical Biochem (3 cr). Alt/yrs 79-80. Same as Chem 585. Appl of physical chem to biol systems, processes, and structure. Prereq: 482.

ID&WS589 Adv Topics in Biochem (1-9 cr, max 9). Same as Chem ID589, WSU BC/BP 568. Recent research in enzymes, hormones, complex lipids, vitamins, nucleic acids, antibiotics, viruses, and biochem genetics. Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Biology—Biol

Kenneth A. Laurence, Head, Dept. of Biological Sciences (115 Life Sc. Bldg.). Faculty: Doyle E. Anderegg, O. Clifford Forbes, Earl J. Larrison, John L. McMullen, Richard J. Naskali, Fred W. Rabe, Arthur W. Rourke, Edmund E. Tylutki, Richard L. Wallace.

100 Man and the Environment (4 cr). Not open to majors or for minor cr. Biol prin that relate to everyday living, incl ecosystems, pollution, reproduction, and disease.

150 Heredity and Man (2 cr). Same as Genet 106. Not open for cr to majors, minors, or students who have previous cr in genetics. Inheritance with emphasis on man.

201 Intro to the Life Sciences (4 cr). Biol prin important in understanding animals, plants, and microorganisms; cytology; ecology; evolution; genetics; growth; molecular biol; physiology. Three lec and two 2-hr labs per wk. Prereq: one sem college chem recommended.

202 General Zool (4 cr). Anatomy, embryology, histology, and physiology of vertebrate and invertebrate animals; the animal kingdom. Three lec and two 2-hr labs per wk. Prereq: 201.

203 General Bot (4 cr). Growth, dev, and econ of angiosperms in relation to heredity and environment; comparisons of angiosperms with other plant-kingdom div. Three lec and two 2-hr labs per wk. Prereq: 201.

207 Intro to Oceanography (3 cr). Geological, physical, chem, and biol features of oceans; biol emphasized. Prereq: course in biol and soph standing.

331 General Ecology (3 cr). Ecological prin of plants and animals; structure and function of the ecosystem; major ecosystems of the world. Two lec and one 1-hr dem per wk. Prereq: one yr of biol.

351 General Genetics (3 cr) (C). Same as Genet 314. Genetic mechanisms in animals, plants, and microorganisms. Prereq: 201.

352 Experimental Genetics (1 cr). Same as Genet 315. One 3-hr lab per wk. Prereq or coreq: 351 or Genet 314.

361 Biol Lit (1 cr). Botanical and zoological lit. Prereq: major in one of the life sc or 20 cr in any combination of biol, bot, or zool.

405 Biol Lab Procedures (2 cr). Lab org, prep, and demonstrations using readily available, inexpensive materials.

442 Biol Evolution (3 cr) (C). Genetic, ecological, and paleontological aspects of evolution, incl that of man. Prereq: 202 and 351, or perm.

443 Bioecology (3 cr). Ecology of plants and animals in the field. Field labs and at least one weekend field trip.

445 Taxometrics (3 cr). Quantitative approach to classification;

analysis of numerical and computer taxonomics, phenetic and phylogenetic systems, codification of biol entities; appl of info theory to taxonomy; a numerical taxonomic problem worked out on a computer. Prereq: ApSt 307 or perm.

451 Cytology (3 cr). Structure and function of the nucleus and cytoplasm in animal and plant cells. Two lec and one 3-hr lab per wk. Prereq: 351.

462 Biol Field and Museum Techniques (3 cr). Plants and animals in research and exhibit museums; org and admin of collecting expeditions, types of specimens and field data obtainable, methods of analysis, storage of specimens, exhibit tech, dissemination of research results. Two lec and one 3-hr lab per wk; one 4-day field trip. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 Special Topics (cr arr). Graded P/F. Prereq: perm.

505 Colloquium (1 cr, max 2).

555 Physiological and Molecular Genetics (2-3 cr). Same as Genet 537. Prereq: 351 or Genet 314.

Botany—Bot

Kenneth A. Laurence, Head, Dept. of Biological Sciences (115 Life Sc. Bldg.). Faculty: Douglass M. Henderson, John L. McMullen, Richard J. Naskali, Lorin W. Roberts, George G. Spomer, Edmund E. Tylutki.

241 Systematic Bot (3 cr). Classification and ident of flowering plants; local flora. Two 1-hr lec and two 2-hr labs per wk. Prereq: Biol 203 or perm.

311 Plant Physiology (3 cr). Functions of plant growth and dev. Prereq: Biol 203 and organic chem.

312 Plant Physiology Lab (2 cr). Two 3-hr labs per wk. Prereq or coreq: 311.

325 Morphology of Lower Plants (4 cr). Structures, life hist, classification, and phylogeny of fungi and algae. Two lec and two 3-hr labs per wk. Prereq: Biol 203.

326 Morphology of Bryophytes and Vascular Plants (4 cr). Structure of life hist, classification, and phylogeny of liverworts, mosses, ferns, clubmosses, horsetails, conifers, and flowering plants. Two lec and two 3-hr labs per wk. Prereq: Biol 203.

364 Botanical Microtechnique (3 cr). Methods of treating plant tissues for microscopic exam or histochem tests. Two 3-hr labs per wk. Prereq: Biol 203 or perm.

381 Mushroom Ident (1 cr). Methods of mushroom study; emphasis on the natural hist of higher basidiomycetes and ascomycetes of the Northwest. Two 2-hr lec-labs per wk for the first 8 wks; one field trip (Fri-Sat-Sun) to Priest Lake. Prereq: course in biol.

382 Mold Ident (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 labs per wk for second 8 wks; two field trips. Prereq: course in biol.

401 Techniques of Plant-Tissue Culture (2 cr). Isolation and culture of higher plant cells, tissues, and organs. Two 3-hr labs per wk. Prereq: perm.

413 Mineral Nutrition (3 cr). Alt/yrs 79-80. Same as Soils 448. Uptake and metabolism of mineral elements in higher plants. Two lec and one 2-hr disc per wk. Prereq: 311 and organic chem.

ID&WS421 Biol of Fungi (4 cr) (472). WSU PI P 421. Alt-yrs 78-79 ID, 79-80 WS. Life activity of fungi; structure, life hist, and classification. Two lec and two 3-hr labs per wk. Prereq: Biol 203 or perm.

425 Developmental Plant Anatomy (4 cr). Origin and dev of tissues and organs of vascular plants in relation to heredity, environment, and physiology. Eight hrs per wk. Prereq: Biol 203.

432 Plant Ecology (3 cr). General ecologic concepts and theory applied to plant populations and communities; intro to methods in plant ecology. Two lec and one 3-hr lab per wk; three 1-day field trips. Prereq: Biol 203, 331; Bot 241 recommended.

WS435 Synecology (3 cr). WSU 462. Structure, methods of analysis, and dynamic behavior of plant communities. Prereq: 241.

WS437 Field Ecology (2 cr). WSU 463. Structure, environmental relations, and dynamism of local semidesert, grassland, and forest communities. Six hrs of lab per wk; field trips. Prereq: WS435.

441 Agrostology (3 cr). Classification, distribution, and structure of grasses. One lec and two 3-hr labs per wk. Prereq: 241 and Biol 203.

474 Phycology (4 cr). Morphology and ecology of fresh water and marine algae; prin of classification; collection, ident, and making of permanent microscopic prep. Prereq: Biol 203.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 Special Topics (cr arr). Graded P/F. Prereq: perm.

512 Plant Growth Substances (3 cr). Alt/yrs 78-79. Hormonal regulation of physiological processes. Two lec and one 2-hr disc per wk. Prereq: 311 and organic chem.

532 Plant Environmental Biophysics (3 cr). Alt/yrs 78-79. Dynamics of plant-environment interactions; current methods of environmental analysis and control. Two lec and one 2-hr lab-disc per wk. Prereq: 432.

535 Plant Geog (3 cr). Alt/yrs 79-80. Same as Geog 525. Spatial relations of plants and plant communities as determined by intrinsic factors such as genetics and evolution, and extrinsic factors such as physiography, geol, climate, and climatic change; mechanisms of distribution; discontinuity patterns. Prereq: 432 or perm.

539 Physiological Ecology (2 cr). Alt/yrs 79-80. Physiology of adaptation to native habitats; basic concepts, theory, and current methods. Prereq: 432.

ID558 Genetics of Fungi (3 cr). Alt/yrs 78-79. Same as Genet 511. Genetic systems and sexuality of fungi. Prereq: ID&WS421, Biol 351, or perm.

WS575 Basidiomycetes (3 cr). Alt/yrs 78-79. WSU PI P522. Taxonomy, physiology, and reproduction of rusts, smuts and higher basidiomycetes. Two lec and one 3-hr lab per wk. Prereq: ID&WS421.

WS576 Ascomycetes and Fungi Imperfecti (2 cr). Alt/yrs 79-80. WSU PI P 523. Taxonomy, phylogeny, physiology, reproduction of ascomycetes and fungi imperfecti. One lec and one 3-hr lab per wk. Prereq: ID&WS421.

WS577 Lower Fungi (2 cr). Alt/yrs 79-80. WSU PI P 524. Taxonomy, phylogeny, physiology, and reproduction of aquatic and terrestrial phycomycetes and myxomycetes. One lec and one 3-hr lab per wk. Prereq: ID&WS421.

WS590 Adv Topics in Bot (2 cr). Recent research in plant science. Prereq: major in bot or equiv.

600 Doctoral Research and Dissertation (cr arr).

Business—Bus

C. Randall Byers, Dept. Head (335 Admin. Bldg.). Faculty: C. Randall Byers, Sherman F. Carter, Donald Del Mar, Eugene F. Golis, John H. Hallaq, Bradley D. Lockeman, Norman C. Olson, Philip D. Olson, Glen B. Owen, Jr., William H. Parks, Donald W. Seelye, Jerry L. Wegman, Hugh P. Williamson, Jr.

101 Intro to Bus Enterprises (3 cr). Not open to upper-div majors in the College of Bus and Econ. Private enterprise system; marketing, mgmt, finance, production; business-govt relationships, organized labor, ethical and social responsibilities of bus orgs.

133 Intro to Computer Info Systems (2 cr). May not be taken for cr after Engr 131 or Math 205. Same as CS 133. Survey of digital computer systems and appl, incl data representation, programming concepts and languages, societal implications, and govt regulation.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

231 Stats (4 cr). Same as ApSt 231. Intro to probability theory, statistical estimation, statistical inference, and regression analysis. Prereq: Math 112 or 180.

265 Legal Environment of Bus (3 cr) (C). Law and its relationship to society; legal framework of bus enterprises; court org and operation; private property and contract as basic concepts in a free enterprise system.

299 (s) **Directed Study** (cr arr). Prereq: perm.

301 Financial Mgmt (3 cr). Policies and practices involved in acquisition, control, and allocation of financial resources in bus orgs. Prereq: Acctg 202.

302 Financial Institutions and Credit (3 cr). Emphasis on financial intermediaries, investment banking, and govt financial institutions. Prereq: Econ 252.

311 Intro to Mgmt Theory (3 cr). Org, planning, leadership, and control; evolution of philosophies of mgmt, decision-making, motivation, human relations, and comm; org behavior and theory; historical and present mgmt practices, showing interrelationships between the needs and expectations of the indiv, the org, and society.

312 Industrial Mgmt (3 cr). Intro to production and operations mgmt, incl inventory, quality control, simulation tech, scheduling, production processes, job design, standards setting, plant layout, maintenance, product design, and queueing problems; analyt approach stressed in problem ident and modeling; quantification employed when feasible or necessary. Prereq: 231, 311.

321 Marketing (3 cr) (C). Marketing institutions and relationships with econ, political, legal and social environment; prin, functions, concepts, and issues of marketing within a firm and the relationship of marketing to other bus disciplines.

323 Prin of Advertising (3 cr) (C). Function; social and econ aspects; motivation, copy illustration, layout, and media; campaign planning. Prereq: 321 and jr standing.

324 Sales Mgmt (3 cr). Selecting, training, compensating, stimulating, supervising, and directing the selling efforts of an outside sales force; org and methods. Prereq: 321.

332 Quantitative Methods in Bus (3 cr). Same as ApSt 332. Survey of operations research; linear and dynamic programming, inventory, queueing, simulation, Markov, and bidding. Prereq: 231.

333 Intro to COBOL (2 cr). Same as CS 333. Intro to COBOL programming for bus, incl coverage of files and data base mgmt systems. Prereq: Engr 131.

350 Mgmt Info Systems (3 cr). Same as CS 350. Data processing appl for bus; intro to info systems; data base concepts; analysis, design, and implementation of computer-based infor systems and consideration of associated problems. Prereq: Engr 131, Acctg 202, or perm; prereq or corereq: Bus 311 or perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Investments (3 cr) (C). Security analysis and portfolio mgmt; types of securities and their suitability to various investment goals. One 1-day field trip. Prereq: 301.

402 Bus and Society (3 cr). Private enterprise's ethical and pragmatic relationships in international relations, national dev, indiv citizen's welfare, and U.S. govt structures.

403 Insurance (3 cr). Major branches of insurance; prin and practices.

404 Life Insurance (3 cr). Companies, contracts, uses, premium computations, and econ aspects. Prereq: 403 or perm.

405 (s) **Special Topics** (cr arr).

406 Problems in Financial Mgmt (3 cr). Analysis of selected financial mgmt problems; working capital mgmt, capital budgeting and valuation; research project and analysis of cases. Prereq: 301 and sr standing.

411 Org Theory (3 cr). Integration of classical org theory with the dev of human relations and organic open-system models; interpersonal comm, the role of tasks and technologies in determining appropriate org structures. Prereq: 311 or per.

412 Personnel Mgmt (3 cr). Basic personnel mgmt functions with heavy legal emphasis. Prereq: 311 or perm.

413 Human Relations in Business (3 cr). Worker motivation and dev through motivational comm, leadership style, and other relevant variables. Prereq: 311 or perm.

423 Retail Merchandising and Distribution (3 cr). Location, capital, and physical requirements, store org, personnel, merchandise, and pricing; buying and receiving; sales promotion; customer services; retail expense mgmt. Prereq: 321.

425 Interm Marketing Mgmt (3 cr). Demand analysis theory; structure of distribution and location theory; org buying behavior; decision making by marketing mgmt. Prereq: 321, Econ 251-252.

435 Operations Research I: Linear Programming (2 cr). Same as ApSt 435. Linear programming; simplex method, computer solution, sensitivity analysis, and appl. Prereq: 133 or Engr 131, and Bus 332, or perm.

436 Business and Econ Fluctuations (3 cr). Same as Econ 436. Appl of recent theoretical, statistical, and institutional dev to bus forecasting. Prereq: 231, Econ 372, or perm.

437 Stats for Business Decisions (2 cr). Same as ApSt 437. Decision making under uncertainty; utility theory. Prereq: 231.

438 Interm Managerial Stats (3 cr). Same as ApSt 438. Variance, simple and multiple regression, matrix models, correlation theory, and sampling tech. Prereq: 231.

439 Systems and Simulation (2 cr). Same as CS 439. Distribution theory, random numbers, modeling concepts and simulation of queueing and inventory systems. Prereq: 332, and Engr 131.

441 Labor Relations (3 cr). Negotiations and admin of current union-mgmt issues.

442 Govt Regulations of Bus (3 cr). Analysis and appraisal of major types of public policy toward bus activity; emphasis on antitrust laws.

451 Marketing Problems (3 cr). Distribution channels and policies, sales promotion; price determination and policies. Prereq: 321, 323, 425.

452 Marketing Research and Analysis (3 cr). Purposes, methods, and tech; market-potential analysis; product analysis and adoption. Prereq: 231, 321.

453 Operations Research II: Queueing Theory (1 cr). Same as ApSt 453. Distribution theory, birth-death processes, single and multiple server models. Prereq: 231, 332.

454 Operations Research III: Game Theory (1 cr). Same as ApSt 454. Utility theory, zero-sum games, nonzero-sum games, psych implications. Prereq: 231.

455 Integer, Nonlinear, and Dynamic Programming (1 cr). Same as ApSt 455. Intro. Prereq: 435.

456 Quality Control (2 cr). Same as ApSt 456. Designing of efficient and effective systems for the maintenance of quality. Prereq: 231.

457 Nonparametric Stats (2 cr). Same as ApSt 457. Methodology of nonparametric statistical tests. Prereq: 231.

461 Real Estate (3 cr) (C). Listing, selling, leasing, financing, and brokerage; fundamentals of valuation and listing property mgmt.

462 Real Property Appraisal (3 cr). Theories and prin in estimating value of natural resources and any attached improvements. Prereq: Econ 252 or perm.

X463 Real Estate Fundamentals (0 cr). Practical basic study of real estate activity; legal, social, econ, and financial operational phases of real estate in Idaho.

X464 Real Estate Law (0 cr). Practical applied study of Idaho real estate law; to help avoid legal difficulties arising from real estate transactions.

466 Business Law (3 cr) (C). Law of sales, negotiable instruments, security interests in properties, and bus regulations dealing with competitive torts, antitrust, and federal trade regulations; bus ethics. Prereq: 265 or perm.

467 Business Law (3 cr). Legal concepts of agency, partnerships, corporations, securities regulation (Securities Act of 1933 and 1934), personal property, real property, and environmental law. Prereq: 265 or 466.

470 Motion Study, Time Study, and Job Design (2 cr). Prin and concepts for the effective and efficient employment of labor. Prereq: 231.

471 Product Design, Value, and Engr Analysis (1 cr). Analyt approach to reducing manufacturing costs via product design, process, specification, and distribution methods. Prereq: 231.

474 International Business (3 cr). International trade and the nature of exhange among nations; socioecon environment of the multinational corporation.

480 Business Policy (3 cr) (414). Culminating program of study in bus admin; designed to integrate all area skills acquired during previous formal study; integration of skills through case analysis and other methods; written and oral reports. Prereq: 301, 312, 321, and sr standing, or perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

501 (s) **Seminar** (cr arr). Normally offered in real estate, investments, insurance, govt regulation, industrial mgmt, industrial relations, and current problems. Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 Financial Policy (3 cr). Social and econ implications of the financial process. Prereq: perm.

504 (s) **Special Topics** (cr arr).

505 (s) **Workshop** (cr arr). Prereq: perm.

510 Govt Regulation of Business (3 cr). Econ and legal aspects of antitrust laws; philosophical and econ basis of govt control of bus.

513 Human Behavior in Orgs (3 cr). Seminar concerned with worker and supervisor behavior and attitudes, work group behavior, leadership and motivation, comm and decision making. Prereq: perm.

521 Adv Marketing (3 cr). Production dev, pricing, demand creation, physical distribution, and channel selection. Prereq: perm.

525 Industrial Mgmt (3 cr). Tech of and decision making in production mgmt; quantitative approaches of resource allocation to problems of production. Prereq: perm.

532 Dynamics of Business Decisions (3 cr). Same as ApSt 532. Statistical decision theory and operations research tech. Prereq: 231 or perm.

533 Automatic Systems (1 cr). Same as CS 533. Types of computers for accumulation and control of acctg data; programming and multiple use of data; audit of machine systems.

580 Business Policy (3 cr). See Inter 580.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Business Education—BusEd

James A. Bikkie, Director, Div. of Vocational Teacher Education (210 Educ. Bldg.). Faculty: John P. Holup (Distributive Education), Robert M. Kessel (Business Education).

200; 400; 501 (s) **Seminar** (cr arr). Prereq: perm.

203; 403; 503 (s) **Workshop** (cr arr). Prereq: perm.

204; 404; 504 (s) **Special Topics** (cr arr).

299; 499; 502 (s) **Directed Study** (cr arr). Prereq: perm.

491-492 Teaching Bus Ed I-II (2-3 cr; 3 cr). Methods and materials. BusEd 491: office occupations. BusEd 492: basic bus subjects. Prereq: perm.

493 Teaching Distributive Ed (3 cr). Same as VocEd 493. Selection, org, and presentation of subject matter pertaining to preparatory distributive ed progs at the secondary-school level; emphasis on teaching methods and tech.

494 Distributive Ed Materials (2 cr). Same as VocEd 494. Exam, dev, and appl of instructional materials in distributive ed.

495 Supervising DECA Programs (2 cr). Same as VocEd 495. Role of DECA in distributive ed; org and implementation of youth activities.

496 Directed Work Experience (2 cr). Same as VocEd 496. Job analysis and descriptions; weekly work-experience reports and analysis coordinated with problems related to the student's employment in an approved distributive occupation. Prereq: perm.

497 Coordination Techniques (3 cr). Same as VocEd 497. Problems of coordinator in cooperative part-time prog; guidance and selection; placing students in work stations; assisting job adjustment; developing training prog.

498 (s) **Practicum in Tutoring** (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

500 Master's Research and Thesis (cr arr).

520 Office Occupations Subjects (3 cr). Methods and materials; achievement standards; review of lit and research. Prereq: perm.

521 Basic Bus Subjects (3 cr). Methods and materials; achievement standards; review of lit and research. Prereq: perm.

522 Issues in Bus Ed (3 cr). Philosophies, objectives, trends, and org patterns of bus ed in secondary schools. Prereq: perm.

523 Adult Distributive Ed (3 cr). Establishing and developing adult prog in distributive ed. Prereq: perm.

524 Issues in Distributive Ed (3 cr). Same as VocEd 524. Philosophies, objectives, trends, and org patterns of distributive ed in secondary schools. Prereq: perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Chemical Engineering—ChE

Kermit L. Holman, Dept. Chairman (312 Buchanan Engr. Lab.). Faculty: Louis L. Edwards, Robert L. Furgason, Wayne R. Hager, Kermit L. Holman, Melbourne L. Jackson, Jay J. Scheldorf, George M. Simmons, Donald C. Sundberg, William J. Thomson.

100 Intro to Chem Engr Analysis (2 cr). Offered summers only. Analysis of chem processes and operations with emphasis on elem computer technology. Graded P/F. Prereq: Engr 131 or equiv and perm of dept.

200 Sophomore Seminar (0 cr). Discussion of topics of current concern to engr profession. Graded P/F.

204 (s) **Special Topics** (cr arr).

299 (s) **Directed Study** (cr arr). Prereq: perm.

243-244 Chem Engr Lab (3-4 cr). May not be used to fill cr requirements for B.S.Ch.E. degree. Unit operations and chem reactions related to elem theory, equipment operations, materials of fabrication, and instrumentation and measurements. One or two lec and two 3-hr labs per wk.

271 Process Engr (2-3 cr). Appls of unit operations, chem reactions, and econ and other relevant nontech guidelines to select chem process industries.

300 Jr Seminar (0 cr). Graded P/F.

323 Material and Energy Balances (3 cr). Conservation of mass and energy calculations in chem process systems. Prereq: Chem 114, Math 190.

326 Chem Engr Thermodynamics (3 cr). Fluid behavior, property estimation, and phase and reaction equilibria; appl to chem process sytems. Prereq: ES 321; coreq: 323.

330 Stagewise Operations (3 cr). Stagewise process operations, incl distillation, extraction, absorption, and ion exchange. Coordinated lec-lab periods. Prereq: 323, ES 321.

344 Automatic Process Control (3 cr). Process dynamics and control, with appl of industrial instruments to process systems. Two lec and one 3-hr lab per wk. Prereq: EE 200, Math 310.

390 Intro to Chem Engr Principles (3 cr). For chemists and engineers. Mass and energy balances and unit operations used in chem process industries. Prereq: perm.

393 Chem Engr Projects (1-3 cr, max 9). Problems of a research or exploratory nature. Prereq: perm of dept.

404 (s) **Special Topics** (cr arr).

410 Fundamentals of Polymer Science and Processing (1-3 cr). Structure and formation of polymers, polymerization and fabrication processes and properties. Prereq: perm.

423 Reactor Kinetics and Design (3 cr). Chem reaction equilibria, rates, and kinetics; design of chem and catalytic reactors. Prereq: 323, Chem 306, Math 310.

430-431 Transport and Rate Processes I-II (3-4 cr). Mass, energy, momentum transfer, and rate phenomena with appl to design of process equipment for drying, crystallization, filtration, sedimentation, and fluidization. Coordinated lec-lab periods. Prereq: 323, ES 320, Math 310; coreq: Chem 306.

435 Energy Conversion Systems (3 cr). Same as ME 435. Energy sources and their conversion to useful power, incl conversion systems and associated econ; nuclear fission, fusion, and radiation; geothermal; thermionic and fossil fuels.

453-454 Chem Process Analysis and Design (3 cr). Estimation of equipment and total plant costs, annual costs, indices of attractiveness, optimization; design of equipment, alternate process systems and econ, case studies of selected processes. One 1-wk field trip. Prereq: 330, Econ 251; coreq: 423, 431.

WS470 Fundamentals of Air Pollution (3 cr). WSU CE 470. Sources, magnitude, and impact; chem of urban atmosphere, photochem of smog, and meteorological forces. Prereq: Chem 111, Chem 114.

491-492 Seminar (0 cr). Recent dev and topics. Graded P/F. Prereq: sr standing.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

ID515 Transport Phenomena (3-4 cr). Same as ME 515. Adv treatment of momentum, energy, and mass transport processes; solution tech. Prereq: perm.

525 Adv Heat Transfer (2-3 cr). Same as ME R525. Appl of fundamentals of heat conduction, radiation, and convection; relationships to fluid dynamics and mass transfer; econ and design appl. Prereq: perm.

527 Adv Chem Engr Thermodynamics (2-3 cr). Equilibria in physical and chem systems; generalized prediction of thermodynamic properties, incl nonideal systems. Prereq: perm.

R528 Adv Thermodynamics (3 cr). See ME R528.

529 Chem Engr Kinetics (2-3 cr). Interp of kinetic data and design of nonideal chem reactors; fundamentals of heterogeneous catalysis, incl catalyst preparation, characterization, and theory of catalytic reaction rates. Prereq: perm.

534 Chem Engr Processes (2-3 cr). Industrial processes, incl electrochem and high pressure technology, petroleum refinery engr, and pulp and paper technology. Prereq: perm.

537 Adv Fluid Mechanics (2-3 cr). Same as ME R537. Fluid systems used in industry; non-Newtonian behavior of particle and plastic systems; two-phase situations, incl fluidization and film flow. Prereq: perm.

541 Chem Engr Analysis I (2-3 cr). Same as ME 541. Math analysis of chem engr operations and processes; math modeling and computer appl. Prereq: perm.

542 Chem Engr Analysis II (2-3 cr). Numerical and analyt methods in the solution of chem engr problems; partial differential equations, appl of approx variational methods and integral transforms. Prereq: perm.

544 Adv Process Control (2-3 cr). Theory of process dynamics and systems engr. Two lec and one 3-hr lab per wk. Prereq: perm.

545-546 Mass Transfer Operations I-II (2-3 cr). Diffusional and equilibrium operations. Prereq: perm.

571 Adv Plant Design (2-3 cr). Design of process plants for optimum costs and econ return; scale-up of pilot plants. Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Chemistry—Chem

Jean'ne M. Shreeve, Dept. Head (116 Phys Sc. Bldg.). Faculty: James L. Barrus, Dennis G. Brown, James H. Cooley, Sherry O. Farwell, Verl G. Garrard, Merland W. Grieb, G. Michael Hass, Michael D. Kluetz, Duane J. Le Tourneau, Lois K. Miller, Richard A. Porter, Elmer K. Raunio, Jack E. Richman, George M. Rubottom, Jean'ne M. Shreeve, Chien M. Wai, Robert D. White, James D. Willett.

RELATED FIELD: See biochemistry.

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: 111-112-253; 111-114; 103-275.

100 Chem Fundamentals (1 cr). Accelerated treatment of chem problem solving, incl SI unit conversion, mole concept, specific heat, specific gravity, chem stoichiometry, and solution concentration problems. Adv placement cr is not allowed for students who are permitted to bypass this course.

101 Concepts of Chem (4 cr). Nonmath descriptive treatment relating key dev of chem to modern living. Three lec, dem, and one 2-hr lab per wk.

102 Chem and the Citizen (3 cr). Impact of chem on society; what is new in chem technology and effect on the public; transfer of chem know-how to underdeveloped nations; guidelines for the nonscientist in evaluating chem sc and industry.

103 Intro to Chem (4 cr). Cr will not be allowed in both Chem 103 and 111. General treatment of the fundamentals of chem. Three lec, one recitation, and one 3-hr lab per wk. Does not satisfy the prereq for Chem 112 or 114. Prereq or coreq: 100 or adequate score on chem-fundamentals exam.

111 Prin of Chem (4 cr). Cr will not be allowed in both Chem 103 and 111. Intensive treatment of prin and appl of chem. Three lec, one recitation, and one 3-hr lab per wk. Prereq or coreq: 100 or adequate score on chem-fundamentals exam.

112 Inorganic Chem and Qualitative Analysis (5 cr). Elem theoretical chem and appl to analyt practice; lab work in the qual separation of cations and anions by semimicro methods. Max six cr in 112 and 114 combined. Three lec and two 3-hr labs per wk. Prereq: 111 or perm.

114 General Chem (4 cr). Continuation of 111 for students who do not plan to take further professional chem courses. Some work in inorganic, organic, and biochem, electrochem, nuclear chem, and

in qual inorganic analysis. Max six cr in 112 and 114 combined. Three lec, one recitation, and one 3-hr lab per wk. Prereq: 111 or perm.

121 Glassblowing (1 cr). Tech used in constr scientific apparatus and artistic objects from glass. Graded P/F. One 3-hr lab per wk.

200 (s) **Seminar** (cr arr). Prereq: perm.

253 Quantitative Analysis (5 cr). Theory and practice of gravimetric and volumetric analysis; intro to modern analyt chem. Three lec and two 3-hr labs per wk. Prereq: 112 or 114.

275 Carbon Compounds (3 cr). Aspects of organic chem important to students in the life sc. Duplicate cr will not be allowed in first-year courses in organic chem. Prereq: 103 or perm.

277 Organic Chem I (3 cr). Prin and theories of organic chem; properties, prep, and reactions of organic compounds. Duplicate cr will not be allowed in first-year courses in organic chem. Prereq: 112 or 114.

278 Organic Chem I: Lab (1 cr). Lab to accompany 275 or 277. One 3-hr lab per wk. Prereq or coreq: 275 or 277.

299 (s) **Directed Study** (cr arr). Prereq: perm.

302 Prin of Physical Chem (3 cr). Emphasis on topics important in biol and ag sc. Prereq: 112 or 114, Math 180, Phys 113, or perm.

303 Prin of Physical Chem Lab (1 cr). Lab to accompany 302. One 3-hr lab per wk. Prereq or coreq: 302.

305-306 Physical Chem (3 cr). Kinetic theory, thermodynamics, and the constitution of matter. Prereq: 112 or 114, Math 200; prereq or coreq: Phys 222.

307-308 Physical Chem Lab (1 cr). Lab to accompany 305-306. One 3-hr lab per wk. Prereq or coreq: 305-306.

372 Organic Chem II (3 cr). Continuation of 277. Prereq: 277.

376 Organic Chem II: Lab (2 cr). Lab to accompany 372, incl qual analysis and modern instrumental tech. Two 3-hr labs per wk. Prereq or coreq: 372.

380 Intro Biochem (4 cr). See Biochem 380.

400 (s) **Seminar** (cr arr). Prereq: perm.

409 Proseminar (1 cr). Current publications in chem and chem engr with reports on typical scientific papers. Prereq: 372 and sr standing.

R413 Radiochem for Engineers (2 cr). Primarily for engineers. Properties of nuclear particles, nuclear reactions, tech of producing reactions, interaction of radiation with matter, and radiochem tech. Prereq: perm.

416 Methods in Radiochem (3 cr). Basic theory and practice in use of radionuclides; practical lab experience. Two lec and one 3-hr lab per wk. Enrollment is limited by facilities. Prereq: 306 or perm.

418 Environmental Chem (3 cr). Case histories in which new chem processes or products have had recognizable impact upon ecological systems either directly or through primary modification of the physical environment; responsibilities of industry, govt labs, and universities for corrective action; chem counter measures for damage to environment. Graded P/F. Prereq: jr standing and perm.

435 Prin of Chem Instrumentation (4 cr). Two lec and two 3-hr labs per wk. Prereq: 253, Phys 222, or perm.

441 Chem Lit (1 cr). Survey of important chem reference works and periodicals; use of these sources. Prereq: perm.

454 Instrumental Analysis (4 cr). For students in chem and allied fields. Tech in operating new and specialized instruments for qual and quantitative analysis and analyt methods of an adv nature. Three lec and one 4-hr lab per wk. Prereq: 253, 305; prereq or coreq: 306.

463 Inorganic Chem (3 cr). Prin, complex ions and coordination compounds, theory of acids and bases, non-aqueous solvents, familiar elements and their relationship to the periodic table. Prereq: 305; prereq or coreq: 306 or perm.

464 Inorganic Chem Lab (1 cr). Lab to accompany 463. One 3-hr lab per wk. Coreq: 463.

473 Interm Organic Chem (3 cr). Theories and mechanisms of organic chem. Prereq: 372; prereq or coreq: 306.

475 Organic Synthesis (3 cr). Strategy of organic synthesis applied to the lab synthesis of reactive organic intermediates. One lec and six hrs of lab per wk. Prereq: 376 or perm.

481-482 Biochem (3 cr). See Biochem 481-482.

483-484 Biochem Lab (1-2 cr, max 2). See Biochem 483-484.

486 Plant Biochem (3 cr). See Biochem 486.

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.

495 Intro to Quantum Chem (3 cr). Intro to quantum mechanics with elem appl to atomic and molecular structure and spectroscopy. Prereq: 306.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

592 (s) **Directed Study** (cr arr). Prereq: perm.

WS503 Adv Topics in Inorganic Chem (3 cr, max arr). Recent significant dev. Prereq: 561.

504 (s) **Workshop** (cr arr). Prereq: perm.

ID507 Topics in Physical Chem (1-9 cr, max 9). Colloid chem, polarography, nuclear magnetic and electron paramagnetic resonance; kinetics of irreversible processes; other topics not covered extensively in regularly scheduled courses. Prereq: perm.

509-510 Adv Physical Chem (3 cr). Appl of quantum theory to chem bonding, molecular spectroscopy, and molecular structure. Prereq: 306 or perm.

513 Nuclear Chem (3 cr). Intro to artificial and natural radioactivity, tracer methods, and atomic energy. Prereq: 306 or Phys 360.

R516 Methods in Radiochem (3 cr). Radiochem tech and appl of tracers to chem; fundamentals of radioactive decay; statistical relationships; interaction of radiation with matter; production of radioactive samples; chem of radioactive elements. Prereq: perm.

517 Chem of High Polymers (3 cr). Relationship of structure and properties of polymeric materials; appl of thermodynamic prin of polymers and their solutions; kinetics of polymerization. Prereq: 306.

WS525 Adv Topics in Analyt Chem (2 cr, max arr). Selected current dev. Prereq: perm.

WS537 Adv Topics in Physical Chem (2 cr, max arr). Selected subjects; irreversible thermodynamics; chem bonding; NMR; ligand field theory; x-ray diffraction; neutron diffraction.

WS544 Adv Topics in Organic Chem (3 cr, max arr). Current research. Prereq: 575.

553 Modern Analyt Methods (3 cr). Absorption and emission spectroscopy, polarography, potentiometry, nuclear magnetic resonance, chromatography. Prereq: 306, 454, or perm.

555 Adv Analyt Chem (3 cr). Fundamental prin of classical analyt chem; homogeneous and heterogeneous equilibria, complex ions; analyt separations, nonaqueous equilibria. Prereq: 306 or perm.

556 Chem Spectroscopy (3 cr). Interp of spectra.

R557 Topics in Analyt Chem (1-6 cr, max 6). Tech and methods not usually covered in 555; potentiometry, polarography, coulometry, and spectroscopic methods. Prereq: perm.

561 Adv Inorganic Chem (3 cr). Theoretical approach to the underlying prin of inorganic chem; integration of theory and descriptive chem. Prereq: 306, 463, or perm.

563 Adv Inorganic Chem Lab (2 cr, max 4). Inorganic preparations using aqueous, nonaqueous, and high vacuum tech. Prereq or coreq: 561.

ID565 Topics in Inorganic Chem (1-9 cr), max 9). Coordination compounds; halogens; less familiar elements; clathrate, interstitial, nonstoichiometric compounds; chem bonding; inorganic reaction mechanisms. Prereq: perm.

WS568 Adv Topics in Biochem (2 cr, max arr). Recent research in selected areas. Prereq: 482.

ID571 Topics in Organic Chem (1-9 cr, max 9). Selected topics from the current lit. Prereq: perm.

573 Synthetic Organic Chem (3 cr). Use of organic reactions in synthesis.

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: 306, 473.

579 Physical Organic Chem (3 cr). Physical chem methods applied to organic chem.

581 Carbohydrates (3 cr). See Biochem 581.

582 Proteins and Enzymes (4 cr). See Biochem 582.

583 Lipids (3 cr). See Biochem 583.

584 Nucleic Acids (3 cr). See Biochem 584.

585 Physical Biochem (3 cr). See Biochem 585.

ID&WS589 Adv Topics in Biochem (1-9 cr, max 9). See Biochem ID&WS589.

600 Doctoral Research and Dissertation (cr arr).

Civil Engineering—CE

Frederick J. Watts, Dept. Chairman (104 Buchanan Engr. Lab.). Faculty: Charles E. Brockway, John S. Gladwell, Donald F. Haber, Forrest H. Hall, James H. Hardcastle, Cecil W. Hathaway, Terry R. Howard, Robert P. Lottman, James H. Milligan, George R. Russell, Ronald L. Sack, Alfred T. Wallace, Calvin C. Warnick, Frederick J. Watts, Gerald A. Willett, Jr.

112 Elem Surveying (2 cr). For nonengr students. Theory of measurements and manipulation of surveying instruments; appl of surveying methods to constr; topographic and land surveys. One lec and one 3-hr lab per wk. Prereq: Math 140 and Engr 101 or Arch 155 or Geog 380.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

211 Engr Measurements (4 cr). For engr students. Theory and practice; types and distribution of errors; manipulation of instruments; route and land surveying; constr surveys; intro to photogrammetry. Three lec and one 3-hr lab per wk. Prereq: Math 140 and Engr 101 or equiv.

218 Elem Surveying and Photogrammetry (3 cr). For nonengr students. Theory of measurement; public land surveying and manipulation of surveying instruments; prin of photogrammetry and photo-interp. Two lec and one 3-hr lab per wk. Prereq: Math 140.

299 (s) **Directed Study** (cr arr). Prereq: perm.

ID317 Land Surveying (2 cr). Hist and dev; related laws; prep and filing of property descriptions and plats; subdivision planning; methods for property surveys. Prereq: 211.

ID319 Photogrammetry and Photo-Interp (3 cr). Geometry of single and stereoscopic pairs of aerial photographs; stereoplotters; photo-interp; appl to problems of engr importance. Two lec and one 3-hr lab per wk. Prereq: 211.

321 Hydrology (2 cr). See AgE 351.

322 Hydraulics (2 cr). Applied prin of fluid mechanics; open channel flow, pressure conduit flow. Prereq: ES 320.

342 Theory of Structures (4 cr). Stresses and strains in statically determinate and indeterminate beam, truss, and rigid frame structures; effects of moving loads; matrix displacement method. Three lec and one 3-hr lab per wk. Prereq or coreq: ES 340.

345 Structural Design (3 cr). Continuation of ES 340 and CE 342. Intro to design concept. Two lec and one 3-hr lab per wk. Prereq: ES 340 and CE 342.

357 Mech Properties of Constr Materials (3 cr). Characteristics and measurements of stress-strain stiffness and strength properties of structural materials. Two lec and one 3-hr lab per wk. Prereq: ES 340; prereq or coreq: Eng 317.

372 Transportation Engr (4 cr). Intro to planning, design, constr, operation, maintenance, and admin of transportation systems. Three lec and one 3-hr lab per wk. Prereq: jr standing.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

420 Fluid Mechanics II (3 cr). Fluids in motion; basic laws for systems and control volumes; Navier-Stokes equations; boundary layer theory; potential flow. Prereq: ES 320.

421 Open Channel Hydraulics (3 cr). See AgE 458.

ID422 Hydraulic Design (3 cr). Hydraulic problems in design of gravity and pressure systems. One field trip. Prereq: perm.

431 Sanitary Engr (4 cr). Appl of basic engr sc to treatment of domestic and industrial water supplies; treatment and disposal of domestic sewage and industrial wastes. Three lec and one 3-hr lab per wk. Prereq: 322 and ES 320 or perm.

432 Sanitary Engr Techniques (3 cr). Physical, chem, and biol tech for analysis of sanitary engr problems; dev of design criteria for common operations and processes. Two lec and one 3-hr lab per wk. Prereq: perm.

441 Reinforced Concrete Design (3 cr). Ultimate strength method in accordance with latest ACI bldg code. Two lec and one 3-hr lab per wk. Prereq: 345.

444 Steel and Timber Design (4 cr). Working-stress design and plastic design of steel using latest AISC specs. One credit on timber design using latest NFPA specs. Three lec and one 3-hr lab per wk. Prereq: 345.

460 Soil Mechanics (3 cr). Physical and mech properties of soils; behavior of soil structures under load. Prereq: ES 320 and ES 340.

WS461 Foundations (3 cr). WSU 435. Analysis and design of foundation elements; retaining walls, sheet piling, cofferdams, and waterfront structures. Prereq: 441, 460; coreq: 444.

468 Engr Properties of Soils (2 cr). Lab measurements of physical and mech properties of soils; related appl. One lec and one 3-hr lab per wk. Prereq: 460.

473 Transportation Planning (3 cr). Transportation-planning procedures, emphasis on urban appl; org data collection, modeling, analysis of alternatives, and implementation. Prereq: 372 and one course in stats.

474 Highway Design and Operations (3 cr). Fundamentals of geometric design and traffic engr for urban and rural highways. Prereq: 372 and one course in stats.

475 Pavement Design (3 cr). Methods and comparative analyses of structural and other performance capabilities of flexible and rigid pavements. Prereq: 357, 372.

482 Project Mgmt Techniques (1-4 cr, max 4). Four accelerated, 1 cr minicourses offered in one semester. Modern engr mgmt tech for design, constr, and operation of typical engr projects: (1) linear programming applied to project design and operation; (2) project econ and cost estimation; (3) reliability, risk, and decision analysis; (4) scheduling and bidding of projects (CPM, PERT). Four lec per wk for 4 wks for each minicourse. These minicourses may be taken separately and in any order.

ID484 Engr Law and Contracts (2 cr). Dev of law, courts, and ethics; laws of contracts, agency, sales, property, and patents; specs; prep of contract documents. Prereq: sr standing.

486 Engr Economy (3 cr). Econ analysis and comparison of engr alternatives. Prereq: sr standing.

491-492 Seminar (0 cr). Tech topics, employment practice, interviewing procedures, and field trips. One 3-5 day field trip may be

reqd. To be taken during last two semesters in residence. One meeting per wk. Graded P/F.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Conferences and reports on current dev.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

ID521 Hydraulics Design (3 cr). Dams, spillways, and outlets; design of major structure. Two lec and one 3-hr lab per wk. Prereq: perm.

ID523 Water Resources Systems (3 cr). Concepts in water dev; coordination of dev of other natural resources; systems approach and optimization tech. Prereq: perm.

524 Water Resources Planning (3 cr). Use of water resources; provision for domestic water supply, power, flood control, navigation, irrigation, and rec; design and feasibility problems; guest lecturers. Prereq: perm.

WS525 Interm Fluid Mechanics (3 cr). WSU 550. Basic flow equations; Navier-Stokes equations; similitude; potential flow, boundary layers, turbulence, and diffusion; uniform and nonuniform conduit flow; drag and lift. Prereq: ES 320.

WS526 Turbulent Flow and Diffusion (2 cr). WSU 551. Theories of turbulent motion and diffusion in flow with appl in jet, pipe, and natural environments. Prereq: ES 320.

WS527 Adv Hydraulic Engr ((3 cr). WSU 552. Water hammer, flow establishment, surge tanks, transient flow in open channels; intro to hydraulic machinery. Prereq: perm.

WS528 Stochastic Hydrology (3 cr). WSU 559. Appl of probability in hydrology; analysis and eval of hydrologic data; regression analysis and simulation tech. Prereq: 321 and a course in stats.

WS530 Instrumental Analysis in Environmental Contaminants (2 cr). WSU 540. Theory and methods of analysis of water, wastewater, and air; electrometric, spectrophotometric, and chromatographic tech.

ID&WS531 Unit Operations of Sanitary Engr (3 cr). WSU 541. Analysis and design of physical and chem operations of water and waste treatment; flow models, sedimentation, flocculation, filtration, and water conditioning. Prereq: perm.

ID&WS532 Unit Processes of Sanitary Engr (3 cr). WSU 542. Analysis and design of chem and biol processes of water and waste treatment, stream pollution analysis, gas transfer, biol oxidations, aerobic and anaerobic processes, and combustion processes. Prereq: perm.

ID534 Sanitary Engr Analysis (2 cr). Theoretical and lab methods for dev of design criteria for sanitary engr systems. One lec and one 3-hr lab per wk. Prereq: perm.

ID536 Wastewater Treatment System Design (2 cr). Appl of unit operations and processes to design of integrated wastewater treatment systems; critical analysis of existing designs. Prereq: 531; coreq: 532.

WS538 Engr Aspects of Aquatic Biol (4 cr). WSU 584. Role of microorganisms, incl bacteria, algae, fungi, and protozoa in water and waste treatment processes.

WS539A Industrial Waste Problems (2 cr). WSU 545. Eval and possible solutions of industrial waste problems.

WS539B Water Quality Mgmt (3 cr). WSU 546. Systems analysis applied to mgmt of water quality problems, incl econ, political, and sociological aspects.

WS539C Radiological Health (3 cr). WSU 547. Sources and units of radiation and radioactivity, radiological health, radiation detection, and radioactive waste disposal.

WS539D Air Pollution Meteorology (3 cr). WSU 571. Weather and climate; atmospheric turbulence; transport and diffusion to air pollution problems by modeling, statistical, and graphic treatment.

WS539E Air Pollution Measurement Techniques (2 cr). WSU 572. Survey design and site selection; ident and determination of air pollutants by chem and physical methodology; data reduction and presentation.

WS539F Air Pollution Abatement and Admin (3 cr). WSU 573. Control measures; process modification; atmospheric dilution; air quality criteria and standards; admin of air pollution control agencies.

WS539G Engr Aspects of Aquatic Chem (3 cr). WSU 583. Chem prin applied to water supply and pollution control engr.

WS539H Applied Stress Sanitation (3 cr). WSU 586. Assimilating capability and complex self-purification capacity of a natural water system.

541-ID542 Design of Structures I-II (3 cr). CE 541: arches, reinforced concrete appl, incl prestressed concrete and thin-shell design. CE ID542: nonprismatic member analysis, secondary stress, composite sections, plate girder design. Prereq: 441, 444, or perm.

ID&WS543 Dynamics of Structures (3 cr). WSU 512. Alt/yrs 79-80. Behavior of structures under impact, impulse, and seismic loads. Prereq: 441, 444, Math 310.

ID544 Buckling in Structures (3 cr). Analysis of elastic and inelastic stability of columns, trusses, rigid frames, plates, and shells; lateral stability of beams. Prereq: 444, Math 310.

WS545 Adv Structural Design (3 cr). WSU 531. Adv concepts in structural steel design.

ID546 Finite Element Analysis (3 cr). Same as ME 549. Formulation of theory from basic consideration of mechanics; appl to structural engr, solid mechanics, soil and rock mechanics, fluid flow. Prereq: perm.

WS547 Theory of Elastic Stability (3 cr). WSU 513. Elastic and inelastic buckling phenomena of bars, beams, frames, and plates.

548 Elasticity (3 cr). Same as ME 548. Math analysis of strain and stress, incl vectors, tensors, and coordinate transformations; equations of elasticity; stress problems involving extension, torsion, and flexure; theories of failure. Prereq: perm.

WS549 Intro to Finite Elements I (3 cr). WSU 532. Concepts and appl of finite elements.

ID556 Physical Properties of Concretes (3 cr). Design aspects of portland cement and asphalt concrete mixtures; physical and mech properties; effects of aggregate and binder constituents. Two lec and one 3-hr lab per wk. Prereq: 357 or perm.

557 Mech Properties of Elastic and Nonelastic Materials (3 cr). Quantitative effects and methods of stress-strain mode, time, and temperature on overall stress, strain, and stiffness of structural materials encountered in civil engr; concepts of fracture mechanics. Prereq: 357 or perm.

ID561 Adv Soil Mechanics (3 cr). Effective stress, pore pressures, strain, and shear strength of soil, dynamic behavior, appl to design of rigid and flexible earth-retaining structures, stability analyses of natural slopes and embankments. Prereq: 460 or perm.

ID562 Adv Foundation Engr (3 cr). 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: 460 or perm.

563 Seepage and Earth Dams (3 cr). See GeolE 535.

571 Transportation Engr (2-3 cr). Demand, econ appl of various modes of transportation, econ impact on land areas of transportation dev, national transportation policy, and metropolitan and regional transportation studies. Prereq: 372 or perm.

572 Traffic Engr (2-3 cr). Urban street systems, traffic signals, signing, striping and illumination, math stats of traffic, freeway operations, warrants, accident analysis, traffic research and admin. Prereq: 372 or perm.

576 Airport Engr (2 cr). Planning and design of air transportation

facilities, incl terminal areas, runways, and navigational aids. Prereq: 372.

577 Highway Capacity (2 cr). Analysis of rural and urban highway and intersection capacity for design and operations. Prereq: 372.

589 Water Resources Seminar (1 cr). See Inter 589.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Communication—Comm

Don H. Coombs, Director, School of Communication (Communication Bldg.). Faculty: Don H. Coombs, Bert C. Cross, Arthur R. Hook, James K. VanLeuven.

120 Mass Comm in a Free Society (2 cr). Role of the media; their performance and significance.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

224 Graphic Design I (2 cr). See Art 224.

294 Student Media Experience (1-2 cr, max 4). Appl of comm tech on such campus media as the student newspaper and radio station. Graded P/F. Prereq: perm of dept.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

360 Advertising Media and Sales: Broadcast (2 cr). Exam of TV and radio's network and spot buying procedures, local rate structures, market studies, sales tech.

362 Advertising Media and Sales: Print (2 cr). Exam of newspapers, magazines, other print media; selling and servicing advertising.

366 Creative Processes of Advertising (4 cr). Developing advertising ideas into message strategy for all media. One lec and two labs per wk.

370 Comm and Attitude Change (3 cr). Approaches to attitude change, with consideration of appl in the mass media.

372 Prin of Public Relations (3 cr). Tech for mass media: projects related to student's interest.

445 Internship (1-8 cr, max 8). Supervised experience in professional comm. Graded P/F. Prereq: perm of director, School of Comm.

455 Hist of Mass Comm (3 cr). Growth and dev of mass media in the U.S.

488 Theory in Comm (3 cr). Alt/yrs. Interdisciplinary approach to understanding the process of comm.

490 Law of Mass Comm (3 cr). Freedom of the press, libel, right to know, privacy, contempt in print and broadcast media.

491 Propaganda (2 cr). Nature and tech of propaganda.

492 Mass Comm and Public Opinion (2 cr). Role of mass media in forming public opinion.

496 Sr Research Project (3 cr). Work on a project with close faculty supervision.

Computer Science—CS

Robert R. Furgason, Coordinator (125 Janssen Engr. Bldg.). Faculty: William V. Accola, Larry E. Bobisud, C. Randall Byers, James E. Calvert, Howard E. Campbell, John W. Dickinson, Gary K. Maki, Charles K. Nelson, Joseph E. Thomas, Karen H. Van Houten, Ya-Yen Wang.

Courses in this subject area are under the general jurisdiction of the University Curriculum Committee and its Subcommittee of Info Science.

101 Intro to Computer Algorithms (3 cr). Conceptual model of a computer, flowcharting, constructing algorithms to solve numerical and nonnumerical problems, intro to data processing.

131 Digital Computer Programming (1-2 cr). See Engr 131.

133 Intro to Computer Info Systems (2 cr). See Bus 133.

205 Intro to Computer Programming (3 cr). See Math 205.

234 Adv Fortran Programming (2 cr). See Engr 234.

305 Computer Org and Programming (3 cr). See Math 305.

333 Intro to COBOL (2 cr). See Bus 333.

350 Mgmt Info Systems (3 cr). See Bus 350.

R400 (s) **Seminar** (cr arr). Prereq: perm.

402 Applied Numerical Methods (3 cr). See ES 402.

405 Adv Programming (3 cr). See Math 405.

433-434 Numerical Analysis (3 cr). See Math 433-434.

439 Systems and Simulation (2 cr). See Bus 439.

440 Digital Systems Engr (3-4 cr). See EE 440.

445 Computer Programming Systems (3 cr). See EE 445.

446 System Modeling and Simulation (3 cr). See EE 446.

R448 Adv Assembler Language and Operating Systems (3 cr). See EE R448.

487 Data Structures (3 cr). See Math 487.

R500 Master's Research and Thesis (cr arr). Prereq: perm.

R502 (s) **Directed Study** (cr arr). Prereq: perm.

533 Automatic Systems (1 cr). See Bus 533.

540 Switching and Finite Automata Theory (3 cr). See EE 540.

541 Design of Digital Computers and Computer Systems (3 cr). See EE 541.

542 Theoretical Models for Computation (3 cr). See EE 542.

R543 Teleprocessing Systems Design (3 cr). See EE R543.

545 Algorithms and Info Structures (3 cr). See EE 545.

554-555 Info Theory I-II (3 cr). See EE 554-555.

Dance—Dan

Leon G. Green, Director, Div. of Health, Physical Education and Recreation (203 Mem. Gym.). Faculty: Carl J. Petrick, Diane B. Walker (Director, Center for Dance).

105 (s) **Dance** (1 cr, max arr). Same as PE 105. Modern, ethnic, ballet, jazz, square, and social dancing. Two hrs per wk. Graded P/F.

112 Dance Techniques (2 cr). Modern dance, composition, and rhythmic analysis. Three hrs per wk.

113 Problems in Dance Composition (1 cr, max 4). Various styles, choreography, movement quality, music, costuming, and staging. Two hrs per wk. Prereq: 105 or perm.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

220 Rhythms for Children (2 cr). Alt/yrs 79-80. Movement, structured rhythmic movement form; creative rhythmic movement; teaching rhythms and creative movement. One lec and two hrs lab per wk.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

320 Labanotation (1 cr). Alt/yrs 78-79. Intro to methods of notating movement; history of notation; fundamentals of labanotation; drafting a score; reconstruction of movement score notated in labanotation; teaching methods. Two hrs lab per wk.

321 Theory and Techniques of Teaching Dance (2 cr). Teaching modern dance, dance composition, and folk dance. Three hrs per wk.

325 Dance Production (2 cr). Alt/yrs 78-79. Org and production of dance concerts; publicity; set design; costumes; lighting; make-up; accompaniment; house and stage mgmt. One lec and two hrs lab per wk.

383 Adv Dance Composition, Rehearsal, and Performance (1 cr, max 4). Incl choreography and reconstruction of notated dance scores. Prereq: 113 (2 cr), 320, and 2 yrs of concert experience.

420 Dance Accompaniment (3 cr). Emphasis on recorded music, percussion, and electronic accompaniments used for contemporary dance. Prereq: MusC 141, MusH 321-322.

421 Dance History (3 cr). Dance history and its relation to other art forms; contemporary theatre dance and dance ed. Prereq: Art 101 or 102, MusH 321-322.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

Economics—Econ

Max E. Fletcher, Dept. Head (339 Admin. Bldg.). Faculty: David C. Campbell, Richard T. Dailey, Michael J. Di Noto, Max E. Fletcher, Shaikh M. Ghazanfar, Catherine A. Hoffman, John W. Knudsen, R. Ashley Lyman.

170 Contemporary Econ (3 cr). Econ issues and the econ prin involved. One semester survey course for nonmajors. Less technical than 251-252.

251-252 Prin of Econ (3 cr) (C). Econ 251: org and operation of American economy; supply and demand; money and banking; employment and aggregate output; public finance; econ growth. Econ 252; prin governing production, price relationships, and income distribution. Econ 251 and 252 each carries only two cr after 170. Prereq: 251 or perm for 252.

272 Foundations of Econ Analysis (4 cr). Not open to students who have taken 251-252 or equiv. Concepts underlying micro- and macroecon analysis. Econ 272 carries only three cr after 170. Prereq: Math 111-112 or equiv.

299 (s) **Directed Study** (cr arr).

321 Interm Microecon Analysis (3 cr). Theory of the consumer, firm, industry, market, price determination, and allocation of productive resources. Honors section covering additional selected topics offered fall semester. Prereq: 251-252 or perm.

372 Interm Macroecon Analysis (3 cr). Theory of the economy as a whole; national income acctg as a tool of analysis; national output and income, employment, price levels, and growth. Honors section covering additional selected topics offered spring semester. Prereq: 251-252 or perm for regular sections; 321 or perm for honors section.

400 (s) **Seminar** (cr arr). Prereq: perm.

402 (s) **Workshop** (cr arr). Prereq: perm.

403 Money and Banking (3 cr) (C). Influence of money and banking on econ activity and of monetary policies to achieve society's econ goals. Prereq: 251-252 or 272.

409 Public Finance (3 cr). Role of govt in a market economy, public sector allocation criteria, analysis of tax shifting and incidence, structure and econ effects of major federal taxes, govt budgeting, fiscal policy, public debt, and special topics. Prereq: 251-252 or 272.

410 State and Local Govt Finance (3 cr). Fiscal federalism and the role of state-local jurisdictions; patterns and determinants of expenditures, structure and econ effects of revenue sources (e.g., sales, income, property taxation), urban fiscal problems, intergovt relations, future trends. Prereq: 251-252 or 272.

430 Regional/Urban Econ (3 cr). Methods of econ analysis appropriate to regional problems; appl to Northwest. Prereq: 251-252 or 272.

433 Intro to Econometrics (3 cr). Use of quantitative tech to analyze and test econ theories. Prereq: Bus 231 or equiv stats.

435 American Econ Development (3 cr). Patterns and causes of change in the American economy from colonial times to the present. Prereq: 170 or 251-252 or 272.

436 Bus and Econ Fluctuations (3 cr). See Bus 436.

441 Labor Econ (3 cr). Structure and composition of the labor force, wages and employment, human resources, income-maintenance programs, and related policy issues. Prereq: 251-252 or 272.

474 International Econ (3 cr). Analysis of the significance and determination of international trade flows, national commercial and balance-of-payments policies, and the international monetary system. Prereq: 252 or 272.

477 Econ of Developing Countries (3 cr). Same as AgEc 477. Characteristics of underdevelopment; historical perspective; population growth; barriers to growth; theories explaining dev; dev policies. Prereq: 251-252 or 272 or perm.

485 Environmental Econ (3 cr). Welfare econ, "public goods," and the appl of econ theory to environmental problems, incl pollution. Prereq: 321 or 272 or perm.

490 Comparative Econ Systems (3 cr). Origin, dev, and attributes of major contemporary econ systems. Prereq: 170 or 251-252 or 272.

493-494 Seminar in Urban Studies (2 cr). See Inter 493-494.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

505 Hist of Econ Thought (3 cr). Econ doctrines; value and distribution; 19th century dissenters.

507 Research Methodology (3 cr). See AgEc 507.

509 Adv Microecon Theory I (3 cr) (521). Same as AgEc 509. Neoclassical theory of consumption, production, distribution, and capital; dev and use of comparative static tools of analysis.

510 Adv Microecon Theory II (3 cr). Same as AgEc 510. Current dev in microecon theory and policy.

522 Adv Aggregate Econ (3 cr). Same as AgEc 522. Theory of national income determination and stabilization policy in a monetary economy. Prereq: perm.

524 Theory of Econ Dev (3 cr). See AgEc 524.

525 Econometrics (3 cr). See AgEc 525.

526 Business Conditions Analysis (3 cr). Social acctg and macroecon theory pertaining to econ forecasting and analysis. Prereq: perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Education—Ed

Thomas O. Bell, Director, Division of Teacher Education (301 Educ. Bldg.). Faculty: Eldon D. Archambault, Terry R. Armstrong, Thomas O. Bell, Melvin W. Farley, Zeph H. Foster, Mark L. Freer, Judith A. George, Connie L. Juel, Paul F. Kaus, Edward L. Kelly, Gwendolyn N. Kelly, Joseph T. Kelly, Thomas E. Richardson, Everett V. Samuelson, Robert H. Shreve, Lewis B. Smith, Herbert J. Vent, Edward C. Woolums, Larry K. Wriggle, Maynard F. Yutzy. See also faculty listings with business education, guidance and counseling, industrial education, office administration, and vocational teacher education.

RELATED AREAS: For other offerings in the field of ed, see: ag ed, art, bus ed, guidance and counseling, home ec, ind ed, library science, music, physical ed, special ed, and voc teacher ed. PREREQUISITE: For registration in upper-div courses in ed,

students must have been admitted to the teacher-ed prog and have a GPA of 2.00, unless a higher average is stated as prereq in the course description.

200 (s) **Seminar** (cr arr). Prereq: perm.

201 Intro to Teaching (2 cr). Incl teaching aid experience, writing objectives, courses and unit planning, teaching strategies, and classroom eval tech. Two lec plus fifty hrs of clinical experience in public schools during semester.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

273 International Ed Scene (1-9 cr, max 9). Also offered as 473. Study-tour conducted by a UI faculty member to observe selected ed systems and procedures in foreign countries. One cr per wk.

299 (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

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 ed process.

303 Kindergarten Ed (2-3 cr). Hist, theory, equipment and practices; helping the child become oriented to school routine.

314 Strategies for Teaching (2-3 cr). Problems and methods of teaching common to all subject and grade levels. Two lec or two lec and three hrs of microteaching lab per wk.

315 Secondary School English Methods (2-3 cr). Special methods, problems, and materials. Two lec or two lec and three hrs of microteaching lab or field problems per wk.

316 Secondary School Social Studies Methods (2 cr). Special methods, problems, and materials.

317 Secondary School Science Methods (2 cr). Special methods, problems, and materials

318 Secondary School Math Methods (2 cr). Special methods, problems, and materials.

319 Secondary School Art Methods (2 cr). Special methods, problems, and materials.

320 Primary Language Arts Methods (3 cr). Strategies for teaching oral language, listening, and composition; all topics dealing with language, other than reading and lit, in the elem school.

326 Elem School Math Ed (3 cr). Curriculum; availability and use of instructional materials and devices. Prereq: Math 135-136.

328 (s) **Audiovisual Aids** (1, 2, 3 cr, max 6). Twelve minicourses of ½ cr each offered in a year, six per semester. Students must enroll for 2, 4, or 6 minicourses per semester. Prin and methods of AV instruction; subjects normally offered: slide photo in teaching; TV in the classroom, portable TV equipment; overhead and opaque projection tech; display tech; lettering; equipment operation I & II; visual literacy projects in teaching multi-image, dissolve, and slide synch presentations; black and white photo in teaching; and internship at teacher center. Eight lec-labs for each minicourse. Prereq for internship: 1 cr in AV aids.

C&X338 Methods and Materials in Language Arts (3 cr). The language arts program; reading, spelling, comm, and handwriting; readiness, retardation, enrichment, and selection of materials.

341 Secondary School Foreign Language Methods (2 cr). Special methods, problems, and materials.

375 Elem School Art Methods (2 cr) (275). Materials and tech; correlation of art with other subjects and activities.

381 Elem School Music Methods (3 cr). See MusT 381.

400 (s) **Seminar** (cr arr). Prereq: perm.

402 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

406 Elem School Team Teaching (3 cr). Philosophy; org; trends in bldg constr for team teaching; curriculum materials; role of teacher, pupils and auxiliary personnel.

411 The Jr High School (3 cr). Prin, org, admin, and methods of instruction.

415 Ed Psych (3 cr). Appl of psych prin and methods to the school situation. Prereq: Psych 100.

421 Elem School Social Studies Methods (2-3 cr). Curriculum, instructional materials, and devices. Two 2-hr lec or two 2-hr lec and 3 hrs of microteaching lab per wk; one ½-day and one 1-day field trip.

426 Org and Admin of School Media Centers (3 cr). Standards for media prog, physical facilities, staffing, budget, media services, and in-service prog.

429 Elem School Curriculum (3 cr) (C). Overview; goals; curricula and tech; place of skills and abilities; content areas; appreciative and creative prog.

430 Practicum: Elem School Teaching (3-9 cr, max 9). Offered each nine wks. Supervised teaching in elem schools. Graded P/F. Prereq: 320, 326, 445, Psych 205 or Ed 415, cumulative GPA of 2.25, and perm of dept. (Submit appl to director of clinical experiences in teacher ed by December 1 of school yr prior to enrolling.)

431 Practicum: Secondary School Teaching (3-9 cr, max 9). Offered each nine wks. Supervised teaching in secondary schools. Graded P/F. Prereq: 314, 415, 445, cumulative GPA of 2.25, and perm of dept. (Submit appl to director of clinical experiences in teacher ed by December 1 of school yr prior to enrolling.)

431 Practicum: Music Teaching (3-9 cr, max 9). Supervised music teaching in public schools. Graded P/F. Prereq: 314, 415, 445, cumulative GPA of 2.25, and perm of dept. (Submit appl via coordinator of music ed to the director of clinical experiences in teacher ed by December 1 of school yr prior to enrolling.)

433 Practicum: Dance Teaching (3-9 cr, max 9). Supervised teaching in grades 1-12; two-thirds of experience in secondary schools. Graded P/F. Prereq: 314, 445, special methods in subject area, cumulative GPA of 2.25, and perm of dept. (Submit appl via director of Center for Dance to the director of clinical experiences in teacher ed by December 1 of school yr before enrolling.)

434 Children's Lit (3 cr) (C). For each grade level; story plays, dramatizations, effective reading and telling children's stories, and their place in elem school.

435 Practicum: Elem School Teaching (Special) (3 cr). For secondary ed students majoring in art or physical ed who wish to qualify for Idaho endorsement to teach these subjects at the elem level. Graded P/F. Prereq: special methods in the subject area. (Submit appl to director of clinical experiences in teacher ed by December 1 of school yr prior to enrolling).

436 Elem School Reading (3-6 cr, max 6). Teaching reading at the primary and interm levels.

438 Elem School Math Lab (3 cr). Constr and solution of problems based on experiments that may be easily performed in elem schools.

439 Comparative Ed (3 cr). Ed systems in relation to the cultural backgrounds that give rise to them.

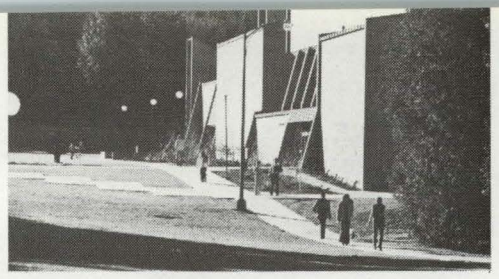
443 Teaching of Geography (3 cr). Same as Geog 492. Trends, methods, A-V materials, planning the prog, specialized skills and forces contributing to change in geographic ed.

444 Elem School Science Methods (2-3 cr). Instructional materials and devices. Two lec or two lec and 3 hrs of microteaching lab per wk; one ½-day and one 1-day field trip.

445 Proseminar in Teaching (1 cr). Offered each nine wks. Orientation to practicum. Graded P/F.

448 Production and Use of Media in Ed (3 cr). Production, use, and org of media in the student's field of interest. Prereq: experience in teaching.

467 Developing Reading Efficiency (3 cr). Detection and correction of factors that interfere with the dev of efficient reading.



468 Contemporary Ed (3 cr). Role of ed and problems of the profession in society as related to historical and philosophical backgrounds.

473 International Ed Scene (1-9 cr, max 9). See 273.

498 Instructional TV Institute (6 cr). Prep, use, and eval of telecourses.

499 (s) **Directed Study** (cr arr). Graded P/F. Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 Ed Admin (3 cr). Prin and problems of org and admin of city, county, and state systems. Two field trips.

505 School Finance (3 cr). Theory of financing schools; appl to Idaho problems. Prereq: 504.

506 Elem Ed Admin (3 cr). Patterns of org of grades 1-6; problems and tech. Prereq: 10 cr in ed.

507 Supervision of Instruction (3 cr). Prep of supervisors to aid teachers in the improvement of instruction.

508 Secondary Ed Admin (3 cr). Problems of org, admin, and supervision of the secondary school; problem of small high schools.

509 Ed TV (2 cr). Experience in educational innovations.

510 Philosophy of Ed (3 cr). Analysis of ed objectives, concepts, and theories.

511 Planning and Administering the Curriculum (3 cr). Processes of systematic curriculum dev, decision-making roles, processes in curriculum planning, supporting admin patterns and instructional arrangements; trends, issues, strategies in subject-matter fields.

512 Program Development and Eval (3 cr). Types of instructional systems, systematic ed prog dev; eval models, issues in measurement and eval design.

513 History of Educational Thought (3 cr). Writings that have influenced ed theory and practice.

514 The Logic of Teaching (3 cr) (460). 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.

515 Logic of New Media (3 cr). Technological dev in ed, adv forms that influence learning, teaching, and curriculum content and org.

516 Teaching Reading (3 cr). Trends in teaching reading.

517 Adv Elem School Math Ed (4 cr). Recently developed methods and materials in elem school math. Prereq: qualified for a standard elem certificate.

520 Elem School Science and Social Studies (3 cr). Methods and tech; foundations of the unit as a means of instruction. Prereq: qualified for a standard elem certificate.

521 Elem School Language Arts (3 cr). Research and implications of data related to modern tech of teaching.

523 Creative Arts and Creative Teaching (3 cr). Creativity in children; art, music, socio-drama-creative writing. Prereq: qualified for a standard elem certificate.

525 Problems in Secondary Social Studies (3 cr). Recent research and interp in social studies content, methods, and materials.

X528 Reading Instruction and Improvement (3 cr). Not open for cr to students who have taken 436. Tech of teaching reading in lower and interm grades; problems of remedial reading through 12th grade; materials, procedures, testing, and curriculum.

530 Ed Law (3 cr). Statutory and case materials; prin appl to all states.

531 Elem School Math Ed Research (3 cr). Classic and contemporary research; experimental studies; rationale for position of specialist; objectives; coordination of services. Prereq: perm.

538 Student Teaching Supervision (3 cr). Nature and scope of student teaching; role of cooperating agencies; role of participants; tech; planning; eval.

551 Children's Lit and the Curriculum (3 cr). How all phases of lit fit into and become a part of the curriculum; developing various areas of the curriculum based on lit; eval of lit, authors, and illustrators.

560 Research and Wrtg (3 cr). Tech of research in ed.

572 Measurement and Eval (3 cr). Improvement of testing, exam, and eval in schools; practice in making, giving, scoring, and interpreting tests; use of results in counseling.

580 Seminar in Admin and Contemporary Issues (3 cr). See Inter 580.

587-588 Modern Tech of Science Instruction in Physics (2 cr). See Phys 507-508.

590 History of Ed (3 cr). Dev and influence of ed ideals and practices.

591 Admin of Personnel (3 cr). Selection, placement, and eval of teachers; salaries and salary schedules; tenure; leave of absence; teacher orgs and related matters.

592 School-Community Relations (3 cr). Interp the schools to the public; two-way flow of ideas between school and community.

593 School Facilities Planning and Maintenance (3 cr). Planning new school facilities and maintaining them; legal provisions involving financing; preliminary surveys of need; relationships with architects and contractors. Two field trips.

594 Theory in Ed Admin (3 cr). Theories from psych, sociological, and cultural points of view; appl to school admin; problem solving/decision making; case study approach. Prereq: 504.

595 Higher Ed (3 cr). College and university ed in the U.S.; hist, objectives, org, finance, instructional methods, faculty, and student problems.

596 Collective Negotiations for Teachers (3 cr). Collective negotiations in public ed; recognition of bargaining agent; appropriate unit; admin personnel and unit determination; representation and recognition procedures; scope and process of negotiations; bargaining power and impasse procedures; collective agreement; impact of collective negotiations.

597 (s) **Practicum** (cr arr). Graded P/F. Prereq: perm.

598 (s) **Internship** (cr arr). Currently offered in public school teaching, college teaching, ed admin, and higher ed. Graded P/F. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Electrical Engineering—EE

Joe E. Thomas, Dept. Chairman (214 Buchanan Engr. Lab.). Faculty: Terry B. Cline, David F. Cox, John W. Dickinson, Earl E. Gray, Jack I. Hagen, George G. Hespelt, John P. Law, Gary K. Maki, Paul Mann, William R. Parish, James N. Peterson, Anthony L. Rigas, Joe E. Thomas, Karen H. Van Houten.

C010 Elem Elec Theory (0 cr). Basic elec theory and circuits for elec employees based upon the background of high school algebra, geometry, and physics. Content equiv to 2 cr for fee purposes.

200 Systems and Circuits I (3 cr). Intro for engr students; incl power and energy, circuit analysis, transient and steady-state behavior, resonant systems, and basic amplifying devices and circuits. Prereq: Math 180.

201 Transients in Linear Systems (4 cr). Analysis of transients in elec and mech systems and circuits; Laplace transform theory and appl. Three lec and one 3-hr analog computation lab per wk (lab may be taken separately). Coreq: 203, Math 310, or perm.

203 Systems and Circuits II (4 cr). Continuation of 200 with emphasis on appl in electronics, magnetic circuits, energy conversion, feedback systems, and instrumentation. Three lec and one 3-hr lab per wk. Prereq: 200.

204 (s) **Special Topics** (cr arr).

240 Digital Computer Fundamentals (3 cr). Algorithms, computer org; number systems; concepts of machine language programming; data structure; subroutines; I/O operations; hands-on use of minicomputer stressed.

292 Sophomore Seminar (0 cr). Curriculum options, elective courses, prep for graduate study, and current tech topics. Field trip may be required. Graded P/F.

310 Electronics I (5 cr). Intro to the appl of electron devices in elec networks; devices considered incl diodes, bipolar and field effect transistors, and linear integrated circuits (op-amps); circuit configurations and interest incl rectifiers and power supplies, small signal amplifiers, large signal amplifiers, and oscillators. Four lec and one 3-hr lab per wk. Prereq: 203.

314 Electronics and Control Systems (4 cr). For nonmajors. Electronic devices and systems; linear control systems. Three lec and one 3-hr lab per wk. Prereq: 200.

320 Elec Machinery (5 cr). Theory and appl of elec machinery and transformers. Four lec and one 3-hr lab per wk. Prereq: 203.

324 Elec Machinery (3 cr). For nonmajors. Magnetic circuits and electromech energy converting systems; theory and characteristics of common AC and DC machinery. Two lec and one 3-hr lab per wk. Prereq: 200.

330 Electromagnetic Theory (4 cr). Vector calculus; electrostatics, electrodynamics; electromagnetic waves in isotropic media; Maxwell's equations; boundary value problems. Prereq: Math 310, Phys 221.

401 Adv Circuit Theory (3 cr). Passive and active elec networks; frequency response and complex frequency domain analysis, incl pole-zero considerations, root locus, and sensitivity functions. Prereq: 201 or perm.

404 (s) **Special Topics** (cr arr).

405 Transmission Lines (3 cr). Transmission of signals and power in distributed parameter circuits; characteristic impedances, attenuation, phase shift, reflections, and Smith charts. Prereq: 201, Math 310, or perm.

410 Electronic II (3 cr). Physical electronics; diode and transistor models; noise mechanisms. Prereq: 310, 330, and Phys 360.

411 Pulse and Digital Circuits (3 cr). Electronic switching, timing, and pulse-shaping tech; logic functions, realization with diodes, transitors, and FETs. Prereq: 201, 310.

412 Pulse and Digital Networks (3 cr). Pulse and digital circuit design in special-purpose electronic networks; integrated circuit modules in sequential networks. Two lec and one project-type lab per wk. Prereq: 310, 440.

413 Adv Electronic Circuits and Systems (3 cr). Audio and radio frequency power amplifications, modulation and demodulation circuitry, frequency multiplication and changing; radio, TV, and telemetering systems and circuits. Prereq: 310, 411, or perm.

420 Direct Energy Conversion (3 cr). Direct energy conversion devices; solar cells, fuel cells, thermoelec, and thermionic devices, solar thermal electricity, flat plate collectors, solar energy utilization. Prereq: 330 and Phys 360 or perm.

421 Power System Analysis (3 cr). Problem recognition and basic analysis for the modern interconnected power system; energy supplies, voltage control, fault control, reliability, econ, and stability; intro to symmetrical components. Prereq: 320.

422 Computer Methods in Power Systems (3 cr). Analog and digital computers in the solution of load flow; short circuit and stability problems. Prereq: 421 or perm.

435 Antennas and Microwave Devices (3 cr). Antennas, antenna systems, waveguides and waveguide devices, klystrons, magnetrons, and traveling wave tubes. Two lec and one 3-hr lab per wk. Prereq: 330 or perm.

440 Digital Systems Engr (3-4 cr). Same as CS 440. Concepts of Boolean algebra, logic components; combinational and sequential circuit analysis and synthesis; number systems. Students who register for 4 cr must also take the digital logic lab, which introduces logic gates, memory, sequential detectors, and other devices. Three lec, or three lec and one 3-hr lab per wk.

441 Computer Org (3 cr). Computer org from functional to clock-pulse level; addressing, control, I/O, memory systems, and microprogramming. Prereq: 240, 440, or perm.

445 Computer Programming Systems (3 cr). Same as CS 445. System software; programming systems; machine language programming; I/O programming; assembly searching and sorting. Prereq: Math 205.

446 System Modeling and Simulation (3 cr). Same as CS 446. Computer simulation of physical and environmental systems; simulation of continuous and discrete systems; design and use of computer simulation models; probability concepts in simulation; optimization methods. Prereq: perm.

447 Computer Operating Systems (3 cr). Design and implementation of computer operating systems; batch processing, interactive processes, multiprogramming systems, and operating systems mgmt of storage, file systems, and processors. Prereq: 445 or perm.

R448 Adv Assembler Language and Operating Systems (3 cr). Same as CS R448. EXCP and CHANNEL programs, user-written SVC's, user-written program interrupt, I/O buffering tech, channel end appendage, conditional coding, and Macro writing. Prereq: perm.

449 Elements of Computer Input/Output Operations (2 cr). Fundamental elements of I/O programming incl wait loops, interrupts, direct memory access, and channels; interfacing hardware; appl will involve real-time programming examples. Prereq: 240 or equiv.

452 Comm Systems (4 cr). Linear (amplitude) modulation, exponential (frequency, phase) modulation, pulse-modulation tech, noise, intro to info theory. Prereq: 203, 310.

465 Control Engr (3 cr). For nonmajors. Continuous systems; transient response; frequency response; root locus; stability. Prereq: 200, plus familiarity with basic Laplace transforms.

470 Control Systems (4 cr). Continuous systems; frequency response; root locus; computer tech, stability criteria; modern systems theory. Prereq: 201.

480-481 Prin of Design (3 cr). Computer-aided tech, econ, marketing, reliability, and patents; projects require original design, working model, and report. Prereq: sr standing.

486 Solid-State Electronics I (3 cr). Modern microelectronics technology; thin film and thick film electronic circuits; lab projects in fabrication and testing. Coreq: 410.

491-492 Sr Seminar (0 cr). Tech topics, employment practice, and interviewing. One lec per wk; one 3-6 day field trip may be required. Graded P/F.

493 Thesis (3 cr, max 6). Original investigation or dissertation upon some subject in elec engr. Prereq: sr standing and perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

ID502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

505 Nonlinear Network Analysis (3 cr). Approximation methods; describing functions; harmonic balance tech; perturbation methods; numerical analysis methods using digital computers. Prereq: 200 and ability to use digital computation facilities.

ID507 Computer-Aided Network Design (3 cr). Digital computers in design of elec networks; constrained and unconstrained optimization in network design. Prereq: perm.

ID512 Active Network Synthesis (3 cr). Active devices; classical network synthesis, two-port theory; amplifiers, filters, negative impedance converters. Prereq: 401 or perm.

ID520 Adv Elec 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: 320.

ID521 Power System Planning and Resources (3 cr). Major decision-making and econ factors in elec energy systems, planning and resource selection; hydroelec, nuclear, and fossil fuel plants, steady state and transient stability, reliability, voltage levels, econ choices, and future resource potential.

ID523 Symmetrical Components (3 cr). Concepts of symmetrical components, sequence impedances of devices and lines, circuit equiv for unbalanced faults, mgmt during faults. Prereq: 421.

ID524 Transients in Power Systems (3 cr). Voltage transients; overvoltages during faults; recovery voltage characteristics; arc restrikes, switching surges, ferroresonance, and nonlinear phenomena. Prereq: 421.

530-531 Electromagnetic Field Theory I-II (3 cr). EE 530: static field problems; Laplace and Poisson equations for charge configurations. EE 531: time-varying fields, radiation, propagation in anisotropic and layered media; vector and scaler potentials, retarded potentials; general relativity theory. Prereq: 330 for 530, 530 for 531. Equiv to Phys 541-542.

533 Antenna Theory (3 cr). Linear, loop, and special antennas; synthesis and arrays; microwave reflectors and lenses. Prereq: 531 or perm.

535 Microwave Circuits (3 cr). Waveguide systems and components, oscillators and detectors; masers, parametric amplifiers, and other related methods. Prereq: 531 or perm.

540 Switching and Finite Automata Theory (3 cr). Same as CS 540. Finite-state automata; functional decomposition; threshold logic; synchronous and asynchronous sequential design; sequential circuit decomposition; fault detection and diagnosis in combinational and sequential machines. Prereq: 440.

541 Design of Digital Computer Systems (3 cr). Same as CS 541. Formal description of computer systems; multiprocessor org, microprocessor design and systems, self-checking microprocessor design, microprogramming. Prereq: 441 or equiv.

542 Theoretical Models for Computation (3 cr). Same as CS 542. Theoretical models with widest appl to computer systems and programming; equivalence between abstract machines and corresponding formal grammars; formal languages and grammars; turing machines. Prereq: 445 or equiv.

R543 Teleprocessing Systems Design (3 cr). Same as CS R543. Components of a teleprocessing system: terminals, modems, the telecomm network, the central site; types of teleprocessing: message switching, on-line inquiry systems, transaction-processing systems; software for teleprocessing systems; use of telecomm packages.

R544 Adv Computer Programming Systems (3 cr). Adv systems software; generation of operating systems and I/O systems; adv machine language programming.

545 Algorithms and Info Structures (3 cr). Same as CS 545. Basic algorithms of computer sc; implementation of algorithms on the computer, lists, list-processing languages, and data structures. Prereq: 445 or equiv.

R547 Applied Time Series Forecasting (3 cr). Same as ApSt R547. Necessary theory for ident by bldg stochastic and dynamic models for desiging forecasting and control schemes; emphasis on problem solving; examples used to illustrate methods; students participate in solution of specimen problems.

WS548 Hybrid Simulation Techniques (3 cr). WSU 513. Design of hybrid computers and their appl to complex systems. Prereq: 201, 440.

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. Prereq: 440 or equiv.

ID550 Comm Theory I (3 cr). Quantum receiver prin; channel constraints, binary comm tech; fading and scattering media, diversity tech; optimum reception; phase-locked loops. Prereq: perm.

ID551 Comm Theory II (3 cr). Hypothesis testing; optimum detection of signal in noise; sequential detection; maximum likelihood estimation; spatial processing; data reduction tech. Prereq: perm.

554-555 Info Theory I-II (3 cr). Same as CS 554-555. EE 554: information and uncertainty measure; channel capacity; reliable transmission through unreliable channels. EE 555: error-detecting/correcting code via linear codes, polynomial codes, Bose-Chaudhuri codes, codes for arithmetic operations; design of encoders and decoders. Prereq: perm.

572 Modern Control Theory (3 cr). Control concepts, controlability, observability, and stability; relation between modern and classical control theory. Prereq: 470.

574 Optimal Control Theory I (3 cr). Classical theory of min-max; calculus of variations; Lagrange problem; stochastic processes; Wiener-Hopf and Kalman-Bucy filtering; linear programming. Prereq: 572.

575 Optimal Control Theory II (3 cr). Search tech and nonlinear programming; dynamic programming; maximum prin. Prereq: 572.

WS581-WS582 Wave Propagation I-II (3 cr). WSU 528-529. EE WS581: theory of radio wave propagation in a magnetoionic medium; appl to comm problems; plasma waves; atmospheric waves. WS582: phenomena occurring within the solar-terrestrial environment; dynamics of and wave propagation in the magnetosphere.

WS583 Artificial Intelligence and Heuristic Programming (3 cr). WSU CptS 501. Normative and descriptive models of intelligent processes; programming languages used to specify these models.

WS584 Modeling and Simulation of Ecological Systems (3 cr). WSU CptS 510.

WS585 Adv Topics in Info Processing (3 cr, max 6). WSU CptS 520.

ID586 Solid-State Electronics II (1-3 cr, max 6). Offered in one-cr modules. Typical modules are: adv treatment of bipolar transistors, other junction devices, metal-semiconductor devices, field-effect transistors, optoelectronic devices, Gunn oscillators and other bulk-effect devices, properties of semiconductors, and semiconductor stats and noise mechanisms. Prereq: 410, 486, or perm.

588 Equilibrium Tensor Properties of Solids (3 cr). Tensor analysis; crystal symmetry and symmetry transformations; dielectric, magnetic, and elastic properties; interaction effects; piezoelectricity; optical properties; piezo-optical effects. Prereq: perm.

589 Transport Phenomena in Solids (3 cr). Elec and thermal conductivities, diffusivility; thermoelectric, electrodiffusive, and thermodiffusive conductivities; thermodynamics or irreversible processes; Hall, Nerst, Ettinghausen, and Leduc-Righi effects; piezoresistance and piezogalvanomagnetic effects. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Engineering Technology/ Electrical Engineering—ET/EE

130 Basic Electricity (4 cr). Same as IEd 130. Tech theory and skills in elec testing procedures; prep of instructional prog for jr high schools.

131 Basic Electronics (4 cr). Same as IEd 131. Continuation of ET/EE 130. Electron tube and semiconductor circuits. Prereq: 130.

R135 Electrical Systems (3 cr). Same as IEd R135. Fundamentals of AC/DC circuits and components, motors, transformers, and switchgear; national elec code wiring requirements.

R215 Electronic Components (3 cr). Same as IEd R215. Physical and elec characteristics of electronic devices; emphasis on solid state devices; incl discrete and integrated circuit components.

R235 Comm Electronics (4 cr). Same as IEd R235. Appl of electronic circuits to comm equipment; radio receivers and transmitters; tech radio and TV for avocational use. Prereq: 130-131.

R240 Electronics and Control Systems (3 cr). Same as IEd R240. Complex frequency domain; appl of electronic devices and systems; intro to control theory.

R245 Minicomputer Fundamentals (3 cr). Same as IEd R245. Machine language programming, use of minicomputer software, assembler programming, real-time programming, interrupt facilities, system allocation.

R320 Electronic Drafting (3 cr). Same as IEd R320. Drafting philosophy as related to instrumentation and control circuits; design, layout, and fabrication of printed circuit boards; drafting as related to circuit fabrication.

R330 Industrial Instrumentation I (3 cr). Same as IEd R330. Utilization of electronic circuits and devices for process parameter measurements.

R331 Industrial Instrumentation II (3 cr). Same as IEd R331. Methods of process control from digital and analog signals; investigation of computer control concepts.

R333 Computer Electronics (3 cr). Same as IEd R333. Logic of circuits, basic circuits used in computers, and interfacing hardware for computer peripherals.

Engineering (General)—Engr

Roland O. Byers, Chairman (324 Janssen Engr. Bldg.). Faculty: Roland O. Byers, Charles K. Nelson, Terry A. Precht, Robert E. Rinker, Weldon R. Tovey, Robert L. Turner.

101 Engr Graphics (2 cr) (C). Visualization and drawing of points, lines, planes, and solids in space.

102 Engr Graphics (2 cr) (C). Descriptive geometry; graphical solution of problems involving points, lines, planes, and surfaces in space. Prereq: 101 or equiv.

120-121 Engr Analysis and Design I-II (2 cr). Open to nonengr students by perm. Engr orientation, problem solving, and intro to design process.

131 Digital Computer Programming (1-2 cr) (C). Same as CS 131. Prin and logic, flow-charts, one- and two-dimensional arrays, function and subroutine subprograms.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

234 Adv Fortran Programming (2 cr). Same as CS 234. Complex and logical variables, adv I/O, disk and tape use, numeric and nonnumeric algorithms. Prereq: 131.

294 The Man-Made World (4 cr). For nonengr students. Intro to technology through the dev of such concepts as decision making, optimization, systems, and uses of the computer. Three lec and one 3-hr lab per wk. Prereq: high school algebra.

299 (s) **Directed Study** (cr arr). Prereq: perm.

R314 Adv Engr Graphics (2 cr). Industrial drafting practices, curve plotting, sketching, production illustrations, graphical math. Prereq: 101.

294 Technology and Societal Decisions (3 cr). Same as Inter 394. Engr approach to decision making in society, incl eval of alternatives based upon econ, social, and human values.

396 Society and Engr Decisions (3 cr). Primarily for engineers. Commercial, political, sociological, and ecological considerations relevant to technological decisions.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr). Prereq: perm.

407 Professional Mgmt for Engineers (3 cr). Consideration of analyt, quantitative, and human functions in mgmt sc; emphasis on socioecon synthesis.

411 Engr Fundamentals (3 cr). May not be used toward an engr degree. Review of basic engr and sc material covered in undergrad engr curricula. Prereq: engr degree or perm.

495 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

N496-N497-N498 Engr Concepts for High School Teachers I-II-III (2 cr; 3 cr; 2 cr). Based largely on the Engr Concepts Curriculum Project (ECCP), The Man-Made World, parts I-II-III. Seven to eleven hrs of lec and lab per wk for six wks during summer session. Prereq: perm.

Engineering Science—ES

Wayne R. Hager, Chairman (224 Janssen Engr. Bldg.). Faculty: George L. Bloomsburg, Robert E. Doyle, Donald F. Haber, Wayne R. Hager, Jay J. Scheldorf, Ping-Tsoong Sun.

210 Statics (3 cr) (C). Addition and resolution of forces; vector algebra; graphical methods; equilibrium; free body diagrams, trusses; frames; friction, centroids and moments of inertia; fluid statics; virtual work. Coreq: Math 190.

211 Intro to Mechanics (4 cr). Resolution of forces; vector analysis; equilibrium; free body diagrams; centroids and moments of inertia, kinematics, kinetics, work energy, and momentum methods for systems of particles. Three lec and one 2-hr lab per wk. Prereq: Math 190.

220 Dynamics (3 cr) (C). Particle and rigid body kinematics and kinetics, work/energy, impulse/momentum concepts, combined scalar/vector approach. Prereq: 211 or equiv.

221 Dynamics of Rigid Bodies (2 cr). Kinematics, kinetics, work energy, and momentum methods for rigid bodies. Prereq: 211; coreq: Math 310.

301 Engr Stats (3 cr). Same as ApSt 301. Theory and appl of probability and stats to the design and analysis of engr problems; statistical distributions, experiments of comparison, regression, correlation, analysis of variance, and design of experiments.

310 Engr Materials Science (3 cr). Structure of materials; mech, elec, chem, and thermal properties of materials. Prereq: Chem 114, Phys 221.

320 Fluid Mechanics (3 cr) (C). 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: 211, Math 200.

321 Thermodynamics and Heat Transfer (3 cr). First and second laws of thermodynamics; thermodynamic processes; thermodynamic properties of fluids; flow processes; conversion of heat into work; refrigeration; conduction and radiation. Prereq: 211, Math 200.

340 Mechanics of Materials (3 cr) (C). Elasticity, strength, and modes of failure of engr materials; theory of stresses and strains for ties, shafts, beams, and columns. Prereq: 211, Math 200.

402 Applied Numerical Methods (3 cr). Same as CS 402. Approximate and numerical methods for solution of boundary value, initial value, and eigen value systems, with practical appl, errors, improvement of accuracy, and numerical and matrix tech for computation by digital computer. Prereq: Math 310.

406 Design and Analysis of Engr Experiments (3 cr). Experiments of eval and comparison, accelerated and factorial experiments, sequential, nonparametric and fatigue experiments, and analysis of data with appl to computers, propulsion, automatic control systems, air and water pollution. Prereq: college-level stats course.

490 Systems Analysis of Environmental Problems I (3 cr). Modeling and simulation of environmental systems; systems analysis and optimization tech especially applied to environmental problems. Prereq: Math 310.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

499 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

R505 Engr Stats (1-3 cr). Same as ApSt R505. Theory of

probability, stats and stochastic processes applied to selected areas of engr. Prereq: 301 or perm.

540 Continuum Mechanics (3 cr). Stress and deformation of continua using tensor analysis; relationship between stress, strain, and strain rate in fluids and solids; appl. Prereq: perm.

590 Systems Analysis of Environmental Problems II (3 cr). Systems analysis of environmental problems and processes, incl linear, dynamic, and geometric programming; systems modeling, stochastic systems, and other optimization tech. Prereq: perm.

English—Eng

Daniel D. Pearlman, Dept. Chairman (200 Faculty Office Complex - East). Faculty: Douglas Q. Adams, Henry M. Alley, David S. Barber, Jack L. Davis, Richard J. Dozier, Katheryn M. Foriyes, Richard G. Hannaford, Gene H. Krupa, John M. Lannon, James S. Malek, Ronald E. McFarland, Maryann E. McKie, Barbara R. Meldrum, Kurt O. Olsson, Daniel D. Pearlman, Goodwin C. Schaefer, Teoman Sipahigil, Ruth E. Stokes, Leo F. Storm, Charles R. Stratton, Stephen L. Tanner, Mason Tung, Roger P. Wallins, J. Gary Williams.

ADVANCED PLACEMENT: Courses in this subect field that are vertical in content are: 103-104.

PREREQUISITES: Students may enroll for a second-semester course in English without having had the first-semester course, unless it is a stated prereq to the second-semester course. Eng 103 and 104 are prereq to all upper-div courses. A transfer student who lacks 103 or 104, or both, may take either or both for cr even though he or she has already taken a literature course for which 103 or 104 are prereq here.

103 Basic Skills for Writing (3 cr). Writing exercises that address various rhetorical situations; sentence-combining exercises that develop syntactic versatility. Graded P (pass)/N (repeat).

104 Essay Writing (3 cr). Training in writing clear, concise, and vigorous prose intended to inform and convince. Graded P (pass)/N (repeat). Prereq: 103 or equiv.

111-112 Lit of Western Civ (3 cr). Masterpieces reflecting the dev of Western thought and culture. Eng 111: Classical Greece to the Renaissance. Eng 112: 17th century to the present. May be taken with 103.

126 Lit and Film (2 cr). Study of film art through related literary works.

150 Expository Prose Analysis (3 cr). Persistent problems of diction, syntax, and clear expression in student prose exposition. Prereq: 104.

175 Intro to Lit (3 cr). Basic course in literary genres (novel, drama, poetry) to provide the general student or the beginning English major with the terminology and standard tech of literary explication. May be taken with 103.

210 The Research Paper (2 cr). Intro to basic skills common to most academic disciplines in gathering data, using recognized methods of documentation and conventions of presentation; supervised writing of a research paper. Prereq: 104 or equiv.

267-268 Survey of English Lit (3 cr) (C). Eng 267: Beowulf to Samuel Johnson. Eng 268: Robert Burns to contemporary writers. Prereq: 104.

277-278 Survey of American Lit (3 cr). Eng 277: colonial beginnings to Melville. Eng 278: Whitman to contemporary writers. Prereq: 104.

291 Creative Writing: Poetry (3 cr). Intro to tech of writing poetry. Graded P/F.

292 Creative Writing: Fiction (3 cr). Intro to tech of writing fiction. Graded P/F.

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.

309 Adv Prose Writing (3 cr). Theory and practice in writing prose; many assignments in expression, explanation, and persuasion. Prereq: 104 or equiv.

313 Business Writing (3 cr). Prin of explanatory and persuasive writing applied in effective public comm. Prereq: 104 or equiv and jr standing, or perm.

317 Technical and Engr Report Writing (3 cr). Effective comm of tech info. Prereq: 104 or equiv and jr standing or perm.

321 The Novel for Nonmajors (3 cr) (C). Major novels from the 18th century to the present.

325 Contemporary Lit for Nonmajors (3 cr). Current poetry and prose; emphasis on U.S. authors.

327 Black Lit (3 cr). Same as AfrAm 327. Major works of U.S. Black writers; emphasis on the 20th century.

330 American Indian Lit (3 cr). Recent poetry and prose written by and about American Indians.

335 Shakespeare for Nonmajors (3 cr). Intro to Shakespeare's major plays.

350 Backgrounds of Lit (3 cr). Survey of those areas of tradition that underlie the art/lit of the Western world: the Bible, mythology of classical antiquity and Northern Europe, and medieval romance.

375 The Bible as Lit (3 cr). Literary qualities of the Bible.

387 Modern European Lit (3 cr). Major writers, incl dramatists of the late 19th and 20th centuries; readings in translation.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Writing Workshop for Teachers (3 cr). Theory and practice of jr/sr high school composition instruction; further dev of student's own writing skills. Three lec and one lab per wk. Prereq: 104 or equiv.

402 Composition and Criticism (3 cr). Survey of basic critical approaches that illuminate student experience as expressed in secondary-level lit; designed to aid in the integration of lit and composition.

404 (s) **Special Topics** (cr arr).

421 Development of the English Novel (3 cr). Major writers from the beginnings to Scott.

422 The Nineteenth-Century English Novel (3 cr). Dickens to Hardy.

425 Irish Literary Renaissance (3 cr). Lit of Ireland after 1880, especially Yeats, Joyce, and Synge.

426 Modern Poetry (3 cr).

427 American Fiction in the Twentieth Century (3 cr).

428 British Fiction in the Twentieth Century (3 cr).

433 Chaucer (3 cr). Intro to Chaucer's poetical works.

434 Middle English Lit (3 cr). Middle English lit to 1500, excluding Chaucer and drama.

435 Shakespeare (3 cr). Intro course, designed mainly for English majors: background and study of selected plays representative of Shakespeare's achievement in mode and kind.

436 Adv Shakespeare (3 cr). Designed mainly for English majors: intensive study of a number of plays grouped according to mode, kind, theme, or the dramatist's dev. Prereq: 435 or perm.

437 English Drama to 1642 (3 cr). Medieval through renaissance drama, emphasis upon Marlow, Jonson, Webster.

438 English Drama, 1660-1800 (3 cr). Heroic play and tragedy; sentimental drama; comedy of manners.

439 Modern English and American Drama (3 cr). Plays of the chief 20th-century dramatists.

441 Intro to the Study of Language (3 cr). 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.

442 Intro to Transformational Grammar (3 cr). Structure and processes of English syntax via transformational/generative grammar; transformational grammar compared with other approaches, including traditional; appl of transfor-

mational/generative grammar to teaching of English. Prereq or coreq: 441 or perm.

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: 441 or perm.

445 Lit for Young People (3 cr) (C). Primarily for students working for teacher or library certification. Reading and appraisal of lit appropriate to the needs, interests, and abilities of young people.

451 Sixteenth-Century Poetry and Prose (3 cr). Major authors of the period with emphasis on Spenser.

452 Milton (3 cr). Major prose and poetry of Milton.

453 Seventeenth-Century Poetry and Prose (3 cr). Major authors excluding Milton; emphasis on authors such as Bacon, Browne, Burton, Donne, Herbert, Herrick, Marvell.

456 Restoration and Eighteenth Century (3 cr). Neoclassical poetry and prose from Dryden to Johnson.

465 The Romantic Period (3 cr). Poetry and prose of the early 19th century; emphasis on Wordsworth, Coleridge, Shelley, Keats, Byron.

466 The Victorian Period (3 cr). Poetry and prose; emphasis on Tennyson, Browning, Arnold, Carlyle, Newman, J. S. Mill.

470 American Lit to 1830 (3 cr). Colonial period to the early republic; emphasis on authors such as Bradford, Taylor, Edwards, Franklin, Crevecoeur, Cooper, Irving.

471 Poe, Hawthorne, and Melville (3 cr). Major works and their place in the American Renaissance. Prereq: 277.

472 Emerson, Thoreau, and Whitman (3 cr). Major works and their place in the American Renaissance. Prereq: 277.

473 Lit of the American West (3 cr). Writings that reflect the growth of the western U.S. from frontier days to the present.

474 Growth of American Realism, 1865-1914 (3 cr). Prereq: 278.

476 American Folklore (3 cr). Forms, incl ballads and folksongs, known in the U.S.; their collection and study with special attention to their appearance in American lit.

482-482 (s) **Major Authors** (3 cr). Comprehensive study of the works of a single author. See the time schedule for author.

491 Adv Creative Writing: Poetry (3 cr). Continuation of 291. Graded P/F. Prereq: 291 and perm.

492 Adv Creative Writing: Fiction (3 cr). Continuation of 292. Graded P/F. Prereq: 292 and perm.

494 Methods of Literary Criticism (3 cr). Intro to major prin and methods of literary analysis; practice in applying critical methods to selected poems, fiction, and drama.

495 Literary Criticism (3 cr). From Plato to the present.

496 Hist of the English Language (3 cr). Evolution of the language from Proto-Germanic to American English.

499 (s) **Directed Study** (1-3 cr, max 3). Prereq: perm.

500 Master's Research and Thesis (cr arr). Graded P/F.

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (1-3 cr, max 3). Normally offered in English and American lit and in linguistics; may not duplicate course offerings. Graded P/F. Prereq: perm.

503 Problems and Methods of Literary Study (3 cr).

504 (s) **Special Topics** (cr arr).

505 (s) **Workshop** (cr arr). May be graded P/F. Prereq: perm.

506 Language and Teaching of Writing (3 cr). Linguistic, rhetorical, stylistic, and pedagogical concepts essential to teaching college-level writing.

507 (s) **Studies in the English Language** (3 cr, max 9). Normally offered in Old English, Middle English, and Early and Late Modern English. Prereq: 441, 496, or perm.

510 (s) **Studies in Linguistics** (3 cr, max 12). Topics such as phonology, morphology, syntax, linguistic hist, or the appl of linguistics to the teaching of English lit or composition. Prereq: 6 cr in the following: 441, 442, 443, 496, 506, or perm.

511 (s) **Studies in Literary Criticism** (3 cr, max 12). Hist of criticism; various schools of literary criticism. Prereq: 495 or perm.

512 (s) **Studies in Literary Theory** (3 cr, max 12). Various genres (poetry, drama, fiction), forms, and modes (tragedy, comedy, satire).

520 (s) **Studies in Medieval Lit** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

530 (s) **Studies in Renaissance and 17th-Century British Lit** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

540 (s) **Studies in Restoration and 18th-Century British Lit** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

550 (s) **Studies in 19th-Century British Lit** (3 cr, max 12). Normally offered in survey of Romantic lit, survey of Victorian lit, genre studies, and major author(s).

560 (s) **Studies in American Lit Before 1900** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

570 (s) **Studies in 20th-Century British and American Lit** (3 cr, max 12). Normally offered in period survey, genre studies, and major author(s).

599 (s) **Research** (cr arr). Prereq: perm.

Entomology—Ent

Arthur R. Gittins, Dept. Head (242 Iddings Wing, Ag. Sc. Bldg.). Faculty: Craig R. Baird, William F. Barr, Guy W. Bishop, Merlyn A. Brusven, Gene P. Carpenter, Richard C. Dobson, Arthur R. Gittins, Hugh W. Homan, Lawrence E. O'Keeffe, Larry E. Sandvol, Donald R. Scott, Howard W. Smith, Ronald W. Stark, Mary W. Stock, Robert L. Stoltz, Norman D. Waters.

X121 Applied Ent (3 cr). Ident, life hist, biol, and control of insect pests in the Northwest.

211 General Ent (4 cr). Structure, dev, classification, habits, and ecology of insects. Three lec and one 3-hr lab per wk.

314 Ent for Biol Teachers (3 cr). Use of insects in illustrating biol prin; tech and methodology in rearing, preparing, and studying insects. Two lec and one dem-disc per wk. Prereq: perm.

322 Economic Ent (3 cr). Insect relationships to man and his environment; indent, biol, and control. Two lec and one 2-hr lab per wk.

342 Insect Ident (4 cr). Survey of major families; collecting and preservation tech. Two lec and two 2-hr labs per wk; two 1-day field trips. Prereq: 211.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

400 (s) **Seminar** (cr arr). Prereq: perm.

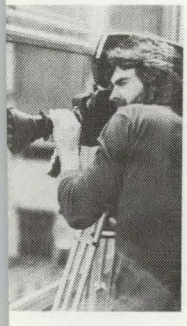
438 Pesticides in the Environment (2 cr). Same as PISc 438 and Inter 438. Role of herbicides, fungicides, bactericides, nematocides, insecticides, and rodenticides in pollution, with methods of detection, control, and prevention.

442 Immature Insects (3 cr). Alt/yrs 78-79. Structure, behavior, and ident of immature insects. One lec and two 2-hr labs per wk. Prereq: 211.

WS443 Insect Ecology (3 cr). Alt/yrs 79-80. Interrelationships of insects with the physical and biotic environment; populations dynamics and community relations. Two lec and one 3-hr lab per wk. Prereq: 211 or 322.

WS444 Insect Morphology (5 cr). Alt/yrs 79-80. Comparative external morphology and internal anatomy of insects. Two lec and three 3-hr labs per wk. Prereq: 211 or 322.

ID447 Plant Resistance to Insects (2 cr). Alt/yrs 78-79. Mechanisms of plant resistance; factors affecting expression or



permanence of resistance; insect-plant associations. Prereq: perm.

WS448 Medical Ent (4 cr). Insects and related arthropods in relation to human and animal health; means of control. Prereq: adv standing in ent.

467 Forest Ent (3 cr). Insects of forest environments; their biologies, ecological relationships, and recognition. Two lec and one 2-hr lab per wk; two 1-day field trips. Prereq: perm.

ID472 Aquatic Ent (1 cr). Alt/yrs 79-80. Ident and biol of insects associated with aquatic and subaquatic environments. Prereq: perm.

ID474 Aquatic Ent Lab (2 cr). Alt/yrs 79-80. Lab to accompany ID472. Two 3-hr labs per wk; two 1-day field trips. Coreq: ID472.

ID484 Insect Anatomy and Physiology (4 cr). Alt/yrs 79-80. Organ systems of insects and their functions. Three lec and one 3-hr lab per wk. Prereq: 211.

ID498 Insect Morphogenesis (4 cr). Alt/yrs 79-80. Ontogenetic dev; embryogenesis, metamorphosis, morphology, and phylogeny of insects. Three lec and one 3-hr lab per wk. Prereq: adv standing in ent.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

ID513 Ent Research Methods (3 cr). Procedures and tech of studying insects; measuring physical environmental factors.

ID517 Entomological Literature (2 cr). Survey of lit and bibliographic aids.

521 Prin of Insect Control (3 cr). Alt/yrs 78-79. Prin, theory, and methodology of regulating populations of detrimental insects.

ID541 Adv Insect Ecology (3 cr). Population and community dynamics; theory and appl in natural and artificial systems. Two lec and one 3-hr lab per wk; two 1-day field trips. Prereq: 211 and general ecology or perm.

WS542 Insect Behavior (4 cr). Alt/yrs 79-80. Behavior of insects; orientation to environmental conditions. Three lec and one 3-hr lab per wk.

WS543 Population Mgmt (2 cr). Alt/yrs 79-80. Concepts and methods of pest mgmt; population and econ analysis; modeling and simulation; strategic mgmt decision-making. Prereq: perm.

544 Systematic Ent (3 cr). Alt/yrs 78-79. Prin and concepts of insect classification; taxonomic procedures and rules of zoological nomenclature.

WS545 Pesticide Chem and Toxicology (4 cr) (WS546). Alt-yrs 79-80. Mode of action of insecticides at neural membrane and molecular levels; mechanisms of selectivity and resistance to poisons. Prereq: organic chem or perm.

WS549 Biol and Integrated Control (2 cr) (WS 449). Alt/yrs 79-80. Use of natural organisms for control of insect and weed pests; dev of integrated programs. Prereq: perm.

WS550 Insect Physiology (4 cr) (WS451). WSU 550. Alt/yrs 78-79. Mechanisms of vital processes in insects; the organ, cellular, subcellular, chem, and physical levels. Prereq: courses in organic chem and cell physiology.

569 Adv Forest Ent (3 cr). Alt/yrs 79-80. Same as FWR 569. Biol and econ eval and applied control of forest insect populations; population phenomena. Two lec and one 2-hr lab per wk; two 1-day field trips to univ forest. Prereq: 467 or perm.

ID582 Insect Physiological Ecology (4 cr). Alt/yrs 78-79. Interrelationships of environment with metabolic functions, structure, and biol of insects. Three lec and one 3-hr lab per wk. Prereq: ID484 or perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Film

Don H. Coombs, Director, School of Communication (Communication Bldg.). Faculty: Peter A. Haggart.

288 Basic Film—Super 8 (3 cr) (Photo 288). Basics of motion picture production; students may need to furnish camera and film. Two lec and one lab per wk.

302 History of American Film (3 cr). Open to all students. Dev of U.S. motion picture industry; film as an art form; film types and styles; selected directors. Feature film showing and background lec one evening per wk.

303 American Documentary Film (2 cr). Open to all students. Dev of nonfiction film; documentary style and form; film's power to communicate; noted filmmakers; issues raised by films. Film showing and lec one evening per wk.

388 Cinematography for TV (3 cr) (Photo 388). Basics for 16mm motion picture production and theory as applied in TV. Two lec and one lab per wk. Prereq: Photo 288 or perm.

Foreign Languages and Literatures

Galen O. Rowe, Dept. Chairman (314 Admin. Bldg.). Faculty: M. Audrey Aaron (Spanish), Alfred W. Jensen (Spanish), Demetrius J. Koubourlis (Russian), Elisabeth Lapeyre (French), Cecelia E. Luschnig (Classics), Marny S. Menkes (Classics), Michael W. Moody (Spanish), James R. Reece (German), Eugene E. Reed (German), Alan Rose (French), Galen O. Rowe (Classics), Georgia H. Shurr (French), John B. Sita (Spanish and Italian), Elizabeth E. Stevenson (French), John H. Sullivan (German), Robert L. Surles (Spanish), Phyllis M. Van Horn (English as a Second Language).

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: FL/FR 101-102-201-202; FL/GN 121-122-221-222; FL/GK 341-342-441-442; FL/IT 151-152-251-252; FL/LA 161-162-261-262; FL/RU 171-172-271-272; FL/SP 181-182-281-282. In appropriate cases, with the approval of the chairman of the Dept of Foreign Languages and Literatures, any one of the following courses may be considered the terminal course in the vertical sequence for adv placement: FL/FR 301-302; FL/GN 321-322; FL/LA 361-362; FL/RU 371-372; FL/SP 381-382.

PREREQUISITE: Prereq for upper-div language courses, except those in Greek, is appropriate interm course or equiv.

COURSES OFFERED IN ENGLISH—FL/EN

No knowledge of foreign language required. May be used to fulfill the L & S humanities requirement.

100 English as a Second Language (3 cr, max 6). Limited to students whose native language is not English. Normally scheduled on the basis of three lec per wk; however, additional lec, lab, and/or tutorial sessions may be scheduled and required. Prereq: perm of dept.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

211-212 Classical Mythology (2 cr). Intro to classical myths and legends and their survival in western lit and art.

243-244 English Word Origins (2 cr). Fundamental Latin and Greek words used in the humanities and natural sc; emphasis on terminology of fields in which students are interested; knowledge of Greek or Latin is not required.

299 (s) **Directed Study** (cr arr). Prereq: perm.

313-314 Modern French Literature in Translation (3 cr). Does not count toward a major or minor in French. Major modern French authors in English translation; knowledge of French is not required.

323-324 German Literature in Translation (3 cr). Does not count toward a major or minor in German. Knowledge of German is not required.

363-364 Survey of Classical Origins (3 cr). FL/EN 363: Greece. FL/EN 364: Rome. Lit, hist, philosophy, archaeology, and art of Greece and Rome; disc and writing.

373-374 Russian Literature in Translation (3 cr). Close exam of works of a selected 20th-century author; comparison of soviet and western cultures. Knowledge of Russian is not required.

393-394 Masterpieces of Spanish Literature in Translation (3 cr). Does not count toward a major or minor in Spanish. Knowledge of Spanish is not required.

400 (s) **Seminar** (cr arr). Prereq: perm.

409 ESL Language Lab (1 cr, max arr). Adv conversational skills. Graded P/F. Prereq: perm.

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

FRENCH—FL/FR

101-102 Elem French (4 cr). Pronunciation, vocab, reading, spoken French, and functional grammar.

103 French Language Lab (1 cr, max arr). Elem and interm converstaional skills. Graded P/F. Prereq: perm.

104 Elem French Revised (4 cr). Not open for cr to students who have taken 101 or equiv in college. Review of subject matter covered in FL/FR 101-102. Prereq: 2 yrs of French in high school or perm.

105-106 French for Graduate Students (0 cr). Prep for the doctoral reading exam. Two 1-hr recitations per wk. Graded P/F.

200 (s) **Seminar** (cr arr). Prereq: perm.

201-202 Interm French (4 cr). Reading, grammar review, speaking, and writing. Prereq: 102.

204 (s) **Special Topics** (cr arr).

299 (s) **Directed Study** (cr arr). Prereq: perm.

301-302 Adv French Grammar and Composition (3 cr). Recommended for prospective teachers of French.

303-304 French Culture and Institutions (3 cr).

305-306 Survey of French Literature (3 cr). Middle Ages to the present.

390 French Language Lab (1 cr, max arr). Adv conversational skills. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

401-402 Nineteenth-Century French Literature (3 cr).

403-404 Seventeenth-Century French Literature (3 cr).

405-406 Eighteenth-Century French Literature (3 cr).

407-408 Contemporary French Literature (3 cr).

409-410 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.

411-412 French Composition and Conversation (2 cr).

413-414 French for Teachers (2 cr). Language and culture; pronunciation and diction.

415 (s) **Special Topics** (cr arr).

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 Hist of the French Language (3 cr).

504 Explications Francaises (3 cr).

505 Seventeenth-Century French Drama (3 cr).

506 (s) **Workshop** (cr arr). Prereq: perm.

507 (s) **Special Topics** (cr arr).

597 (s) **Practicum** (cr arr). Prereq: perm.

596 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

GERMAN—FL/GN

121-122 Elem German (4 cr). Pronunciation, vocab, reading, spoken German, and functional grammar.

123 German Language Lab (1 cr, max arr). Elem and interm conversational skills. Graded P/F. Prereq: perm.

124 Elem German Reviewed (4 cr). Not open for cr to students who have taken FL/GN 121 or equiv in college. Review of subject matter of FL/GN 121-122 with emphasis on functional grammar and reading. Prereq: high school German or perm.

125-126 German for Graduate Students (0 cr). Prep for the doctoral reading exam. Two 1-hr recitations per wk. Graded P/F.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

221-222 Interm German (4 cr). Reading, grammar review, speaking, and writing. Prereq: 122.

223-224 Interm German: Scientific (4 cr). Readings adapted to the needs of students in scientific curricula, Prereq: FL/GN 122.

299 (s) **Directed Study** (cr arr). Prereq: perm.

321-322 Adv German Grammar and Composition (3 cr). Recommended for prospective teachers of German.

325-326 German Culture and Institutions (3 cr). Recommended for prospective teachers of German.

327-328 Survey of German Literature (3 cr). To the close of the 19th century.

329 German Language Lab (1 cr, max arr). Adv conversational skills. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

421-422 Nineteenth-Century German Literature (3 cr).

423-424 Modern German Literature (3 cr).

425-426 Eighteenth-Century German Literature (3 cr).

427-428 Classical Period in German Literature (3 cr).

429-430 German Phonetics (1 cr). Phonetic description and phonemic analysis; stress, its nature and place; intonation patterns in conversation; reading of prose and poetry.

431-432 German Composition and Conversation (2 cr).

433-434 German for Teachers (2 cr). Language and culture; pronunciation and diction.

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

506 (s) **Workshop** (cr arr). Prereq: perm.

523 Hist of the German Language (3 cr).

524 Middle High German (3 cr).

525 Goethe's Faust (3 cr).

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

GREEK—FL/GK

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

299 (s) **Directed Study** (cr arr). Prereq: perm.

341-342 Elem Greek (4 cr). Pronunciation, vocab, reading, and functional grammar.

349 Greek Language Lab (1 cr, max arr). Emphasis on basic skills. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

441-442 Interm Greek (4 cr). FL/GK 441: Xenophon's *Anabasis.* FL/GK 442: Plato's *Apology of Socrates* and Euripides' *Alcestis.*

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

ITALIAN—FL/IT

151-152 Elem Italian (4 cr). Pronunciation, vocab, reading, spoken Italian, and functional grammar.

153 Italian Language Lab (1 cr, max arr). Elem and interm conversational skills. Graded P/F. Prereq: perm.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

251-252 Interm Italian (4 cr). Reading, grammar review, speaking, and writing. Prereq: 152.

299 (s) **Directed Study** (cr arr). Prereq: perm.

359 Italian Language Lab (1 cr, max arr). Adv conversational skills. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

LATIN—FL/LA

161-162 Elem Latin (4 cr). Pronunciation, vocab, reading, spoken Latin, and functional grammar.

163 Latin Language Lab (1 cr, max arr). Elem- and interm-level skills. Graded P/F. Prereq: perm.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

261-262 Interm Latin (4 cr). Reading, grammar review, speaking, and writing. Prereq: 162.

299 (s) **Directed Study** (cr arr). Prereq:perm.

361-362 Adv Latin Grammar and Composition (3 cr). Recommended for prospective teachers of Latin.

365-366 Survey of Latin Literature (3 cr). To the close of the third century.

369 Latin Language Lab (1 cr, max arr). Adv-level expressive skills. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

461-462 Latin Literature of the Augustan Age (3 cr).

463-464 Latin Literature of the Republic (3 cr).

465-466 Latin Literature of the Silver Age (3 cr).

467-468 Latin for Teachers (2 cr).

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

RUSSIAN—FL/RU

171-172 Elem Russian (4 cr) (C, 171 only). Pronunciation, vocab, reading, spoken Russian, and functional grammar; learning through A-V aids.

173 Russian Language Lab (1 cr, max arr). Elem and interm conversational skills. Graded P/F. Prereq: perm.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

271-272 Interm Russian (4 cr). Reading, grammar review, speaking, and writing. Prereq: 172.

299 (s) **Directed Study** (cr arr). Prereq: perm.

371-372 Adv Russian Grammar and Composition (3 cr). Recommended for prospective teachers of Russian.

379 Russian Language Lab (1 cr, max arr). Adv conversational skills. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

SPANISH—FL/SP

181-182 Elem Spanish (4 cr). Pornunciation, vocab, reading, spoken Spanish, and functional grammar.

183 Spanish Language Lab (1 cr, max arr). Elem and interm conversational skills. Graded P/F. Prereq: perm.

184 Elem Spanish Reviewed (4 cr). Not open for cr to students who have taken 181 or equiv in college. Review of subject matter covered in 181-182. Prereq: 2 yrs of Spanish in high school or perm.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

281-282 Interm Spanish (4 cr). Reading, grammar review, speaking, and writing. Prereq: 182.

299 (s) **Directed Study** (cr arr). Prereq: perm.

381-382 Adv Spanish Grammar and Composition (3 cr). Recommended for prospective teachers of Spanish.

383-384 Hispanic Culture and Institutions (3 cr). Topics in Spanish-American civ.

385-386 Survey of Spanish Literature (3 cr).

387-388 Survey of Spanish-American Literature (3 cr).

389 Spanish Language Lab (1 cr, max arr). Adv conversational skills. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

449 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

481-482 Nineteenth-Century Spanish Literature (3 cr).

483-484 Golden Age in Spanish Literature (3 cr). Sixteenth and seventeenth centuries.

485-486 Contemporary Spanish Literature (3 cr).

487-488 Contemporary Spanish-American Literature (3 cr).

489-490 Spanish Phonetics (1 cr). Phonetic description and phonemic analysis; stress, its nature and place; intonation patterns in conversation; reading of prose and poetry.

491-492 Spanish Composition and Conversation (2 cr).

493-494 Spanish for Teachers (2 cr). Language and culture; pronunciation and diction.

498 (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.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

506 (s) **Workshop** (cr arr). Prereq: perm.

583 Hist of the Spanish Language (3 cr).

584 Spanish Phonetics and Phonemics (3 cr).

585 Cervantes (3 cr).

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Forestry, Wildlife and Range Sciences—FWR

John H. Ehrenreich, Dean (202 FWR Bldg.). Faculty: Ernest D. Ables, David L. Adams, George H. Belt, Jr., David H. Bennett, Elwood G. Bizeau, Theodore C. Bjornn, Vernon H. Burlison, Elmer R. Canfield, Kjell A. Christophersen, John H. Ehrenreich, C. Michael Falter, James R. Fazio, Edward O. Garton, Donald P. Hanley, Charles R. Hatch, Robert C. Heller, Minoru Hironaka, Joseph E. Hoffman, Arland D. Hofstrand, Maurice G. Hornocker, John P. Howe, Kenneth E. Hungerford, Larry L. Irwin, Frederic D. Johnson, Leonard R. Johnson, Winifred B. Kessler, John G. King, James L. Kingery, George W. Klontz, Howard Loewenstein, Craig MacPhee, Charles W. McKetta, William J. McLaughlin, E. Lee Medema, John E. Mitchell, Kenneth J. Mitchell, James A. Moore, Ali A. Moslemi, Leon F. Neuenschwander, Arthur D. Partridge, James M. Peek, Steven R. Peterson, Franklin H. Pitkin, Kenneth D. Sanders, David C. Scanlin, John A. Schenk, John H. Schomaker, Lee A. Sharp, Kenneth M. Sowles, Ronald W. Stark, Karel J. Stoszek, Joseph J. Ulliman, Chi-Wu Wang, Robert G. White.

PREREQUISITE: Courses in this subject field numbered above 299 are not open to any student who is on academic probation.

101 Forestry Orientation (1 cr). Intro to forestry and related wildland mgmt professions.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

205 Wildland Resource Conservation (3 cr). Not open to majors in the College of FWR. Concepts of forest and rangeland ecology; major resources of wildlands, prin of conservation and mgmt applicable to wildlands. Two days of field trips.

206 Wildland Resource Conservation Lab (1 cr). Descriptive survey of renewable natural resources; emphasis on Idaho's flora and fauna. Two hrs lab per wk; three days of field trips. Coreq: 205.

216 Tree Ident (2 cr). Not open to majors in the College of FWR. Ident, distribution, and econ value of important trees of western U.S.; emphasis on Idaho trees. One lec and one 2-hr lab per wk; one 1-day field trip.

221 Forest Ecology (3 cr). Ecological basis for the mgmt of vegetation, especially forests. Prereq or coreq: general bot and perm.

275 Aeiral Photo Interp of Renewable Natural Resources (2 cr) (375). Quantitative and qual eval of aerial photos for planning and decision making in renewable natural resource mgmt. One lec and one lab per wk. Prereq: college algebra.

287 Prin of Wildland Rec Mgmt (2 cr). Overview of role of wildland rec resources in society; integration of wildland rec mgmt into an overall multiple-use mgmt framework.

288 Law Enforcement in Wildland Rec Mgmt (3 cr). Role and tech of law enforcement in wildland rec mgmt; consideration of legality, quality experience, and visitor and resource protection.

294 Models for Resource Decisions I (3 cr). Methodical, logical, and scientific approach to problem solving for students of natural resources; use of systems and math to ident and eval factors influencing natural resources. Prereq: Math 180 and computer course.

299 (s) **Directed Study** (cr arr). Prereq: perm.

300 Forest Resources Measurements (1-4 cr). Map and aerial photo interp; land surveying; log, tree, and stand measurement; wildland surveys for resource inventories and mapping. One to four wks of all-day summer classes. Prereq: 275 and CE 218.

301 Wildland Ecology (4 cr). Ecological prin, methods, and concepts applied to forest, range, wildlife, anf fishery mgmt; ecological basis for integrated mgmt of wildland. Four weeks of all-day summer camp. Prereq: 221 and systematic bot.

302 Wildland Rec Field Studies (3 cr). Specialized tech used in wildland measurements; field trips, case studies, and site eval. Three wks of all-day summer camp.

303 Forest Resources Conservation (2 cr). Ecosystem approach to resource mgmt on forest and range lands; mgmt practices integrating timber, range forage, wildlife, fish, water and rec resources, stressing prin that lead to their conservation. Two weeks of all-day summer camp. Prereq: course in a biol sc.

305 Farm Forestry (2 cr). The farm woodlot; growing wood products; seasoning, preservation, use, and marketing of farm forest products; windbreak and shelterbelt planting; forestry in the econ of ag. Prereq: jr standing in ag.

307 Biometry (3 cr). See ApSt 307.

314 Wildlife Ecology (3 cr). Appl of prin of ecology to conservation and mgmt of wildlife in natural and altered habitats. Prereq: general ecology or perm.

320 Dendrology (3 cr). Ident, classification, distribution, and associations of the important tree species of the U.S.; important regional shrubs. Two lec and two 2-hr labs per wk; two 1-day field trips. Prereq: 301 and systematic bot.

324 Silviculture (3 cr). Cutting systems, cultural operations, and characteristics of important commercial species. Two lec and one 3-hr lab per wk; one or two 1-day field trips. Prereq: 221, 301.

327 Elem Forest Tree Improvement (2 cr). Same as Genet 307. Basic genetic prin and practices. Two ½ day field trips. Prereq: general bot.

331 Intro to Wood Technology (3 cr). Anatomy of woody plants, identifying characteristics and properties of woods, relation of wood properties to processing and use. Two lec and two 2-hr labs per wk; two days of field trips. Prereq: general bot.

351 Elements of Range Mgmt (3 cr). Range industry, grazing regions, production and utilization of forage, improvement and reseeding, surveys and mgmt plans; relation to other phases of wildland mgmt. Prereq: general bot.

361 Farm and Natural Resource Appraisal (3 cr). See AgEc 361.

365 Funamentals of Forest Protection (2 cr). Key factors capable of damaging forest product or amenity yields; casual relationships and interactions; impacts and controls as related to mgmt objectives. One 1-day and two ½-day field trips. Prereq: 324.

367 Wildland Fire Mgmt (2 cr). Fire mgmt based on wildland fuels, fire weather, and fire behavior; minor emphasis on fire hist, control, and use; effect of fire on the ecosystem. One 2-day field trip. Prereq: 301 or perm.

370 Prin of Forest Mgmt (2 cr). Not open to majors in forest resources. Forest regions and industries; silvicultural prin and practices employed in timber production and use; interrelations between wood production and other uses of forest land.

374 Mensuration (3 cr). Theory of log, tree, and stand measurements; elem forest sampling, variable probability sampling, growth studies. Two lec and one 2-hr lab per wk. Prereq: 300, 307.

383 Econ of Conservation (3 cr). Same as AgEc 383. Role of econ forces in resource analysis and conservation; planning of forest resource used by the firm and society. Prereq: general econ.

384 Rec Operations and Facilities Mgmt (2 cr). Functions of a park manager: workload analysis and scheduling, personnel, fiscal planning, permits, and other operations and maintenance tasks. Prereq: 287.

385 Wildland Rec Mgmt (3 cr). Goals and objectives, mgmt tools, prog implementation and eval, specific mgmt problems. Prereq: 287 or perm.

386 Wildland Rec Planning (3 cr). Integrates macro and micro aspects of land-use planning with multiple-use mgmt, national environmental and land-use policies.

387 Environmental Interpretive Methods (3 cr). Comm of natural resource messages by interpretive naturalists and other wildland managers to user publics.

388 State Parks and Related Rec Systems (2 cr). Org and mgmt prog of state park and related systems; ident of agencies, policies, mgmt objectives, unique rec prog, and criteria for selection of outdoor rec areas.

390 Prin of Fish and Wildlife Ecology (3 cr). Not open to wildlife and fishery majors. Hist, objectives, and prin of fish and wildlife mgmt, interrelationships with other renewable resources. Prereq: course in ecology or perm.

397 Renewable Natural Resources Internship (1-3 cr). Supervised field experience with an appropriate public or private agency. Graded P/F. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

WS406 Radiation Ecology (2 cr). Alt/yrs 78-79. WSU Bio S 440. Fate and effect of radionuclides in the natural environment.

408 Forest Soils (2 cr). Same as Soils 408. Properties of wildland soils; forest humus; soil-site relationships; improvement of unproductive forest soils; soils and reforestation; mgmt of nursery soils. Prereq: general soils.

411 Ichthyology (4 cr). See Zool 481.

ID413 Fish Ecology (2 cr). Racial discrimination, migration, and spawning activities of salmonids; environmental stress with reference to physiology, competition, predation, and pollution. Two lec per wk; three days of field trips. Prereq: ecology or perm.

415 Limnology (3 cr). Same as Zool 435. Interrelationships of the physical, chem, and biol features of lakes and streams. One ½-day field trip. Prereq: general chem and ecology.

416 Limnology Lab (1 cr). Same as Zool 436. Methodology and comparative tech of limnological studies; analyses of processes in experimental aquatic systems. One 2-hr lab per wk; two days of field trips. Prereq or coreq: 415.

417 Fish Culture and Diseases (4 cr). Mgmt, nutrition, and diseases of warmwater, coldwater, and marine fishes in extensive and intensive culture systems. Two days of field trips. Prereq: 411.

418 Fishery Mgmt (4 cr). Tech, methods, prin, and their appl towards managing recreational and commercial fishery and aquatic resources. Prereq: 307, 411, and 413.

419 Warmwater Fish Ecology (2 cr). Prin regulating density and diversity of warmwater fishes; adaptations and interrelationships of fishes in warmwater ecosystems; response of warmwater fishes to environmental stress. Prereq: general or animal ecology course.

420 Tropical Dendrology/Ecology (3 cr). Distribution, physiognomy, and controls of world tropical and subtropical vegetation types; ident, ecology, and uses of major pantropical trees and associated vegetation. Two 2-hr lec-labs per wk. Prereq: systematic bot.

422 Forest Planting (2 cr). Methods of seed collection, extraction, and storage; germination; nursery practice; field planting. One lec and one 3-hr lab per wk; one 2-day field trip. Prereq: 221, 301

426 Fire Ecology (2 cr). Cr will not be allowed in both 426 and 526; adv students should take 526. Fire suppression, prescribed burning, and fire mgmt; synecology and autecology of dominant species of wildland habitats. Prereq: 301 or equiv or perm.

434 Forest Engr and Harvesting (3 cr). Mgmt system concepts, incl reconnaissance, engr concepts of route design and logging, silvicultural and milling considerations, yarding systems and costs; dev of a logging plan for an operating area. Five days of field trips. Prereq: 294, 300.

436 Biol Properties of Wood (3 cr). Wood quality and growing conditions in the forest, theory and practice of air and kiln-drying, chemical impregnation. Two lec and one lab per wk; one 5-day field trip. Prereq: general bot.

437 Physical Properties of Wood (3 cr). Technology and physical properties of woods, incl wood-moisture relations; mech properties; appl of strength data and design prin to the use of wood in constr. Two lec and one lab per wk. Prereq: 331.

438 Chem Properties of Wood (3 cr). Chem of wood; chem and technological processes for the conversion of wood into commodities; properties and uses; industrial trends; adhesives and their use; wood finishing. Two lec and one lab per wk; five days of field trips. Prereq: organic chem.

WS439 Wood and Wood-Base Materials (3 cr). Alt/yrs 79-80. WSU MSE 462. Structural characterization, mechanics of property measurement, size phenomena, rheology, micromechanics and fracture, cutting tool forces, and environmental influences. Prereq: jr standing in engr, arch, or sc.

442 Wildlife Mgmt (3 cr). Analysis and manipulation of wildlife populations and habitats. Two lec and one lab per wk. Prereq: 314, Zool 482, Zool 483.

443 Wildlife Population Analysis (3 cr). Quantitative analysis of wildlife habitat, diet, harvest, population density, survival, and natality data; dev and appl of population models in wildlife mgmt. Prereq: 294, 307, and 448, or perm.

WS444 Disease Concepts for Wildlife Biologists (4 cr). WSU V Mic 435. Biol aspects of infectious diseases and environmental contaminants in wild mammalian and avian population. Prereq: perm.

445 Nongame Mgmt (2 cr). Disc; relation to current land-use practices. Prereq: Zool 482, 483, or perm.

446 Diseases of Wild Birds and Mammals (2 cr). Alt/yrs 78-79. Same as VS 446. Epidemiology, pathology, treatment, and control. Prereq: perm.

447 Prin of Big Game Mgmt (3 cr). Coordination with other land uses and habitat capabilities. Prereq: 314.

448 Fish and Wildlife Population Ecology (3 cr). Attributes, natality, mortality, growth forms, fluctuations, and regulation of fish and wildlife populations. Prereq: 307, course in vertebrate ecology.

449 Wildlife Techniques (2 cr). Investigation and mgmt. One 3-hr lab per wk; three days of field trips. Prereq or coreq: 314.

452 Range Communities (4 cr). Species ident, vegetational composition, physical characteristics, grazing reactions, and mgmt of plant communities in the major range regions. Two lec and two 2-hr labs per wk; two days of field trips. Prereq: general bot. Prereq or coreq: systematic bot.

453 Range Methods and Techniques (3 cr). Measuring and describing: (1) range vegetation, and (2) consumption and use of vegetation by animals. Two lec and one lab per wk; two days of field trips. Prereq: 307, 351.

454 Range Improvement and Mgmt Planning (3 cr). Objectives, methods, and benefits of range-improvement practices and their impact on mgmt; fundamentals of mgmt planning for use of rangeland resources. Two lec and one lab-disc per wk; one 1-wk field trip. Prereq: 351, 453.

455-456 Integrated Range Resource Mgmt (4 cr). Integration and appl of prin learned in previous courses to resource mgmt and mgmt planning. Four 2-hr labs per wk; 7-10 days of field trips. Prereq: 351 and 452 or perm; coreq: 383 and 453B for 455; 454 and 494B for 456.

462 Watershed Mgmt (2 cr). Hydrologic processes of forest and range lands; land mgmt practices as they influence surface runoff and erosion. Three days of field trips.

463 Watershed Analysis and Planning (3 cr). Procedures and tech for analyzing the impact of land mgmt practice on the hydrologic characteristics of forest catchments. Two lec and one 2-hr lab per wk. Prereq: 462 or perm.

464 Forest Pathology (3 cr). Pathology, symptomatology, and ident of causes of diseases and decays; disease control and prevention by means of silviculture, mgmt, and use. Two lec and one 3-hr lab per wk; occasional lab trip. Prereq: 300, 301, or perm.

WS465 Law of Evidence (3 cr). WSU Polic 465. Nature of evidence, principle court decisions concerning admissibility, and eval of evidence and proof.

467 Applied Forest Ent (3 cr). Influence of insects on forestry practices and on the forest ecosystem; ident, ecology, survey, and control of major forest insect pests. Two lec and one 2-hr lab per wk.

470 Intro to Forest Land Resources Planning (2 cr). Multiple-objective land-use planning concepts; current tech and methods applied to forest and range lands. Three days of field trips. Prereq: sr standing.

471 Forest Land Resources Planning Applications (2 cr). Dev of multiple-objective land-use plan and impact statement using computer-based analyt and mapping tech. Two 2-hr labs per wk. Prereq: course in computer programming and 470, or perm.

472 Remote Sensing of Environment (3 cr). Current systems, data acquistion on ground and from remote locations, instrumentation, imagery interp and analysis, appl for natural resources.

476 Forest Regulation and Finance (3 cr). Org and control of forest growing stock to meet mgmt objectives; appraisal of land, growing stock, stumpage, and damages; appl of simple and compound interest, capitalization and discount formulae for forest business. Two lec and one 2-hr lab per wk; eight days of field trips. Prereq: 324, 374.

484 Forest Policy and Admin (3 cr). Eval of land and forest problems and policies in the U.S.; analysis of current conditions and policies; historical dev of govt and private agencies concerned with the admin of forest conservation prog. Prereq: general econ.

486 Integrated Wildland Rec Planning (4 cr). Rec planning and analysis tech and philosophies appl to wildland rec settings; indiv and team projects and workshops. Two lec and two 2-hr labs per wk. Prereq: 386 or perm.

488 Interpretive Methods Lab (2 cr). Dev and appl of interpretive materials and tech; concentration on equipment and methods commonly used by natural resource agencies for communicating mgmt prog and interpreting natural environment to visitors. One 1-day field trip. Prereq: 487 or perm.

489 Personalities and Philosophies in Conservation (2 cr). Lives and thinking of people who have significantly influenced conservation practice or issues surrounding it.

490 Wilderness Mgmt (3 cr). Hist and legal aspects of the wilderness concept; conceptural and applied approaches, considering both ecological and sociological elements; recent research.

493 Environmental Law (2 cr). Laws governing resource admin and environmental impacts. Prereq: sr standing.

494 Models for Resource Decisions II (3 cr). Use of math models of resource systems to explore mgmt strategy; problem analysis; systems concepts and optimization of resource allocation. Prereq: 294, sr standing in the College of FWR or perm.

495 Fish and Wildlife Seminar (1 cr, max 2). Disc integrating biol, social, political, econ and philosphic aspects of fish and wildlife problems.

496 Forest Products Seminar (1 cr). Contemporary problems relevant to the manufacture of wood products.

497 Land Mgmt Seminar (1 cr), max 2). Assigned studies in wildland mgmt. Graded P/F. Prereq: sr standing in the College of FWR.

498 International Wildland Mgmt (1-3 cr, max 3). World approaches and problems in forest, wildlife, range, and fisheries mgmt. Prereq: sr standing and perm.

499 (s) **Directed Study** (cr arr). For the indiv student; conferences, library, field, or lab work. Areas of concentration normally offered are forest, range, wildlife, fishery, or watershed mgmt, and wood utilization technology. Prereq: sr standing in the College of FWR, GPA 2.5, and perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Major philosophical, mgmt, and research problems of wildlands; presentation of indiv studies on assigned topics. Prereq: perm.

502 (s) **Directed Study** (cr arr). Normally offered in forestry, range, wildlife, fishery, wood, and watershed sc. Prereq: perm.

ID503 (s) **Workshop** (cr arr). Selected topics in the conservation and mgmt of natural resources. Prereq: perm.

504 Fundamentals of Research (2 cr). Objectives and tech of research; historical dev of the scientific method; prep of working plans; assembly, interp, and presentation of data; structure and use of scientific lit; prep of manuscripts. Enrollment limited to fifteen.

505 (s) **Special Topics** (cr arr).

WS507 Statistical Ecology (3 cr). Alt/yrs 79-80. WSU Bio S 530. Theory associated with statistical methods as related to ecological problems. Prereq: course in biometry.

ID510 Adv Fishery Mgmt (3 cr). Alt/yrs 79-80. Compensation as a phenomenon basic to exploitation; yield in numbers and weight; models of yield; stock-recruitment functions; econ yield; appl of theory of physical and econ yield to empirical examples in commercial and sport exploitation. One 5-day field trip.

511 Fish Physiology (4 cr). Alt/yrs 79-80. Prin and methods used to study vital organs, organ systems, growth, and reproduction of fishes; emphasis on osmoregulation, metabolism, endocrinology, and respiration. Prereq: 411 and perm.

512 Aquatic Pollution Ecology (3 cr). Alt/yrs 78-79. Prin and working examples of the ecology of polluted aquatic stream and lake habitats. Two field trips. Prereq: 415 or perm.

513 Adv Fish Culture (3 cr). Alt/yrs 78-79. Prin underlying freshwater and marine fishes; emphasis on pond design, nutrition, bioenergetics, genetics, water quality interactions. Prereq: 411, 415, and perm.

514 Fish Population Dynamics (3 cr). Alt/yrs 78-79. Models and empirical examples of density changes, competition, and preda-

tion; mechanisms controlling density and biomass; social behavior; fish production; aquatic community processes.

515 Adv Limnology (3 cr). Alt/yrs 79-80. Physicochemical interrelationships and dynamics of primary and secondary production in aquatic systems. Two 4-hr lec-labs per wk. Prereq: 415.

516 Adv Fish Diseases (4 cr). Alt/yrs 78-79. Same as Bact 516. Epidemiology, treatment, and control of the principal viral, bacterial, parasitic, and noninfectious diseases of freshwater and marine fish; emphasis on salmonids. Prereq: 514, Bact 250 or equiv, and perm.

ID517 Fish Behavior (2 cr). Response of fishes to environmental stimuli. One lec and one scheduled and three unscheduled hrs of lab per wk. Prereq: ecology and biometrics.

521 Adv Forest Soils (3 cr). Same as Soils 521. Wildland soils, relation to vegetation; emphasis may be varied according to the specific interest of students. Two lec and one lab per wk; one or two 1-day field trips. Prereq: perm.

523 Forest Community Classification (3 cr). Field course in structure and ident of forest communities of northern Rockies. One 1-hr lec and one 1-day field lab per wk for half semester. Prereq: Bot 241 or equiv, a course in plant ecology, and perm. Enrollment limited to 10 students.

525 Adv Silviculture (3 cr). Silvicultural systems and cultural practices; design of silvicultural prescriptions. Term project, field labs, and two days of field trips. Prereq: 324 and/or perm.

526 Fire Mgmt and Ecology (3 cr). Cr will not be allowed in both FWR 426 and 526. Integrating fire-related biol, ecological, physical, and technological info for land mgrs; autecology and synecology of dominant species in wildland habitats; natural role of fire; fire as mgmt tool. Seven days of field trips. Prereq: 301, 367, or perm.

527 Forest Genetics (3 cr). Same as Genet 527. Appl of prin of genetics to the improvement of trees and silvicultural practices. Two lec and one lab per wk. Prereq: 324 and general gentics.

528 Forest Tree Improvement (3 cr). Same as Genet 528. Practical problems and tech related to genetic improvement of forest trees. Two days of field trips. Prereq: 324 and general genetics.

WS530 Microstructure and Properties of Wood (3 cr). WSU MSE 546. Effect of structure and composition of wood on its physical and mech properties.

531 Adv Wood Technology (2-3 cr). Anatomical features of wood, incl fibers; methods of preparing woody tissues for study; physical properties of wood and their implications on technology. Prereq: 331, 437.

WS532 Basic Prin of Adhesion (3 cr). WSU MSE 547. Prin of interfacial bonding applied in the engr of polymers, wood, and heterophase systems. Prereq: Met WS418.

WS533 Reinforced Polymer and Wood-Based Composites (3 cr). WSU MSE 548. Fundamentals of composite materials having polymers and wood as major components.

534 Adv Techniques of Timber Harvesting Analysis (3 cr). Layout, planning, and cost analysis of timber-harvesting systems using available computer analysis tech and prog; integration of tech in the total logging plan; practical projects and problems. Three 1-day field trips. Two lec and one 3-hr lab per wk. Prereq: 434 or equiv or perm.

WS535 Nondestructive Testing of Wood-Base Materials (3 cr). WSU MSE 549. Prin of nondestructive testing applied to wood-base materials.

536 Wood Chem (3-4 cr). Chem of woody tissues, incl lignin, cellulose, hemicelluloses, and other polysaccharides; lab work in the analysis and chem of wood. Prereq: 438.

WS537 Parameters for Synthesis of Wood Composition Materials (3 cr). WSU MSE 550. Theory and practice of wood composite materials manufacture and dev.

541 Adv Population Biol (2 cr). Alt/yrs 78-79. Readings and disc of current theories of population control, their biol basis, and appl to wildlife populations. Prereq: 442, ID544.

ID542 Waterfowl Mgmt (3 cr). Alt/yrs 79-80. Ecology and mgmt of species using wetland habitats. Lec-disc periods, field labs; three days of field trips. Prereq: ecology, population dynamics, and aquatic plants.

ID544 Game Mgmt (3 cr). Reading and disc on large mammal mgmt and ecology. One 3-hr lec per wk; three days of field trips. Prereq: 442, Zool 483.

545 Game Range Ecology (2 cr). Alt/yrs 79-80. Reading and disc on synecological relationships of wildlife habitats. Prereq: 442, perm, animal and plant ecology.

ID546 Upland Game Ecology (2 cr). Alt/yrs 78-79. Ecology and mgmt of forest and rangeland wildlife species. Three days of field trips. Prereq: perm.

ID551 Range Ecology: Concepts (3 cr). Alt/yrs 78-79. Ecological concepts of the nature, dynamics, and distribution of plant communities; secondary successional processes, soil-vegetation relations, and dev of vegetation-classification schemes for better land mgmt. Prereq: plant ecology and perm.

552 Range Ecology: Quantitative (2 cr). Alt/yrs 79-80. Quantitative treatment of ecological data to show species interaction, soil-vegetation relations, and classification and characterization of plant communities. Prereq: 307, ID551.

553 Range Forage Productivity and Mgmt (3 cr). Alt/yrs 78-79. Measurement of forage productivity and factors that influence production; eval of animal response under various mgmt systems. Prereq: animal nutrition, two courses in range mgmt incl range methods.

555 Current Issues in Range Resource Mgmt (1-3 cr, max 3). Alt/yrs. Investigation and disc of current issues in range resource and closely related fields.

WS560 Environmental Physiology (3 cr). WSU Zool 560. Physiological modes of adaptation of vertebrates to their temporal and physical environments. Two lec and one 3-hr lab per wk. Prereq: perm.

ID563-564 Adv Forestry Pathology (2-4 cr). Field methods, lab tech, and original lit used in study of tree diseases and rots, organisms that cause them, and deterioration of wood products; seminar in selected problems in forest pathology and their relations to forest practices. Prereq: 464.

565 Biometeorology (3 cr). Alt/yrs 79-80. Interactions of the atmosphere and plant-soil-water complex; physical laws governing energy and mass of selected plant communities; mountain-valley wind systems, radiation balance, evapotranspiration, and diffusing processes; related instrumentation. Two lec and one 2-hr lab per wk; one 2-day field trip. Prereq: one year physics (calculus desirable) or perm.

566 Activities of Tree-Inhabiting Organisms (2 cr). Alt/yrs 78-79. Environmental and biochem interactions of important bacteria, fungi, higher plants, and animals (excluding insects) associated with trees. Prereq: ID563 or 564, and one year of organic chem.

569 Adv Forest Entomology (3 cr). See Ent 569.

573 Adv Aerial Photo Interp (2-3 cr). Project planning; interp of vegetation, landforms, land use, disease and insect infestation, pollution, sequential changes, high-altitude-satellite imagery; mapping, photo-mensurational tech, multistage sampling, and special problems. One lec and one 2- or 4-hr lab per wk; two 1-day field trips. Prereq: 275 or equiv, or perm.

574 Adv Forest Mensuration (2 cr). Math and statistical prin and tech in determination of volume and growth of trees and stands; appl of sampling theory and correlation analysis. Prereq: 374 or equiv and course in statistical methods, preferably beyond the elem course.

575 Adv Forest Mgmt (2 cr). Forest regulation; recent dev in applied forest mgmt and important contributions in forest mgmt.

581-582 Adv Forest Econ (2 cr). Econ prin, legislation, and policies affecting forestry, particularly those bearing on the character and intensity of land use.

587 Adv Wildland Rec (2 cr). Problems, practices, and econ of the use of lands and waters for rec. Two days of field trips. Prereq: course in forest rec.

588 Visual Resource Analysis and Mgmt (3 cr). Visual resource inventory, analysis, computer modeling, and measurement tech,

in conjunction with theories of perception; assessing the visual environment and developing visual guidelines. Two lec and one 3-hr lab per wk. Prereq: 470 or 486 or LArch 459 or perm.

589 Water Resources Seminar (1 cr). See Inter 589.

WS590 Adv Topics in Zool (2 cr). WSU Zool 590. Recent advances in zool.

595 (s) Problems in World Resources (1-3 cr, max arr). Normally offered in forest, wildlife, fishery and grazing resources. Max 3 cr in any one field. Consult the time schedule for areas offered each semester. Prereq: 498 or equiv.

597 (s) Practicum (cr arr). Prereq: perm.

598 (s) Internship (cr arr). Prereq: perm.

599 (s) Research (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

General Studies—GenSt

Francis Seaman, Director (111 Admin. Bldg.). Faculty: Jeanette L. Driskell, Elinor L. Michel, Francis Seaman.

NOTE: See regulation J-5-e for the cr limitation on courses in this subject matter area.

101 Basic Numerical Skills (3 cr). Colleges, at their discretion, may permit students to count this course toward general elective cr only; may not be counted toward specific curricular requirements. Numbers, percentages, addition, subtraction, multiplication, and division; algebraic expressions; exponents; factoring; elem equations; stress on indiv needs. Five class sessions per wk. Sections limited to 25 students. Prereq: perm.

106 College Preparatory Reading/Writing (3 cr). Fundamentals of reading, paraphrasing, summarizing, and of writing essay-test answers; indiv help in remedying deficiencies in usage, spelling, and vocab. Five class sessions per wk.

112 Reading and Study Skills (1-2 cr, max 2). Strategies for college study, incl scheduling, intensive reading tech, note taking, test prep; intro to skimming and speed reading. Two class sessions per wk. Students who register for first half semester receive 1 cr; those who register for full semester receive 2 cr.

113 Reading Lab (1 cr, max 2). Supervised and indiv work in special reading problems, incl spelling, vocab, reading comprehension, or speed. Two hrs lab per wk. Graded P/F.

150 Developing Reading Speed and Versatility (1 cr). Tech and practice in various reading speed improvement skills, incl skimming, scanning, and previewing. Prereq: 112 or perm.

200; 400 (s) Seminar (cr arr). Prereq: perm.

203; 403 (s) Workshop (cr arr). Prereq: perm.

204; 404 (s) Special Topics (cr arr).

299; 499 (s) Directed Study (cr arr). Prereq: perm.

497 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

Genetics—Genet

Kenneth A. Laurence, Coordinator (115 Life Sc. Bldg.). Faculty: Ross E. Christian, O. Clifford Forbes, Al J. Lingg, Edmund E. Tylutki, Chi-Wu Wang.

106 Heredity and Man (2 cr). See Biol 150.

200; 400; 501 (s) Seminar (cr arr). Prereq: perm.

299; 499; 502 (s) Directed Study (cr arr). Prereq: perm.

307 Elem Forest Tree Improvement (2 cr). See FWR 327.

314 General Genetics (3 cr). See Biol 351.

315 Experimental Genetics (1 cr). See Biol 352.

421 Population Genetics (3 cr). See AnSc 422.

422 Animal Breeding (3 cr). See AnSc 421.

446 Plant Breeding (3 cr). See PlSc 446.

511 Genetics of Fungi (3 cr). See Bot ID558.

512 Microbial Genetics (2-4 cr). See Bact 512.

522 Statistical Genetics (3 cr). See AnSc 522.

527 Forest Genetics (3 cr). See FWR 527.

528 Forest Tree Improvement (3 cr). See FWR 528.

537 Physiological and Molecular Genetics (2-3 cr). See Biol 555.

Geography—Geog

Morton W. Scripter, Dept. Head (210 Mines Bldg.). Faculty: Harry H. Caldwell, Richard L. Day, Alan A. DeLucia, John F. Hultquist, Nancy B. Hultquist, O. Paul Matthews, Morton W. Scripter.

100 Man's Physical Environment (3 cr). Natural environment of man: nature, distribution, and relationships of climate, landforms, oceans, vegetation, hydrography, and soils.

101 Man's Physical Environment Lab (1 cr). Lab study relevant to Geog 100. One 2-hr lab per wk. Prereq or coreq: 100 or perm.

140 Econ Geog (3 cr). Reciprocal relationships between mankind and the earth environment, resource distribution, changing pattern of commodity movement and industrialization; effect upon national and international dev.

165 Human Geog (3 cr). Population growth, distribution, and movement; origin and dispersal of cultural traits; cultural processes (psychological, political, social, econ) responsible for the formation of culture regions; man's impact on the land and the environment's impact on man.

180-181-182 Spatial Graphics I, II, III (1 cr). Nontechnical; language of maps, aerial photography, and remote sensor imagery; understanding graphic symbol systems. Geog 180; earth as a sphere, globes and models, hist of maps and map-making, the round earth on flat paper. Geog 181: sources of primary (base) map data, basic topographic maps, geologic maps, and block diagrams, Geog 182: thematic special-purpose maps, space-age maps, and graphics, atlases, map intelligence. Two lec and one 1-hr lab per wk for 5 wks. These courses may be taken in any order.

200 (s) Seminar (cr arr). Prereq: perm.

203 (s) Workshop (cr arr). Prereq: perm.

204 (s) Special Topics (cr arr).

220 Environment and Population of the U.S. (3-4 cr). Geographic survey of recent trends in population, affluence, sc, and technology and their influence on the liveability of the environment in the U.S.; population, ecology, pollution, and resources; U.S. and international relationships with resources and environment. Registration for 4 cr requires an additional project.

250 World Regional Geog (3 cr). Countries, regions, and peoples of the world; interrelationships between man and his physical and cultural environments.

299 (s) Directed Study (cr arr). Prereq: perm.

315 Geomorphology (3 cr). See Geol 335.

316 Processes in Glacial and Periglacial Environments (3-6 cr). See Geol 336.

357 Europe (3-4 cr). Regional and systematic geog, exclusive of the Soviet Union; emphasis on contemporary problems. Registration for 4 cr requires an additional project.

360 Latin America (3-4 cr). Regional and systematic geog of the Americas south of the U.S.; emphasis on contempoary problems. Registration for 4 cr requires an additional project.

362 U.S. and Canada (3-4 cr). Regional and systematic geog; emphasis on contemporary problems. Two 1-day field trips. Registration for 4 cr requires an additional project.

364 Idaho and the Pacific Northwest (3-4 cr). Regional and

systematic geog of the Northwest; emphasis on Idaho and contemporary problems. One 2-day field trip. Registration for 4 cr requires an additional project.

370 Spatial Analysis (3 cr). Methodological need for analyses of spatial data; spatial stats; measurement of aggregation and concentration; description of areal distributions and gradients; regionalization tech, intro to computer appl for spatial data. Prereq: intro coursss in physical sc and social sc.

380 Cartography (4 cr). For the map-using professions (e.g., ag, engr, forestry, geosciences, planning). Map design and constr, maps as graphic comm devices, design and drafting processes for map creation and production. Two lec and 6 hrs of lab per wk.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Atmospheric Environment (3-4 cr). Weather, air masses, storms and associated phenomena, meteorological instruments, weather maps, forecasting; world's weather and climate types with emphasis on their effects on man. Registration for 4 cr requires an additional project. One 1-day field trip. Prereq: 100-101 or Geol 101-102, or perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

420 Land and Resource Regulation (3-4 cr). Legal aspects of land-use control and resource mgmt; methods of research in law libraries for planners and resource mgrs not trained as attorneys. Registration for 4 cr requires an additional project.

427 Decision-Making in Resource Mgmt (3-4 cr). Impact of ecosystem analysis and conflicts over environmental quality control on conservation theory; economic, political, managerial, perceptual, and scientific factors in shaping decisions for allocating natural resources. Registration for 4 cr requires an additional project.

430 Urban Geog (3-4 cr). Theory and models for the functions, origin, dev, structure, and distribution of cities; land-use classification; geographic aspects of city planning. One 1-day field trip. Registration for 4 cr requires an additional project.

C439 Comprehensive Urban Plan Dev (3 cr). For planning commission members, administrators, and elected officials. Relationship between urban process and environment and comprehensive urban plan dev; specific elements of most comprehensive plans as applied to situations and cases in one's home city or town.

446 Geog of Transportation (3-4 cr). Theoretical roles of transportation in spatial interaction; comparative advantages of air, water, motor vehicle, rail, and pipeline transport; world regional patterns of transportation. Registration for 4 cr requires an additional project.

447 Recreational Geog (3-4 cr). Dynamics of recreational uses of land and water, measurement and planning, interaction of local and regional approaches, econ impact studies. Registration for 4 cr requires an additional project.

455 Southwest, South, and Southeast Asia (3-4 cr). Regional and systematic geog from the Mediterranean to S.E. Asia; emphasis on contemporary affairs. Registration for 4 cr requires an additional project.

465 Political Geog (3-4 cr) (468). Conceptual approach to the manifestations of political activity at every org level; intro to basic ideas of politics, territory, and geographic environment. Registration for 4 cr requires an additional project.

470 Computer Mapping (3 cr). For the map-using professions (e.g., ag, engr, forestry, geosciences, planning). Line printer, coordinator plotter, and interactive video displays; tradeoffs between time, cost, precision, and graphic quality; types of maps represented; geographic base files and info systems; lab exercises with standardized computer-mapping prog. One lec, 2 hrs of lab, and 4 hrs computer run prep per wk. Prereq: Engr 131 recommended.

480 Adv Cartography and Remote Sensing (3 cr). State-of-the-art tech in the cartographic industry: scribing, process photography, printing and reproduction methods, computer cartography; remote sensing systems, imagery, and their appl in mapping and cartography. One lec and 6 hrs of lab per wk. One 2-day field trip. Prereq: 380 or perm.

490 Trends in Geog (3 cr). Alt/yrs. Current themes; geog as a professional field; employment as a geographer; nature of research; research proposal prep. Prereq: adv study in geog.

491 (s) **Field Techniques** (1-3 cr, max 6). Acquisition of data in the field; analysis, interp, and presentation of results of field investigations. May also be taken in conjunction with other geog courses. Prereq: perm.

492 Teaching in Geog (3 cr). See Ed 443.

493-494 Seminar in Urban Studies (2 cr). See Inter 493-494.

495 Public Planning Participation (1 cr, max 2). Attendance at public-planning meetings followed by written and classroom critiques. Travel to nearby communities reqd for some meetings.

497 (s) **Practicum** (1-6 cr, max 6). Practical, on-the-job experience in applied geog, usually in the Cartographic Lab; oral and written reports are presented in which the student reviews and constructively criticizes the experience gained. Prereq: perm.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

505 Applied Climatology (3 cr). Climatic classifications, microclimatic investigations, instrumentation; impact of climate on ag, vegetation, and econ activities.

516 Adv Field Glaciology (6 cr). See Geol 536.

520-521-522 Environmental Impact Assessment for the Urbanizing U.S.A. I, II, III (1-2 cr). Environmental impact assessment for urban and regional planning appl. Geog 520: the National Environmental Policy Act (NEPA) and environmental impact statements (EIS) applied to urban growth and dev, contents of EIS, review of selected EIS. Geog 521: legislation other than NEPA relating to pollution and detrimental land use arising from urban, suburban, and industrial activities. Geog 522: social impact of govt and corporate prog, incl prog for housing, urban renewal, interstate highway systems. Registration for 2 cr requires an additional project. Three lec per wk for 5 wks. One one-day field trip. These courses may be taken in any order.

525 Plant Geog (3 cr). See Bot 535.

526 Zoogeog (2 cr). See Zool 538.

529 Regional Land-Use Planning (3 cr). Alternative regional goals, plans, structures, laws, spatial options; comparison of various domestic and foreign approaches and experiences; constr of models and scenarios of alternative proposals. One 2-day field trip.

530 Urban Systems and Structure (3 cr). Reading and disc of lit of urban geog; indiv research. Two 1-day field trips. Prereq: 430 or perm.

570 Techniques of Regional and Urban Analysis (3 cr). Theory and tech for studying regional and urban phenomena from the spatial perspective; spatial structure; data and relationships among variables; projections and forecasts; models of econ activity, population, land use and transportation. Prereq: 370 or ApSt 307 or Bus 231 or Math 320 or Math 451-452.

580 Cartography Seminar (3 cr, max 6). Survey of cartography as a discipline and its major areas of specialization; lit of cartography; areas of applied and theoretical research; philosophy of maps. Prereq: 380 or perm.

ID585 Cartography for Planners (3 cr). Role of maps in the planning process; problems of the small planning agency with limited cartographic resources; prin and tech of large-scale map compilation from various source materials, incl aerial photographs; coordinate systems; multiple-use cartographic drafting, map duplication and reproduction processes, agency use of commercial firms for part or all of the map-making process. Two lec and one 3-hr lab per wk. One 1-day field trip.

595 Public Planning Participation (1 cr, max 2). Attendance at public-planning meetings followed by written and classroom critiques. Travel to nearby communities reqd for some meetings.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Practical, on-the-job experience with govt 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.

599 (s) **Research** (cr arr). Prereq: perm.

Geological Engineering—GeolE

George A. Williams, Head, Dept. of Geology (211 Mines Bldg.). Faculty: Terry R. Howard, Dale R. Ralston, Carleton N. Savage, Peter L. Siems, George A. Williams, Roy E. Williams.

200; 400; 501 (s) **Seminar** (cr arr). Prereq: perm.

203; 403; 503 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

299; 499; 502 (s) **Directed Study** (cr arr). Prereq: perm.

301 Field Geology and Report Writing (6 cr). See Geol 301.

409 Ground Water (3 cr). See Geol 409.

435 Intro to Geological Engr (3 cr). Appl of geology to engr problems; rock weathering; soil mechanics, fractures, landslide recognition; materials location; explosives; damsite and reservoir problems; earthquakes; route locations; requirements of a report for an egr project. Two lec and one 2-hr lab per wk; two 1-day field trips. Prereq: Geol 101-102, and Phys 113 or 220.

436 Geol Engr Design (3 cr). Appl of engr and geol prin to analysis and design in constr industries. One 1-day field trip. Prereq: 435.

475 Mineral Deposits (4 cr). Occurrence, classification, and origin of metallic and nonmetallic econ mineral deposits. Three lec and one 3-hr lab per wk; one 3-day field trip. Prereq: 265, 345.

476 Exploration Geology (3 cr). Same as Geol 476. Design of geol surveys and mineral exploration prog; integration and eval of geol, geochem, and geophysical exploration tech. Prereq or coreq: 475.

485 Geochem Exploration (3 cr). See Geol ID485.

490 Mineral Resource Wastes and Mine Hydrology (3 cr). See Geol 490.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

500 Master's Research and Thesis (cr arr).

535 Seepage and Earth Dams (3 cr). Same as CE 563. Prin of earth-dam design, failures, practical considerations in contr; prin governing the flow of water through soils. Prereq: perm.

536 Adv Geol Engr Design (3 cr). Alt/yrs. Design and constr of structures in rock, incl tunnels, large underground openings, and slopes. Prereq: perm.

537 Adv Topics in Geochem Engr (3 cr). Alt/yrs. Selected topics in geotechnical engr; emphasis on recent dev. Prereq: perm.

563 Geohydrology (3 cr). See Hydro 563.

578 Theory of Mineral Exploration (2 cr). Alt/yrs 79-80. Hist and dev of thought; statistical methods; appl of geol studies in search for mineral deposits.

589 Water Resources Seminar (1 cr). See Inter 589.

595 Geology-Oriented Environmental Problems (2 cr). See Geol 595.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Geology—Geol

George A. Williams, Dept. Head (211 Mines Bldg.). Faculty: John G. Bond, John H. Bush, William B. Hall, James H. Hardcastle, Terry R. Howard, Robert W. Jones, Charles R. Knowles, Maynard M. Miller, Dale R. Ralston, Rolland R. Reid, Carleton N. Savage, Peter L. Siems, Charles J. Smiley, George A. Williams, Roy E. Williams.

101 Physical Geol (3 cr). The earth, its composition, structure, and natural processes. Concurrent enrollment in 102 recommended. One 1-day field trip.

102 Physical Geol Lab (1 cr). Lab study relevent to 101. Coreq: 101.

106 Historical Geol (3 cr). Evolution of the physical earth, plants, and animals; tech used in interp of geologic hist. Concurrent enrollment in 107 recommended. One 1-day field trip.

107 Historical Geol Lab (1 cr). Lab study relevant to 106. Coreq: 106.

X123 Geol of Idaho and the Pacific Northwest (3 cr). Geologic hist; dev of geologic structures and present-day distribution of rocks and mineral deposits; geol of area in which the course is given.

X150 Applied Geol (3 cr). Prospecting, mineral property dev, water well location, food control, foundation and excavation problems; laws affecting mineral resource exploration and dev. Prereq: perm.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

211 Ancient Life (4 cr). Life in the different geologic periods; evolutionary dev of organisms; lab study of fossils. Three lec and one 2-hr lab per wk; one 1-day field trip.

255 Mineralogy (2 cr). Crystallography and mineralogy; properties, occurrence, uses, ident, and classification of rock-forming and ore minerals. One lec and one 2-hr lab per wk. Prereq or coreq: 101, 102; high school chem or one semester of college chem is recommended.

265 Lithology (2 cr). Hand specimen ident of igneous, sedimentary, and metamorphic rocks. One lec and one 2-hr lab per wk; two 1-day field trips. Prereq: 101, 102.

299 (s) **Directed Study** (cr arr). Prereq: perm.

301 Field Geol and Report Writing (6 cr). Same as GeolE 301. Field problems and methods; use of instruments; interp of field data; prep of reports based on field observations and interps. Three field trips. Accident and health insurance required. Prereq: 345 or perm.

315 Invertebrate Paleontology (3 cr). Morphology, evolutionary trends, and classification of invertebrate fossil groups. Two lec and one 3-hr lab per wk; one 2-day field trip. Prereq: 101-102, or 106-107, or perm.

335 Geomorphology (3 cr). Same as Geol 315. Classification, recognition, origin, and significance of land forms; land form analysis in interp of geologic structure and hist. One 2-day field trip. Prereq: 101-102 or 106-107 or Geol 100-101 or perm.

336 Processes in Glacial and Periglacial Environments (3-6 cr). Same as Geol 316. Quantitative treatment using examples from regions of existing glaciers and permafrost. Two lec and one 3-hr lab per wk or (for 6 cr) 6-wk intensive field session in Alaska and Canada.

345 Structural Geol (1-3 cr). Deformed rocks; mechanics of failure, recognition, description, classification, and genesis of folded and fractured rocks. Two lec and one 2-hr lab per wk; one 2-day field trip. Prereq: 101, 102.

365 Igneous and Metamorphic Rocks (3 cr). Petrology. Two lec and one 2-hr lab per wk; two 1-day or one 2-day field trip. Prereq: 255, 265, and Chem 112 or 114.

400 (s) **Seminar** (cr arr). Prereq: perm.

405 Earth Science (4 cr). For earth sc teaching majors and minors. Earth and its place in the solar system, processes responsible for changes. Three lec and one 2-hr lab per wk; two 1-day field trips. Prereq: 101, 102, or Geol 100-101, or equiv.

409 Ground Water (3 cr). Same as GeolE 409. Occurrence, movement, and properties of subsurface water; intro to ground-water geol and hydrology. Two lec and one 2-hr lab per wk; one 1-day field trip. Prereq: 101, 102, and Math 111 or 140.

417 Adv 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 per wk; one 1-day field trip. Prereq: 315 or perm.

425 Sedimentology (2 cr). Environments and processes responsible for separation of clastic and nonclastic sedimentary rock materials; roles of transportation, deposition, incl siltation and lithification. Two 2-hr labs per wk; one 1-day field trip. Prereq: 265.

426 Stratigraphy (3 cr). Description, classification, distribution, and correlation of layered rocks; significance of stratigraphic analysis and geologic hist. Two lec and one 2-hr lab per wk; one 2-day field trip. Prereq: 425.

449 Geol of Industrial Rocks and Minerals (2 cr). Classification, occurrence, origin, prep, extraction, use, and econ of chiefly nonmetallic rocks and minerals of major importance to industry. Prereq: 265.

465 Optical Mineralogy (3 cr). Optical crystallography; ident of minerals by optical means. One lec and two 2-hr labs per wk. Prereq: 255.

467 Petrography (3 cr). Description and classification of rocks by thin-section study. One lec and two 2-hr labs per wk. Prereq: 365, 465.

476 Exploration Geol (3 cr). See GeolE 476.

ID485 Geochem Exploration (3 cr). Same as GeolE 485. Prin of geochem tech in prospecting for mineral deposits; design, execution, and interp of geochem surveys. Two lec and one 3-hr lab per wk; two 1-day field trips. Prereq: Chem 112.

ID486 Prin of Geochem (3 cr). Alt/yrs 78-79. Chem concepts applied to geol and environmental problems. Prereq: 255, Chem 112.

490 Mineral Resource Wastes and Mine Hydrology (3 cr). Same as GeolE 490. Treatment of mineral resource waste production and mgmt; interaction of wastes and water after disposal in the environment under existing legal constraints.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

ID515 Paleocology (3 cr). Alt/yrs 78-79. Same as Anthr ID573. Past environments; interrelations of physical and biol factors; changes in the physical environments of the past; their influence on distribution and evolution of organisms, incl man.

ID516 Methods in Paleontology and Biostratigraphy (3 cr). Methods of collection, prep, illustration of paleontologic data; prin of systematic paleontology; statistical-graphic presentation of biostratigraphic and paleontologic info. One lec and two 2-hr labs per wk; one 5-day field trip.

WS520 Regional Stratigraphic Analysis (3 cr). Alt/yrs 78-79. One lec and two 3-hr labs per wk. Prereq: course in stratigraphy.

525 Stratigraphic Paleobotany (3 cr). Alt/yrs 79-80. Fossil floras and floral successions; taxonomic problems; geologic ranges and past distributions of plant taxa; paleoecological interp; methods and correlation and dating by fossil plants. One 1-day and one 2-day field trips.

526 Petrology of the Carbonate Rocks (3 cr). Origin, classification, distribution, depositional environments, and diagenesis of modern and ancient carbonates; emphasis on petrographic analysis. Two lec and one 3-hr lab per wk; one 3-day field trip.

527 Petrology of Terrigneous Rocks (3 cr). Origin, classification, depositional environments, and diagenesis of fragmental rocks, incl low-rank metasedimentary rocks; emphasis on petrographic analysis. Two lec and one 3-hr lab per wk; one 3-day field trip.

536 Adv Field Glaciology (6 cr). Same as Geog 516. Adv 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.

546 Tectonics (3 cr). Alt/yrs 78-79. Form, pattern, and evolution of large-scale units of the earth's crust.

WS550 Adv Mineralogy (3 cr). Elements of crystal chem and crystal physics. Prereq: 101, 102, and Chem 111.

WS551 Ore Microscopy (3 cr). Alt/yrs 79-80. Ident of ore minerals using polarizing ore microscope; measurement of rotation properties; interp of ore textures; photomicrography; practical problems. Three 3-hr labs per wk. Prereq: 255, GeolE 475.

WS552 X-Ray Analysis in Geol (3 cr). Internal symmetry of crystals; generation and use of x-rays in geol research; powder diffraction and X.R.F. spectrometry.

ID556 Electron Microprobe (3 cr). Theory and appl of the electron microprobe and scanning electron microscope in studying rock-forming minerals. Two lec and one 3-hr lab per wk. Enrollment limited to seven. Prereq: perm.

WS560 Adv Igneous Petrology (3 cr). Petrogenesis of igneous rocks. Two lec and one 3-hr lab per wk. Prereq: 465.

ID565 Metamorphism (3 cr). Metamorphic minerals, rocks, processes, and facies; polymetamorphic rocks; recent dev in structural geometry. Two lec and one 3-hr lab per wk; one 2-day field trip. Prereq: 465.

566 Volcanic Geol (3 cr). Alt/yrs 79-80. Volcanoes, volcanic activity, petrology of volcanic rocks, and regional problems in layered volcanic rocks. Two lec and one 2-hr lab per wk; one 3½-day and three 1-day field trips. Prereq: 465.

WS570 Metallic Mineral Deposits (3 cr). Modern advances in the genesis of metallic mineral deposits of magmatic, hydrothermal, sedimentary, and metamorphic origin. Prereq: GeolE 475.

ID575 Adv Mineral Deposits I (3 cr). Alt/yrs 78-79. Ore mineralogy and fabric; sulfide phase equilibria.

ID576 Adv Mineral Deposits I Lab (1 cr). Alt/yrs 78-79. Ident of ore minerals; their textures, association, and paragenesis.

577 Adv Mineral Deposits II (3 cr). Alt/yrs 78-79. Modern concepts of the origin and geochem of metallic mineral deposits. Two lec and one 3-hr lab per wk; one 3-day field trip.

WS581 Mineral Equilibrium (3 cr). Prin and petrologic significance of phase equilibria in mineral systems. Prereq: course in metamorphic petrology.

WS583 Intro Geochem (3 cr). Alt/yrs 79-80. WSU 480. Chem of earth materials and processes. Prereq: Chem 111.

ID586 Adv Geochem Exploration (3 cr). Alt/yrs 79-80. Theory and use of colorimetric and instrumental analyt methods in mineral exploration; primary and secondary despersion patterns; endogenetic and exogenetic behavior of indiv elements. Two lec and one 3-hr lab per wk. Prereq: ID485.

587 Instrumental Techniques in Geochem (3 cr). Modern instrumentation, incl x-ray fluorescence, gas chromatography, electron microprobe, atomic absorption, infrared and Mossbauer spectrometry applied to geochem problems. Two lec and one 3-hr lab per wk. Prereq: perm.

589 Water Resources Seminar (1 cr). See Inter 589.

ID590 Photogeol (3 cr). Manipulation and analysis of air photos for geologic info; photogrammetry; map prep and interp of stereo vertical and oblique air photos, some in color. One lec and two 3-hr labs per wk. Prereq: 335, 345, or perm.

WS592 Interdisciplinary Research Topics in Geol (3 cr, max 6).

Adv topics across normal subject boundaries; geochem of ore deposits, tectonics and magma origin.

WS593 Adv Topics in Petrology (3 cr, max 6). Either ore petrology or igneous petrology.

595 Geol-Oriented Environmental Problems (2 cr). Same as GeolE 595. Directed reading and disc of environmental problems related to natural geologic phenomena or artificial disruption of natural geologic conditions. Prereq: perm.

596 Adv Photogeol (3 cr). New research tech; use of special photographic and remote sensor imagery, such as color, infrared color, and multispectral scanner imagery, incl satellite photos. One lec and two 3-hr labs per wk. Prereq: ID590 or perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Guidance and Counseling—Guid

Thomas O. Bell, Director, Div. of Teacher Education (301 Educ. Bldg.). Faculty: Thomas N. Fairchild, A. Jean Hill, Thomas E. Hipple, Harold W. James (Chairman), Donald J. Kees, O. E. Kjos, James D. Morris, Marilyn K. Murray, Brent M. Snow.

200; 400; 501 (s) **Seminar** (cr arr). Prereq:perm.

203; 403; 503 (s) **Workshop** (cr arr). Prereq: perm.

204; 404; 504 (s) **Special Topics** (cr arr).

299; 499; 502 (s) **Directed Study** (cr arr). Prereq: perm.

322 Voc Guid (3 cr). Same as VocEd 322. Ident of individuals who can profit from vo-tech ed prog; info for realistic voc and ed planning; adjustments in voc-ed prog; occupational placement and adjustment; follow-up procedures.

420 Prin and Practices in Guid (3 cr). Nature of the guid process and the services provided in pupil personnel work.

460 Occupational-Ed Info (3 cr). Sources, dissemination, and uses of voc and ed info. Two 1-day field trips.

500 Master's Research and Thesis (cr arr).

520 Group Standardized Tests (3 cr). Theories and group tech of appraising indiv characteristics, performance, and behavior; eval of group tests; collection and interp of data. Prereq: Psych 217 or perm.

523 Guid Lab (2 cr). Supervised school experience and simulation in cumulative records and reports, info, placement, and follow-up. Prereq: 420, 460.

525 Techniques of Counseling (3 cr). Dev of basic counseling tech; case studies, role playing, tape and video recordings.

527 Psychometric Assessments (3 cr). Developmental assessment procedures used by counselors in various settings. Prereq: 520, 525.

560 Theories of Voc Choice (3 cr). Sociological, psych, and econ foundation of voc choice and adjustment. Prereq: 460 and perm.

561 Org and Admin of Guid Services (3 cr). Simulated planning, primarily for those who will be responsible for the guid services in public school systems. Prereq: perm.

564 Group Counseling (3 cr). Prin and tech of counseling groups; didactic and lab learning experience. Prereq: 597 or perm.

565 Theories of Counseling (3 cr). Consideration and eval of contemporary theories. Prereq: 525 and perm.

597 (s) **Practicum** (cr arr). Initial practicums provide a minimum of 30 hrs of supervised experience in indiv counseling in school (elem, jr-high, secondary, vo-tech, community college, college) or in a public agency. Adv practicums incl indiv and group counseling procedures, field experience in a variety of settings, and a minimum of 30 hrs of supervised experience. Prereq: 525 and perm. Prereq for adv practicums: 564 plus 3 cr in initial practicum and perm.

598 (s) **Internship** (cr arr). For adv grad students. Currently offered in counselor ed, college student personnel services, school pupil personnel services, and school psych. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (3 cr).

Health and Safety—H&S

Leon G. Green, Director, Div. of Health, Physical Education and Recreation (203 Mem. Gym). Faculty: Charles A. Cole, Dwaine J. Marten (Chairman), Hazel C. Peterson, Diane B. Walker.

150 Foundations of Health Science (3 cr). Maintaining health; indiv and public health.

200; 400; 501 (s) **Seminar** (cr arr). Prereq: perm.

203; 403; 503 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

244 Lifesaving (1 cr) (PE 244). Students passing the Red Cross tests receive adv swimming and lifesaving certificates. Two hrs per wk. Prereq: 138 or perm.

245 Intro to Athletic Injuries (3 cr). Special course fee applies. Athletic training; recognition, eval, general care of athletic injuries; adhesive strapping. Two lec and one lab per wk.

266 Aquatic Instructor's Course (2 cr) (PE 266). Methods. Students passing Red Cross tests will receive instructor's certificates. Three hrs per wk. Prereq: senior lifesaving and 18 yrs old.

288 First Aid (2 cr). Emergency care of injuries resulting from accidents or illness; adv Red Cross first aid card given.

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.

299; 499; 502 (s) **Directed Study** (cr arr). Prereq: perm.

316 Elem School Health Materials (2 cr). For elem classroom teachers.

349 Adv Athletic Injuries (3 cr). Special fee course. Etiologic symptoms of sports-related injuries; diagnostic emphasis given to specific injuries of the extremities. Two lec and one lab per wk. Prereq: 245 or perm.

423 Health Ed Methods (3 cr). Special methods and materials for jr and sr high school levels.

440 Driver Ed I (3 cr). Special fee course. Methods, org, and admin tech; dev of habits, attitudes, knowledge, and skills. In addition to lec, 6-10 hrs of practicum required during semester. Prereq: valid driver's license and perm.

449 Driver Ed II (3 cr). Continuation of 440. Adv prep in prin and practice of driver and traffic safety ed for teachers, supervisors, and administrators; emphasis on new and broader teaching competencies in traffic safety. Lab work and safety projects required. Prereq: 440, valid driver's license, satisfactory driving record, and perm.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

592 The School Health Prog (3 cr). For teachers and administrators. Well-balanced health prog; org and admin; health services, healthful school living, and health instruction.

History—Hist

William S. Greever, Dept Head (315 Admin. Bldg.). Faculty: Donald C. Baldridge, Willard Barnes, Robert Coonrod, William S. Greever, W. Kent Hackmann, Robert D. Harris, Raymond L. Proctor, Siegfried B. Rolland, Fred H. Winkler.

PREREQUISITE: Two-semester courses in this field may be taken in either order. Student may enroll in second-semester courses without having had the first. Ordinarily six lower-div cr in history are required for registration in upper-div courses; exceptions by perm.

101-102 Hist of Civ (3 cr) (C). Contributions to the modern world. Hist 101: to 1650. Hist 102: 1650 to present.

111-112 Intro to U.S. Hist (3 cr) (C). Political, diplomatic, econ, social, and cultural hist; earliest times to the present. Hist 111: to 1877. Hist 112: 1877 to present.

180 Intro to East Asian Hist (3 cr). Survey of traditional and modern Chinese and Japanese hist.

271-272 Hist of England (3 cr) (C). Political, social, econ, and religious dev of the British Isles. Hist 271: to 1714. Hist 272: 1714 to present.

404 (s) **Special Topics** (cr arr).

411-412 American Colonial and Revolutionary Hist to 1780 (3 cr). Hist 411: foundations. Hist 412: through framing and adoption of the Constitution.

413 U.S.: Early National Period (3 cr). Econ, political, constitutional, and social problems; 1789 to 1828.

414 U.S.: Sectionalism and Civil War (3 cr). Jacksonian democracy, slavery, and Civil War; 1828 to 1865.

415 U.S.: Emergence of Industrial America (3 cr). Reconstruction era, industrial dev, and resulting problems; 1865 to 1895.

417-418 Twentieth-Century America (3 cr). Hist 417: 1896 to 1929. Hist 418: 1929 to present.

423 Health Ed Methods (3 cr). Special methods and materials for jr and sr high school levels.

427-428 Hist of the Westward Movement (3 cr). Hist 427: frontier U.S. east of the Mississippi River. Hist 428: west of the Mississippi River.

429-430 Hist of American Diplomacy (3 cr). Hist 429: diplomatic independence and world power, 1783 to 1921. Hist 430: since 1921.

432 The Negro in American Hist (3 cr). Same as AfrAm 432. Slavery, abolition movement, emergence of the Negro as a significant element in U.S. life.

433-434 Social and Cultural Hist of the U.S. (3 cr). U.S. customs, traditions, and intellectual habits. Hist 433: to 1865. Hist 434: 1865 to 1950.

435 Colonial Latin America (3 cr). Indian civ, European colonization, Spanish Imperial System, wars of independence.

438 Mexico Since Independence, Central America, and the Caribbean (3 cr). Political, econ, social, and cultural dev; search for stability; growth of nationalism.

439 National Latin America: The South American Republics (3 cr). Political, econ, social, and cultural dev; search for stability; growth of nationalism.

440 Inter-American Relations (3 cr). Diplomatic relations between American republics.

441-442 Greek and Roman Hist (3 cr). Hist 441: Greece, to Roman conquest. Hist 442: Rome, to the end of the Western Empire.

446 Medieval Europe (3 cr). Transition from classical Mediterranean civ to medieval civ, 400-1350 A.D.

447 Renaissance Europe (3 cr). Europe in the later middle ages and Renaissance, 1350 to 1520 A.D.

448 Reformation Europe (3 cr). Protestant and Catholic Reformation in the 16th century and the wars of religion to 1648.

449 Early Modern Europe (3 cr). European politics and society in the 17th and 18th centuries.

451 The French Revolution (3 cr). Europe in the era of the French Revolution and Napoleon, 1789 to 1815.

452 Europe from Vienna to Versailles (3 cr). Revolution and reform of the 19th century; international frictions culminating in irredentist and imperialist rivalries of WWI.

455-456 Recent Times (3 cr). Europe and its impact on worldwide events. Hist 455: 1914 to 1939. Hist 456: since 1939.

457 Hist of the Middle East (3 cr). Survey of the Middle East from the beginning of the Islamic period to the present.

464 European Diplomatic Hist, 1500-1914 (3 cr). Dev of the state system; struggle for control over central Europe; Near-Eastern question; diplomacy of imperialism; diplomatic background of WWI.

465-466 Social and Cultural Hist of Europe (3 cr). Hist 465: 17th and 18th centuries. Hist 466: 19th and 20th centuries.

467-468 Hist of Russia (3 cr). Hist 467: Russian Empire to 1894. Hist 468: 1894 to present.

469 Modern France (3 cr). French nation from 1815 through the De Gaulle era.

473 Tudor England (3 cr). Royal prerogative; rise of middle class; exploration and colonization; culture.

474 Stuart England (3 cr). Royal prerogative; rise of middle class; exploration and colonization; culture.

477 Georgian Britain, 1714-1830 (3 cr). Rule of the oligarchy; the Empire; wars; industrialization; parliamentary reform.

481 Japan, 1600-1890 (3 cr). Tokugawa institutions and thought; confrontation with West. Maiji Restoration; beginning of modernization.

482 Japan Since 1890 (3 cr). Rise as a world power; industrialization and urbanization; political and constitutional dev; militarism and totalitarianism; WW II; occupation and postoccupation periods.

483 China, 1800-1911 (3 cr). Foreign incursions; rebellions, reform, revolution, and resistance to change.

484 China Since 1911 (3 cr). Republican experiment and its failure; econ problems; international relations; rise and victory of the Chinese Communist Party.

496 Theory and Practice of Hist (3 cr). Survey of the hist of historical writing; validity of hist as a form of knowledge; methods of historical inquiry, incl recent quantitative approaches.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Normally offered in hist of early modern Europe, late modern Europe, England, U.S., and the U.S. west. Prereq: perm.

502 (s) **Directed Study** (cr arr). Normally offered in U.S. foreign relations, U.S. frontier, society and thought in the U.S., Northwest, U.S. before 1789, Negro in the U.S., U.S.-Latin American relations, early modern England, Greek and Roman hist, Middle Ages, Renaissance and Reformation, Age of Absolutism and the Revolutionary Era, 19th-century Europe, 20th-century Europe, evolution of Russia, evolution of France, society and thought in Europe, European foreign relations, hispanic America, modern Mexico, U.S. 1789 to 1828, U.S. 1828 to 1865, U.S. 1865 to 1895, U.S. since 1896, England and the Georgian Era. Prereq: perm.

504 (s) **Special Topics** (cr arr).

590 Intro to Historical Research (2 cr). Tech in compiling a bibliography, assembling material, composition, interp, and historical criticism.

591-592 Historiography (2 cr). Nature of hist; major historians; Ideas in hist; philosophy of hist; bibliography. Hist 591: U.S. historians. Hist 592: European and British historians.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Home Economics—HEc

Gretchen L. Potter, Acting Director, School of Home Economics (108 Mary Hall Niccolls Home Ec. Bldg.). Faculty: Gladys I. Bellinger, Marie K. Carano, Kathleen H. Covert, Rose L. Forbes, Arlene T. Jonas, Joann C. Jones, Elizabeth M. Kessel, Shirley O. Kiehn, Shirley R. Medsker, Laura J. Miller, Shirley A. Newcomb, Leila S. Old, Gretchen L. Potter, Ruth W. Spidahl, Nancy J. Wanamaker.

Note: Courses numbered 371, 372, 376, 385, 472, 473, 486, and 488 are taught at Eastern Washington State College, Cheney. EWSC is on the quarter system; however, credits are listed in this catalog in equivalent semester hours.

109 Intro to Home Ec (1 cr). Home ec careers, professional contributors, and lit. Required of undergraduate majors. Graded P/F.

113 Art (3 cr). Art and crafts for home and community. One lec and two 3-hr labs per wk.

123 Textiles (3 cr). Properties of fibers, yarns, and fabric structure, dyes and finishes, labeling, and legislation affecting the consumer.

124 Clothing (3 cr). Prin of clothing constr and fitting; analysis and comparison related to efficiency, wear, appearance, fabric limitations. One lec and six hrs of lab per wk.

170 Family Nutrition and Meal Mgmt (2 cr). Primarily for nonmajors. Basics. One lec and one 3-hr lab per wk.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

229 Clothing Analysis (2 cr). Factors affecting the selection of adult clothing; means of expressing individuality in the wardrobe.

234 Intro to Child Dev (3 cr). Dev and guid of children, health and basic needs; infancy; community prog; analysis of preschool observations; review of lit. Two lec and one 2-hr lab per wk.

242 Household Equipment (3 cr). Selection, use, and care. Two lec and one 3-hr lab per wk.

270 Nutrition (3 cr). Open to nonmajors. Food selection and the daily diet; variations from the normal diet; metabolism and dietary treatment; obestiy, malnutrition, overnutrition, food fads, food additives, and nutrition for athletes.

271 Foods (3 cr). Prin and nature of ingredients in food prep. Two lec and one 3-hr lab per wk. Prereq: 3-6 cr in physical sc courses.

272 Food Mgmt (2 (cr). Food preservation, marketing, table service, meal planning, and prep tech. One lec and one 3-hr lab per wk. Prereq: 271.

299 (s) **Directed Study** (cr arr). Prereq: perm.

314 Weaving (3 cr). Prin, tech, and aesthetics of handweaving. One lec and six hrs of lab per wk.

324 Flat Pattern Study (3 cr). Fitting and pattern alteration for indiv shell and sloper; flat pattern design; constr related to original patterns. One lec and six hrs of lab per wk. Prereq: 124 or perm.

326 Housing and Home Furnishings (3 cr). Housing prin, furniture, materials, and color. Two lec and three hrs of lab per wk; one field trip.

327 Tailoring (3 cr). Textile selection, tailoring tech. One lec and six hrs of lab per wk. Prereq: 124 or perm.

329 Hist of Costume and Textiles (3 cr). Costume as an expression of the times. Prereq: 229 or perm.

334 Child Dev (3 cr) (C). Prin of dev. Two lec and one 3-hr nursery school lab per wk. Prereq: Psych 100, Soc 110, or perm.

340 Family Relations (3 cr) (C). Interpersonal relationships throughout the family life. Prereq: Psych 100, Soc 110, or perm.

346 Family Resource Mgmt (3 cr). Analysis of resources in meeting family goals; time mgmt, work simplification, family and personal financial mgmt; emphasis on decision making and eval of family processes.

347 Home Mgmt House Residence (3 cr). Mgmt; relationships and decision-making. Residence 4-8 wks. Adv reservation with dept required. Prereq: 272 and perm of dept; prereq or coreq: 346.

349 Home Mgmt for Married Students (3 cr). Comparable to 347 for homemakers or students with special dietary or other problems. Prereq: 272; prereq or coreq: 346.

352 Methods in Teaching Home Ec (3 cr). Tech and materials; lesson plan dev. Field trip. Prereq: developmental or ed psych, VocEd 351, or perm.

370 Nutrition for the Elem School (2 cr). Primarily for elem school teachers and student teachers. Fundamentals of nutrition and methods of teaching nutrition in elem grades.

371 Diet Therapy (4 cr; see headnote). Diet modification for adult and child needs in disease and convalescence. Clinical experience in Spokane hospitals. Prereq: 375, jr standing in CCUPD.

372 Clinical Dietetics I (4.6 cr; see headnote). Clinical experience in Spokane hospitals. Prereq: jr standing in CCUPD.

375 Intro to Clinical Dietetics (3 cr). Dietetics, role of the dietitian; dietary depts in health care facilities. Two lec and three hrs of clinical experience per wk; one field trip to Spokane. Prereq: jr standing in CCUPD.

376 Adv Nutrition (3.3 cr; see headnote). Prin of nutrition; physiology of digestion, absorption and metabolism of nutrients. Prereq: 270, jr standing in CCUPD.

384 Food Admin I (6 cr). Quantity food production, buying, and equipment; intro to admin. Lab in UI food service. Three lec and nine hrs of lab per wk. Prereq: jr standing in CCUPD.

385 Food Admin II (5.3 cr; see headnote). EWSC 386. Continuation of 384. Lab in Spokane hospitals and EWSC food service. Prereq: 384.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

409 Trends and Perspectives in Home Ec (1 cr). Lit, issues, and trends. Required of undergraduate majors.

413 Textile Design (2 cr). Design hist and fabric production, applied textile design. One lec and one 3-hr lab per wk. Prereq: 113 or perm.

423 Adv Textiles (3 cr). Textile performance and problems involving recent dev in textile products. Two lec and one 3-hr lab per wk; one field trip. Prereq: 123.

424 Original Design (3 cr). Design, rendering, and constr of apparel. One lec and 6 hrs of lab per wk. Prereq: 324 or perm.

426 Hist of Interiors and Furnishings (3 cr). Hist and dev of styles and design in furniture and interiors as expressions of changes in art and culture. Prereq: 326 or perm.

428 Family Housing (2 cr). Family life cycles, socioecon aspects, site selection, floor plans, building materials, and outside environment. One lec and 3 hrs of lab per wk.

429 Social-Psychological Aspects of Clothing (2 cr). Clothing in relation to culture, human behavior, aesthetics, the economy, and the physical self. Prereq: Psych 100, Soc 110, or perm.

433 Preschool Curriculum (3 cr). Prin of curriculum design incorporating the following areas; language and creative arts, science, food prep, music, and movement. Two lec and one 3-hr lab per wk.

434 Preschool Participation (6-9 cr, max 9). Participation in preschool lab appl of child dev theory, direction and prep of preschool curriculum. Prereq: 433 or perm.

435 Hist and Philosophy of Child Dev (2 cr). One field trip. Prereq: 234 or 334, or Soc 110 and Psych 100.

436 Current Theories in Child Dev (3-4 cr). Ed, psych, and sociological theories of child dev.

442 Current Dev in Household Equipment (2 cr). Available space and selection of functional equipment; materials, constr, operation, care, and relative cost. Prereq: 242.

448 Consumer Ed (3 cr). Consumer motivation, decision-making, and behavior; protection, org, use of credit.

455 Challenges of Teaching Home Ec (3 cr). Nature and scope of teacher's role; analysis, org, implementation, and eval of consumer/homemaking programs. One 1-day field trip. Prereq: 352.

456 Curriculum in H.E.R.O. (3 cr). Direction and prep of curriculum for training in home-ec-related occupations. One 1-day field trip.

457 Student Teaching in Home Ec Classes (9 cr, max 9). Supervised teaching at secondary-school level. Apply to home econ teacher educator one semester before registration. Prereq: 352; cum GPA of 2.25; HEc GPA of 2.50; acceptance into teacher ed prog; sr standing.

458 Cooperative Extension Practicum (9 cr). Observation, participation, and supervised teaching experience with extension home economist in a selected county. Prereq: cum GPA of 2.25; HEc GPA of 2.50; jr or sr standing; perm.

460 Family as an Ecosystem (3 cr). Survey of the lit and disc of environmental factors affecting contemporary families; analysis of the interrelationship of social change, and family values, structure, roles on the ecological system; determination of the role and potential contribution of family life to ecology.

470 Problems in Nutrition (3 cr) (C). Recent advances; infant, child, and adult nutrition. Prereq: 270, Zool 119, sr or grad standing.

472 Clinical Dietetics II (5.3 cr; see headnote). Continutation of 372. Practical experience in Spokane hospitals. Prereq: 372, sr standing in CCUPD.

473 Community Nutrition (3.3 cr; see headnote). EWSC 469. Nutrition prog; nutrition problems of special groups. Clinical experience in Spokane school lunch prog, public health, etc. Prereq: sr standing in CCUPD.

474 Investigation of Foods (3 cr). Adv problems in foods. Two lec and 3 hrs of lab per wk. Prereq: 272 or perm.

475 Nutrition Prin for the Classroom Teacher (3 cr). For elem and secondary school teachers. Teaching food selection and daily diet; variations from the normal diet; malnutrition, overnutrition, food fads, additives, obestiy, and nutrition for athletes.

478 Recent Advances in Foods (2 cr). Food preservation and processing; dev of low-calorie foods and commercial mixes, food additives. Prereq: 271 or equiv.

484 Food Systems Mgmt I (4 cr). Institutional org and mgmt. Lab experience in UI food service. Four lec and 12 hrs of lab per wk for nine wks. Prereq: 385, sr standing in CCUPD.

486 Infant and Child Nutrition (2.6 cr; see headnote). EWSC 470. Nutritional needs and dietary patterns from infancy through adolescence. Lab in school lunch, hospital, and other child nutrition prog. Prereq: sr standing in CCUPD.

487 Dietetics Practicum (8 cr, max 8). Supervised practicum in hospitals, clinics, and public health agencies. Prereq: perm.

488 Food Systems Mgmt II (4 cr; see headnote). EWSC 486. Continuation of 484. Lab in EWSC food service and Spokane hospitals. Prereq: 484.

498 Home Ec Internship (6-9 cr). Supervised internship in ed institutions, govt/social agencies, hospitals, business, or industry; geared to the professional goals of students. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

540 Parent-Child Relationships (2 cr). Open to nonmajors. The developing family; patterns of child rearing. Prereq: 334, 340, and 6 cr in psych and/or soc or equiv.

546 Problems in Home Mgmt (2 cr). Selected topics. Prereq: 346 or equiv.

551 Techniques of Supervision (2 cr).

553 Home Ec Ed (1-4 cr, max 4).

554 Curriculum in Home Ec (2 cr). Problems and planning in secondary-school homemaking ed.

570 Current Concepts in Nutrition (2 cr). Innovative concepts and tech in nutrition research; scientific investigations; nutrition problems. Prereq: 470, Zool 119, or equiv.

583 Recent Trends in Institutional Mgmt (2 cr). Mgmt prin applied to food service institutions.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Supervised internship in ed institutions, govt/social agencies, hospitals, or industry; geared to the ed and voc goals of students. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Hydrology—Hydro

George A. Williams, Head, Dept. of Geology (211 Mines Bldg.). Faculty: Dale R. Ralston, Roy E. Williams.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

563 Geohydrology (3 cr). Same as GeolE 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 200, or perm.

566 Geochem of Ground Water (3 cr). Nature and origin of dissolved constituents in ground water; modification of ground water quality through mineral processes and by human activities. Two lec and one 2-hr lab per wk. Prereq: Geol 409 or perm.

567 Hydrometeorology (3 cr). Exchange of water between the atmosphere and lithosphere or hydrosphere; factors influencing areal and temporal distribution, evapotranspiration, micrometeorology; instrumentation tech, theory. Two lec and one lab per wk.

568 Adv Geohydrology (3 cr). Analysis of problems that have confronted the geohydrologist since the inception of quantitative methods. Prereq: 563.

569 Appl of Hydrogeol Concepts (3 cr). Appl of hydraulic and chem characteristics of well and aquifer systems to practical field problems.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Industrial Education—IEd

Thomas O. Bell, Director, Div. of Teacher Education (301 Educ. Bldg.). Faculty: William R. Biggam (Chairman), James M. Cassetto (Metals).

ID130 Basic Elec (4 cr). See ET/EE 130.

ID131 Basic Electronics (4 cr). See ET/EE 131.

R135 Elec Systems (3 cr). See ET/EE R135.

140 Wood Technics (3 cr). Basic fabricating skills in machine and tool processing of wood material and products; tech info on a wide range of wood and allied products; selection and fabrication of wood products.

170 Wood Product Design and Fabrication (3 cr). Prin of design applied to a wide variety of wood products and fabrication processes: furniture, cabinetwork, laminated products, molding, wood turning, silicon rubber mold production. Prereq: 140.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

R210 Intro to Industrial Efficiency (3 cr). Industrial engr tech and approaches for supervisors.

R211 Intro to Quality Assurance (3 cr). Overview; emphasis on nuclear industry; planning, managing, conducting, and evaluating quality assurance prog.

R212 Elements of Quality Assurance (3 cr). Continuation of R211.

R213 Prin of Dimensional Inspection (3 cr). Concepts, prin, classification, and control in dimensional inspection for quality assurance.

R214 Interp of Engr Drawings and Specs (3 cr). System of conveying tech directions by means of engr drawings and specs; dev of an evaluative capability for approving and incorporating these directions into QA documents and activities.

R215 Electronic Components (3 cr). See ET/EE 215.

R222 Mech Engr Drawing (2 cr). See ET/ME R222.

235 Comm Electronics (4 cr). See ET/EE 235.

236 Industrial Electronics (4 cr). Continuation of 235. Theory and test procedures common to industrial control and automatic processing; computer electronics. Prereq: 235.

R240 Electronics and Control Systems (3 cr). See ET/EE R240.

R245 Minicomputer Fundamentals (3 cr). See ET/EE R245.

250 General Metals (3 cr). Materials, machines, and fabricating processes; methods and tech of fabricating products from sheet metal, wrought iron, bar stock; prin of layout, forging.

251 Plastics (2 cr). Materials and industrial methods of fabrication; vacuum, blow, and pressure forming; laminating; extrusion; plastisol and injection molding.

253 Metals Processing Lab I (3 cr). Use of machine tools and selected processes in fabricating metal and metal products.

254 Metals Processing Lab II (2 cr). Theory and practice of casting metals, incl sand-, shell-, lost-wax process, plaster-, full mold, and CO_2 casting, and core making.

270 Technical Competence (1-12 cr, max 12). Cr awarded for tech competence gained from experience in area of concentration for degree being sought. 270, 370, and 470 are graded P/F and are credited to the student's prog as follows: ⅓ with soph-level standing and completion of 15 cr of formal course work in the prog; ⅓ upon completion of the jr yr; and ⅓ upon completion of all other degree requirements. Max 36 cr in any combination of 270, 370, 470, 490, 491, and 492.

280 Bldg Constr Technology (3 cr). Systems approach to bldg constr technology, incl footings, foundations, floor, wall, ceiling and roof systems; bldg materials and their use in constr. Prereq: 140, 170.

290 Industrial Arts Crafts (2 cr). Alt/yrs 78-79. Creative craftwork in leather, Keene cement, metal tooling and enameling, craft plastics, and mosaic tile.

299 (s) **Directed Study** (cr arr). Prereq: perm.

300 Finishing Materials and Methods (2 cr). Alt-yrs 78-79. Methods and materials for finishing wood, metal, composition board, plastics, and other industrial products.

303 Adv Machine Tool Lab (2-3 cr). Practice in fabrication of metals beyond that covered in 253-254; extra cr for indiv project. Charge for materials payable at Controller's Office. One lec and one 3-hr lab per wk. Prereq: 254 or perm.

310 Maintenance of Tools and Equipment (3 cr). Selection, care, and maintenance of hand tools and machines common to industrial arts and vo-tech shops. Prereq: 170 or perm.

315 Industrial Design (2 cr). Alt/yrs 79-80. Planning, designing, and fabricating products from a variety of industrial materials; period furniture and prin of product design. Prereq: 170 or perm.

WS316 Power Technology (3 cr). Power sources and mechanisms; classroom appls.

R320 Electronic Drafting (3 cr). See ET/EE R320.

R330 Industrial Instrumentation I (3 cr). See ET/EE R330.

R331 Industrial Instrumentation II (3 cr). See ET/EE R331.

R332 Selection and Design of Machine Elements (3 cr). See ET/ME R332.

R333 Computer Electronics (3 cr). See ET/EE R333.

R334 Energy Analysis of Machines (3 cr). See ET/ME R334.

R335 Materials Appl (3 cr). See ET/ME R335.

R336 Fluid Systems Design (3 cr). See ET/ME R336.

R337 Tool Design (3 cr). See ET/ME R337.

R340 Nondestructive Exam Techniques and Methods (3 cr). Intro to nondestructive testing, liquid penetrant exam, magnetic particle exam, and radiography in modern industry.

365 Industrial Supervision (2-3 cr). Alt/yrs 78-79. Prin and practices; duties and responsibilities of plant supervisors; use of rating scales and other employee eval devices; supervisory methods used in on-the-job and in-plant training prog; methods of conducting job analysis; prep and use of job descriptions.

370 Technical Competence (1-6 cr, max 12). See IED 270.

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 per wk. Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Consult the time schedule for the complete title and the length of each workshop when offered. Prereq: perm.

405 Adv Woodwork (3 cr). Alt/yrs 78-79. Design and constr; use of fixtures, jigs, and templates; structural details of cabinet constr; fastening devices; materials and processes. Prereq: 140, 170, or perm.

410 Adv Metals (3 cr). Materials, tools, and processes of metal technology; students may specialize in one or several areas. Prereq: 250, 253, 254, 303, or perm.

WS416 Automotive Technology (3 cr). Theory and practice related to recent automotive technology. Prereq: WS316.

420 Eval in Industrial Ed (3 cr). Same as VocEd 420. Methods and tech; constr and use of objective tests, performance tests, rating scales, check lists; grading industrial products and projects.

R424 Computer Hardware Org and Control (3 cr). Arithmetic and related hardware; timing and control of computers; description of computer hardware/software interface.

425 Adv Electricity-Electronics (4 cr). Independent readings, research, and lab experimentation. Prereq: 235, 236, or perm.

R431-432 Reactor and Nuclear Instruments (3 cr). Nuclear electronics, incl detection; appl of instruments for reactor control and for experimental data acquisition.

R433 Quality Assurance Applications (3 cr). Prin of quality assurance applied in a morphological manner to industrial operations.

R434 Quality Assurance Org and Mgmt (3 cr). Industrial mgmt prin applied to effective econ control of quality assurance activities.

R445 Digital Process Control (3 cr). Appl of digital computers for process control; use of digital control circuits and comparison of digital and analog signals; multiple computer control.

450 Industrial Safety (3 cr). Same as VocEd 450. Org and admin of safety prog in industry and vo-tech ed shops; materials, research, lit, methods, and tech for industrial safety ed.

451 School Shop Planning and Admin (3 cr). Same as VocEd 451. Tech shops and labs; selecting, purchasing, and storage of shop supplies and equipment; organizing shop personnel system, safety prog, and records.

460 Industrial Ed for Elem Teachers (3 cr). Common hand tools and processes useful in developing creative craft prog in elem-

school classes; projects in wood, metals, plastics; correlation and integration of manual activities with instruction in elem-school subjects.

462 Industrial Ed Curriculum (3 cr). Same as VocEd 462. Prin of occupational analysis and course constr; subject content; state curriculum patterns; special-ed prog; trends and new concepts.

470 Technical Competence (1-6 cr, max 12). See 270.

472 Industrial Ed Methods (3 cr). Same as VocEd 472. Dem, lec, and problem solving; prep and use of instructional aids, indiv instruction sheets, and programmed instructional materials.

480 Hist and Philosophy of Industrial Ed (3 cr). Dev of voc and general ed phases of industrial ed; comparative and conflicting philosophies; leaders and their contributions.

490-491-492 Adv Technical Competence (1-12 cr, max 36). Supervised practicum or on-the-job work experience designed to enable the student to gain further depth in tech competence as well as in current industrial technology. Max 36 cr in any combination of 270, 370, 470, 490, 491, and 492.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

510 Professional Problems (1-3 cr, max 6). Prereq: perm.

511 Technical Problems (1-3 cr, max 6). Prereq: perm.

530 Admin and Supervision of Industrial Ed Programs (3 cr). Prin and practices; secondary-school and post-high-school levels; federal and state legislation concerning industrial ed prog.

540 Instructional Media for Industrial Ed (3 cr). Prep and use of new instructional media and systems for industrial tech arts and vo-tech subjects.

599 (s) **Research** (cr arr). Prereq: perm.

Interdisciplinary Studies—Inter

Elmer K. Raunio, Coordinator (112 Admin. Bldg.).

Courses in this subject area are under the general jurisdiction of the University Curriculum Committee and its Subcommittee on Interdisciplinary Studies.

200; 300; 400; 501 (s) **Seminar** (cr arr). Each seminar under these numbers is offered jointly by two or more depts and has been approved by the University Curriculum Committee. Prereq: perm.

203 Environmental Pollution (3 cr). See Ag 203.

204; 404; 504 (s) **Special Topics** (cr arr).

299; 399; 499; 502 (s) **Independent Study** (cr arr). Projects that have been approved by two or more depts and by the University Curriculum Committee. Prereq: perm.

394 Technology and Societal Decisions (3 cr). See Engr 394.

438 Pesticides in the Environment (2 cr). See Ent 438.

490 Technology and Human Values (2-3 cr). Same as RelSt 490. Ideological and value implications of technology for the future of man and his environment.

493-494 Seminar in Urban Studies (2 cr). Same as Arch, Econ, Geog, PolSc, or Soc 493-494. Interdisciplinary inquiry into problems of communities, physical factors, transportation, comm, housing, planning bus and industrial districts, zoning, aesthetics, sociocultural and psychological factors, neighborhoods, local govt and finance, urban renewal, regional planning, govt prog, and dynamics of dev; disc led by faculty members and consultants.

500 Master's Research and Thesis (cr arr).

503 (s) **Workshop** (cr arr). Prereq: perm.

580 Seminar in Admin and Contemporary Issues (3 cr). Same as Bus, Ed, or PolSc 580. Interdisciplinary approach to complex problems confronting administrators in the fields of bus, ed, and govt. Prereq: perm.

589 Water Resources Seminar (1 cr). Same as AgE, CE, FWR, Geol, or GeolE 589. Reports by faculty members and grad students on current problems and projects; reports are organized to give maximum interchange of ideas between divisions.

599 (s) **Research** (cr arr). Prereq: perm.

Interior Design—IntD

Paul L. Blanton, Head, Dept. of Art and Architecture (102 Art and Arch. North). Faculty: Larry G. Fisher, Charles M. Tinder.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

351-352 Interior Design I (3 cr). Situation response prog formulation synthesis in interior design. Three 3-hr studios per wk; one 7-day field trip during yr.

361 Interiors and Materials (3 cr). Use and appl of bldg materials, textiles, lighting, and color in interior space; intro to the physical properties of interior surfacing materials. Prereq: jr standing.

362 Furniture Design and Constr (3 cr). Wood furniture design and constr; models and shop drawings; full size constr of prototype.

451-452 Interior Design II (3 cr). Adv problems in interior design. Three 3-hr studios per wk; one 7-day field trip during yr.

461 Interior Systems and Constr (2 cr). Elec, mech, and plumbing systems for interior designs; interior constr; working drawings.

472 Professional Practice of Interior Design (2 cr). Interior designer's duties and reponsibilities in professional practice; services, estimating, specs, and contracts.

Journalism—Jour

Don H. Coombs, Director, School of Communication (Communication Bldg.). Faculty: Don H. Coombs, Bert C. Cross, Barbara B. Petura, Theodore E. Stanton, James K. VanLeuven.

121 News Writing (3 cr). Basic prin of writing news. Two 2-hr lec-labs per wk. Prereq: ability to type.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

222 Reporting (3 cr). Types and sources of news; gathering and writing news. Two lec and one lab per wk. Prereq: 121.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

323 Public Affairs Reporting (3 cr). Problems and practice in reporting the courts, govt, politics, other public issues. Prereq: 121, 222, or perm.

354 News Editing (3 cr). News selection, eval, editing, and display. Two lec and one lab per wk. Prereq: 121, 222, or perm.

384 Publications Editing (3 cr). Design and production of magazines, periodicals, brochures. Prereq: perm.

405 Supervising High School Publications (2 cr). Planning and direction of the newspaper and yearbook; teaching methods for journalism.

424 Interpretive Writing (3 cr). In-depth writing on current affairs; investigative tech; writing editorials and columns. Prereq: 121, 222, or perm.

432 Feature Article Writing (3 cr). Writing for specialized publications, newspapers, and magazines.

Landscape Architecture—LArch

Paul L. Blanton, Head, Dept. of Art and Architecture (102 Art and Arch. North). Faculty: Larry G. Fisher, James J. Kuska, Daniel G. Morabito, William H. Snyder.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq:perm.

204; 404 (s) **Special Topics** (cr arr).

259-260 Landscape Arch I (3-6 cr). Nonmajors may enroll for a maximum of 3 cr each semester. LArch 259; visual analysis and portrayal of landscape character; the three planes of space and how man relates to them; several small-scale studio projects (court-yards, plazas, malls) during the semester; problem solving (site analysis, ideal schematics, relationship analysis). LArch 260: planting design; plant materials for giving form to space, climatic and ecological determinants. Three lec and three 2-hr studios per wk. Prereq: Art 121-122 and Arch 155-156 for 259; 259 for 260.

269-270 Landscape Constr I-II (3 cr). Drainage and grading; soils and terrain in relation to earthwork as design determinants; irrigation layout; design of landscape structures. Three 3-hr studios per wk; one 1-day field trip each semester.

288 Plant Materials (3 cr). Selection and use, in relation to soils, topography, climate, and design. Two lec and two 2-hr studios per wk; selected field trips.

289 Hist of Landscape Arch (2 cr). Overview of landscape hist from the Egyptian civ of the Nile Valley (3100 to 1000 B.C.), Ancient Greece and Rome, the Middle Ages, the Renaissance, Oriental civ, through 20th-century styles and trends.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

358 Professional Office Practice in Landscape Arch (2 cr). Office org, fees, contracts, bonding, bidding specs, insurance, and relationships with subcontractors.

359-360 Landscape Arch II (6 cr). LArch 359: spatial notation system and visual analysis of the landscape; uses of plant materials; grading problems; terminal project combining these elements in an actual site study. LArch 360: design potential of natural and man-made materials; landscape survey and analysis tech; elements of environment as they condition design potential; methodologies of solving design problems; ways to express landscape form both graphically and with models. Three lec and three 2-hr studios per wk; one 7-day field trip during yr. Prereq: 260; 359 for 360.

387 Park and Rec Planning (3 cr) (488). Rec facilities of community role; rec concepts; design in relation to community socioecon structure, land use, and rec potential. Three lec per wk.

388 Plant Materials (3 cr). Continuation of 288. Two lec and two 2-hr studios per wk; selected field trips. Prereq: 288.

459-460 Landscape Arch III (6 cr). LArch 459: fundamentals; analysis and design for large-scale rec and suburban dev; soils, vegetation, and other ecological criterial as design determinants. LArch 460: analysis, dev, and presentation of landscape design solutions for recreational land uses such as city, county, state, and federal parks, ski areas, golf courses, and highway rest areas. Three lec and three 2-hr studios per wk; one 7-day field trip during year. Prereq: 360, 459 for 460.

490 Regional Landscape Planning (2 cr). Land use, analysis, and planning use in relation to regional scale; problems in special area studies. One lec and one 3-hr studio per wk.

Law

Albert R. Menard, Dean (101 Law Bldg.). Faculty: Michael L. Beatty, George M. Bell, Dennis C. Colson, W. Lee Eckhardt, Douglas L. Grant, Joann Henderson, D. Craig Lewis, James S. MacDonald, Walter H. McLeod, Albert R. Menard, Philip E. Peterson, Arthur D. Smith, Jr., Norman Vieira, Sheldon A. Vincenti.

For complete descriptions of the courses in this section, see the annual announcement of the College of Law. Registration in any course offered by the College of Law by nonlaw students requires permission in advance by the dean and the instructor of the course.

805-806 Procedure I-II (3 cr).

807-808 Property I-II (3 cr).

809-810 Torts I-II (3 cr; 2 cr).

811 Fundamentals of Public Law (2 cr).

812 Criminal Law and Procedure (3 cr).

813-814 Contracts I-II (3 cr).

815-816 Legal Research and Writing I-II (1 cr).

901 (s) **Seminar** (cr arr).

905 Constitutional Law and the Federal System I (4 cr).

906 Constitutional Law and the Federal System II (3 cr).

907 Admin Law (3 cr).

908 Labor Law (2 cr).

910 Antitrust and Trade Regulation (3 cr).

911 Municipal Corporations (2 cr).

912 Legislation (2 cr).

913 Equal Opportunity Law (3 cr).

920 Business Associations (4 cr).

921 Basic Legal Accounting (2 cr).

922 Corporate Securities (3 cr).

923 Commercial Paper (2 cr).

925 Sales and Secured Transactions (4 cr).

926 Creditor's and Debtor's Rights (3 cr).

927 Seminar, Business Planning (3 cr).

929 Consumer's Rights (3 cr).

930-931 Taxation I-II (3 cr; 2 cr).

932 Estate Planning (4 cr).

941 Wills, Estates, and Trusts (3 cr).

942 Natural Resources (3 cr).

943 Seminar, Real Estate Planning (3 cr).

944 Seminar, Land Use and Environmental Planning (3 cr).

945 Community Property (2 cr).

946 Legal Problems in Ag (3 cr).

950 Evidence (4 cr).

952 Remedies and Restitution (3 cr).

953 Seminar, Criminal Procedure (2 cr).

954-955 Practice Court I-II (2 cr).

956 Appellate Court (1-2 cr, max 3).

960 Conflict of Laws (3 cr).

961 Seminar, Jurisprudence (2 cr).

962 Professional Responsibility (1 cr).

963 Family Law (2 cr).

971 Seminar on Client Representation Skills (1 cr).

972 Legal Externship (1 cr).

973 Judicial Externship (6 cr).

974 Legal Aid Internship (2 cr).

982 Law Review (1-3 cr, max 3).

983 Legal Research (1-2 cr, max 4).

Library Science—LibSc

Thomas O. Bell, Director, Div. of Teacher Education (301 Educ. Bldg.).

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

420 Classification and Cataloging (4 cr). Org of library materials, prin of cataloging, subject analysis, classification, bibliographical methods, Dewey decimal system.

421 Selection of Books and Related Materials (3 cr). Eval and selection of books and other materials for libraries; analysis of community library needs and interests.

422 Use of the School Library (2 cr). Methods of interesting students in the library and using it to best advantage.

423 Reference in School Libraries (3 cr). Reference books in school and public libraries; selecting reference collections.

425 School Library Problems (2-4 cr, max 4). Org and mgmt of school libraries.

427 Library and Media Center Practicum (1-3 cr, max 6). Practical experience in libraries and other info centers under professional supervision. Prereq: perm of dept.

Mathematics—Math

Larry E. Bobisud, Dept. Chairman (300 Faculty Office Complex-East). Faculty: Erol Barbut, Larry E. Bobisud, James E. Calvert, Howard E. Campbell, Charles O. Christenson, John I. Cobb, Paul F. Dierker, Roy H. Goetschel, Ralph J. Neuhaus, Clarence J. Portratz, William D. Royalty, William L. Voxman, Delbert J. Walker, Ya-Yen Wang, Gail A. Williams.

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: 180-190-200-471-472, and 180-190-200-431-432.

CREDIT LIMITATIONS: Max 12 cr in Math 111, 112, 140, 179, 180, and CLEP combined. Math 140 carries no cr after 112; Math 180 carries 2 cr after 112; Math 112 carries no cr after 180.

R070 Review of Math (0 cr). Prereq: perm.

R080 Remedial Math (0 cr). Fundamentals of algebra. Prereq: 1 yr high school algebra and perm.

R090 Basic Engr Math (0 cr). Review of parts of college algebra, calculus, and differential equations important in engr curricula. Prereq: perm.

R105 Intro to Digital Computers (3 cr). Intro to computer tech using Fortran compiler language; conditional and unconditional control statements, input-output statements, and binary and octal number systems. Prereq: perm.

111 Finite Math (4 cr). Systems of linear equations and inequalities, matrices, linear programming, probability. Prereq: 1 yr high school algebra, 1 yr high school geometry.

112 Survey of Calculus (4 cr). Functions, graphing, derivative, integral, exponential and logarithmic functions, functions of several variables. Prereq: 1 yr high school algebra and 1 yr high school geometry.

135-136 Math for Elem Teachers (3 cr) (C). Math dev of arithmetic, informal geometry, problem solving, probability and stats as these subjects are currently taught in elem schools.

140 College Algebra (3 cr) (C). Properties of real numbers; algebraic, exponential, logarithmic functions, complex numbers, sequences, and series. Prereq: 1 ½ yrs high school algebra and 1 yr plane geometry, or equiv.

179 Analytic Trigonometry (2 cr) (C). Not open for cr to students who have previous high school or college cr in trig. Trigonometric functions, inverse functions, appl. Prereq: perm of dept.

180 Analytic Geometry and Calculus I (4 cr) (C). Functions, limits, continuity, differentiations, integration, appl, differentiation and integration of transcendental functions. Prereq: 2 yrs high school algebra and 1 yr plane geometry and ½ yr of analyt trigonometry, or equiv, or 140.

R181 Analytic Geometry and Calculus I (3 cr). Function, rate of change, limits, continuity, differentiation of algebraic functions with appl, and integration. Prereq: perm.

184 Elements of Linear Algebra (2 cr). Vector spaces, linear transformations, matrices, linear equations and determinants, and characteristics values. Prereq: 140.

186 Theory of Numbers (3 cr). Elem number theory, incl divisibility properties, congruences, and Diophantine equations. Prereq: 140 or perm.

190 Analytic Geometry and Calculus II (4 cr). Differentiation and integration of transcendental functions, integration tech, general mean value theorem, numerical tech, and series. Prereq: 180.

R191 Analytic Geometry and Calculus II (3 cr). Appl of the definite integral, differentiation and integration of transcendental functions, methods of integration, and determinants and linear equations. Prereq: perm.

200 Analytic Geometry and Calculus III (3 cr). Vectors, functions of several variables, and multiple integration. Prereq: 190.

R201 Analytic Geometry and Calculus III (3 cr). Two- and three-dimensional analytic geometry, vectors, hyperbolic functions, parametric equations, and polar coordinates. Prereq: perm.

202 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

205 Intro to Computer Programming (3 cr). Same as CS 205. Intro to PL/1 programming and the operating system.

R211 Analytic Geometry and Calculus IV (3 cr). Partial derivatives, infinite series, and complex numbers and functions. Prereq: perm.

215 Seminar in Topology of the Plane (2 cr). Carries no cr after 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: 180, 190, and perm.

299 (s) **Directed Study** (cr arr). Prereq: perm.

300 Math for Teachers (3 cr). Alt/yrs 78-79. Sets, number systems, number theory, projective and Euclidean geometry. Prereq: 180.

303 Math as an Art (3 cr). For students in nonmath fields. Intro to the creative process of math. Graded P/F.

305 Computer Org and Programming (3 cr). Same as CS 305. OS 360/370 assembler language, macros, linkages to other languages. Prereq: 205 or Engr 131.

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 coefficients, series solutions, systems of linear equations, Laplace transforms, and existence theorems. Prereq: 190 (200 recommended).

320 Probability and Stats (3 cr). Same as ApSt 320. Intro to sample spaces, random variables, distribution functions, estimation, and testing hypotheses with appl. Prereq: 180 or 112.

331 Algebra for Elem School Teachers (3 cr). Real and complex numbers, linear equations, modular arithmetic, polynomials, functions. Prereq: 136.

332 Geometry for Elem School Teachers (3 cr). Experimental and

informal geometry, congruence, measurement, constr, similarity. Prereq: 136.

390 Postulational Geometry (3 cr). Alt/yrs 79-80. Postulates of Hilbert and Euclid; non-Euclidean geometries; the Erlanger program; projective geometry. Prereq: 200.

400 (s) **Seminar** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

405 Adv Programming (3 cr) (485). Same as CS 405. OS/370 JCL, file mgmt with utility programs, PL/1 compiler, linkage editor and loader, interlanguage comm, adv PL/1 topics, incl based variables, locate-mode I/O, indexed and regional fields, preprocessor, and modular programming. Prereq: 205 or equiv.

407 Discrete Math Structure (3 cr). Appl of algebra and combinatorics to computer sc; groups, group codes, finite state machines, graph theory, enumeration. Max 5 cr in 407 and 461. Prereq: 184, 310, 433, or 440 or perm.

411 Elem Topology (3 cr). Alt/yrs 78-79. Topology of metric spaces; compactness, connectedness, continuity. Prereq: 184, 200, or perm.

433-434 Numerical Analysis (3 cr). Same as ApSt 433-434 and CS 433-434. Alt/yrs 79-80. Analysis of numerical methods useful in solving applied problems. Prereq: 200; prereq or coreq: 205 or Engr 131.

440 Linear Algebra (3 cr). Vector spaces, linear transformations and matrices, quadratic forms, characteristic vectors and roots. Prereq: 184.

451-452 Probability Theory and Math Stats (3 cr). Same as ApSt 451-452. Random variables, limit theorems, distribution of sample stats, estimation, testing hypotheses. Prereq: 184, 200.

461-462 Higher Algebra (3 cr). Abstract algebra. Prereq: 184.

471-472 Adv Calculus (3 cr). Topology of Euclidean n-space, limit and continuity, differentiation, integration. Prereq: 184, 200.

480 Partial Differential Equations (3 cr). Intro to Fourier analysis, appl to solution of partial differential equations; classical partial differential equations of engr and physics. Prereq: 310.

482 Adv Applied Math (3 cr). Selected topics. Prereq: 310.

487 Data Structures (3 cr). Same as CS 487. Alt/yrs 79-80. Storage systems, data structures in languages, trees and graphs, data mgmt systems. Prereq: 205.

490 Intro to Set Theory (3 cr). Alt/yrs 79-80. Set operations, functions, binary operations and relations, cardinal and ordinal numbers, axion of choice, partially ordered sets, and Zorn's lemma. Prereq: 200.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

591 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

511-512 Topology (3 cr). Alt/yrs 79-80. Basic concepts of point set and algebraic topology.

516 Topics in Topology (3 cr). Algebraic methods and topics in topology.

521 Seminar in Topology (1-2 cr, max arr). Current lit.

523-524 Algebraic Topology (3 cr). Alt/yrs 78-79. Basic homotopy theory, covering spaces, homology theory, and appl.

525-526 Adv Topics in Topology (3 cr, max 12).

530 Differential Geometry (3 cr). Space curves and surfaces, Gaussian and mean curvature, non-Euclidean and Riemanian geometries.

531-532 Complex Variables (3 cr). Alt/yrs 78-79. Theory of functions of a complex variable.

535-536 Real Variables I-II (3 cr). Alt/yrs 79-80. Theory of functions of real variables.

539 Theory of Ordinary Differential Equations (3 cr). Alt/yrs 79-80. First-order systems, equations with analyt coefficients, self-adjoint boundary value problems.

541 Seminar in Analysis (1-2 cr, max arr). Current lit.

545-546 Adv Topics in Analysis (3 cr, max 12).

551-552 Abstract Algebra I-II (3 cr). Alt/yrs 79-80. Structure of rings; Galois theory. Prereq: 462.

553-554 Abstract Algebra III-IV (3 cr). Alt/yrs 78-79. Group theory; nonassociative algebras. Prereq: 462.

561 Seminar in Algebra (1-2 cr, max arr). Current lit.

565-566 Adv Topics in Algebra (3 cr, max 12).

R570 Adv Numerical Analysis (3 cr). Interpolation; numerical differentiation, integration, and solution of algebraic and differential equations. Prereq: numerical analysis.

571-572 Functional Analysis (3 cr). Alt/yrs 78-79. Linear topological spaces and linear operators. Prereq: 536.

574 Topics in Applied Math (3 cr). Integral and differential equations.

R577-R578 Adv Math Stats (3 cr). Dev and appl of math stats to problems in the engr sc. Prereq: perm.

R580 Numerical Solutions of Partial Differential Equations (3 cr). Finite difference methods of eliptic, parabolic, and hyperbolic equations; solution methods suitable for digital computers; interative methods for large scale linear systems. Prereq: perm.

585-586 Recent Dev in Math (3 cr). For students with extensive background in specific phases.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Mechanical Engineering—ME

William P. Barnes, Dept. Chairman (202 Gauss Lab. Bldg.). Faculty: Jasper R. Avery, William P. Barnes, Richard T. Jacobsen, J. Ted Norgord, T. Alan Place, Henry W. Silha, Richard B. Stewart, Richard E. Warner.

200 Sophomore Seminar (0 cr). Disc on topics of current concern to the profession. Graded P/F.

223 Intro to Mech Design (2 cr). Fundamentals of engr design, graphical representation of mech systems. One lec and one 2-hr lab per wk. Prereq: Engr 101.

253 Materials Processing (3 cr). Theory and practice of machining, casting, forming, and shaping materials. Two lec and one 2-hr dem per wk; two 1-day field trips.

261 Engr Materials (4 cr). Fundamental factors influencing properties and selection of materials. Three lec and one 3-hr lab per wk. Prereq: Chem 111.

299 (s) **Directed Study** (cr arr). Indiv study of selected topics. Detailed report required. Prereq: perm.

300 Junior Seminar (0 cr). See 200.

304 Materials Selection for Mech Design (2 cr). Selection of engr materials related to service conditions. Prereq: 261.

320 Fluid Mechanics Lab (1 cr). One 3-hr lab per wk. Prereq: ES 211, Math 200; coreq: ES 320.

322 Applied Thermodynamics (3 cr). First and second laws; property relations, mixtures, compressible flow, cycles, systems analysis; classical and statistical concepts. Prereq: ES 321.

324 Mech Design I (3 cr). Kinematic prin and appl to analysis and synthesis of machines. Two lec and one 3-hr lab per wk; one 1-day field trip. Prereq: ES 211, 221.

326 Mech Engr Project (1-3 cr). Indiv investigation and report. Prereq: jr standing and perm of dept.

354 Adv Materials Processing (2 cr). Materials processing, fabrication and finishing. One lec and one 3-hr lab per wk. Prereq: 253.

361 Applied Engr Materials (3 cr). Strengthening and surface treatment of materials; joining of metals; properties of nonmetallics; composite materials; photomicrography; failure investigation of mech engr systems. Two lec and one 2-hr lab per wk. Prereq: 261.

374 Fuels and Lubricants (2 cr). Correlation between properties of fuels and lubricants and their performance in machines. One lec and one 2-hr lab per wk. Prereq: perm.

390 Mech Engr Analysis (3 cr). Appl of math analysis to problems of mech engr; discrete and continuous systems. Prereq: Math 310.

404 (s) **Special Topics** (cr arr).

410 Production Engr (3 cr). Planning, analysis, and control of engr design processes; decision models, CPS, PERT, data collection, linear programming, materials mgmt, quality control, computer tech.

411 Techniques of Value Analysis and Engr (3 cr). Eval of basic and secondary functions of products; job plans; mgmt tech; org of value work utilizing case studies.

412 Gas Dynamics (4 cr). Compressible flow; one- and two-dimensional flows; normal and oblique shock-waves; unsteady flow; shock tubes. Three lec and one 2-hr lab per wk. Prereq: ES 320, Math 310.

420 Fluid Dynamics (4 cr). Viscous flows, fluid states, Navier-Stokes and boundary layer equations, theories of turbulance. Three lec and one 2-hr lab per wk. Prereq: ES 320, Math 310.

422 Analyt Thermodynamics (3 cr). Theoretical and experimental dev; real fluids; thermodynamic theories and appl to physical systems. Prereq: 322 or perm.

425 Mech Design II (4 cr). Stress and strain, material failure, combines stresses, variable and impact loading, machine elements, lubrication theory, bearing design. Prereq: 324, ES 340.

426 Mech System Design (4 cr). Indiv or team system design. Incl econ; final report reqd. Two lec, two 2-hr labs, and six hrs of independent work per wk. Prereq: 425.

427 Optimum Design (3 cr). Tech for optimum design, appl to mech elements with practical constraints. Prereq: 425.

433 Internal Combustion Engines (3 cr). Theory and characteristics of internal combustion engines, testing, combustion, fuels, lubrication, emissions and control, carburetion and fuel injection. Prereq: 322.

435 Energy Conversion Systems (3 cr). See ChE 435.

441 Thermal Systems Design (3 cr). Design of integrated thermal systems; steam power plants; econ, varaible output, environmental problems. Prereq: 322.

444 Environmental Engr (3 cr). Problems associated with man's environment; a/c, refrigeration, solar heating, thermoelectric cooling, air pollution. Prereq: 322.

445 Heat Transfer (4 cr). Heat conduction in steady and unsteady states, free and forced convection, radiation, fluid friction. Three lec and one 2-hr lab per wk. Prereq: ES 320, 321.

450 Cryogenic Engr (3 cr). Low temperature systems, gas liquefaction, cryogenic refrigeration and storage, properties of materials at low temperatures, insulation problems. Coreq: 445, prereq: ES 321.

451 Aerospace Propulsion (3 cr). Thermodynamic, fluid flow, heat transfer, and aerodynamic problems in jet propulsion systems. Prereq: ES 321.

461 Fracture in Relation to Design (3 cr). Mechanics of fracture, plane strain fracture toughness, time-dependent fracture. Prereq: perm.

472 Mech Vibrations (4 cr). Free, forced, transient vibrations with and without damping; multimass systems; single and two-degree freedom; vibration control. Three lec and one 2-hr lab per wk. Prereq: ES 221, ES 340, Math 310.

473 Applied Stress Analysis (3 cr). Stresses and strains under static and dynamic loads, photoelastic methods. Two lec and one 2-hr lab per wk. Prereq: ES 340.

474 Lubrication, Friction, and Wear (3 cr). Lubrication theory, compressible and incompressible lubricants, hydrostatic and hydrodynamic bearings; friction and wear. Prereq: ES 320-321.

491 Design Seminar (1 cr). Professional paper reqd. Graded P/F. Prereq: sr standing.

492 Seminar (0 cr). One 3-6 day field trip. Graded P/F. Prereq: sr standing.

499 (s) **Directed Study** (cr arr). Selected topics. Detailed report reqd. Prereq: sr standing and perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Engr and engr-related topics. Graded P/F. Prereq: perm.

502 (s) **Directed Study** (cr arr). Supervised study, incl critical reading of current lit. Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

505 Dynamics (3 cr). Dynamic specs of solid bodies; rectangular, angular, and plane motion; three-dimension dynamics; beams. Prereq: ES 221, Math 310, or perm.

507 Machine Design (3 cr). Adv mech design to meet needs and interests of students; special projects. Prereq: 425 or perm.

508 Adv Stress Analysis (3 cr). Eval of stress and strain by analyt and experimental methods; use of digital computer; appl to design of mech components. Prereq: 473, ES 340.

512 Adv Gas Dynamics (3 cr). Compressible flow; transonic, supersonic, hypersonic flow; turbulent boundary layer and shock wave boundary layer interactions. Prereq: 322, ES 320.

515 Transport Phenomena (3-4 cr). See ChE 515.

WS516 Physical Gas Dynamics (3 cr). WSU 537. Methods of statistical mechanics and molecular transport theory; evolution of properties of gases from molecular data.

WS517 Theory of Real Fluids (3 cr). WSU 541. Properties of real fluid flow; Navier-Stokes equations and their solution; concept of the boundary layer; turbulence; non-Newtonian flows. Prereq: 515 or equiv.

WS518 Turbulent Flow and Diffusion (2 cr). WSU CE 551. Theories of turbulent motion and diffusion in the flow; appl in jet, pipe, and natural environments. Prereq: ES 320 or equiv.

WS519 Hydrodynamics (3 cr). WSU CE 556. Equations of continuity, motion, momentum, and velocity from classical hydrodynamics; selected topics in real fluid flow theory. Prereq: 420 or equiv.

520 Adv Fluid Dynamics (3 cr). Use of vector and tensor calculus in fluid dynamics, Navier-Stokes equation, boundary layer theory with pressure gradients, turbulent flow.

ID522 Statistical Thermodynamics (3 cr). Probability theory and quantum mechanics, statistical mechanics, thermodynamic probability, molecular interp of first and second laws; kinetic theories. Prereq: ES 321.

ID523 Computational Methods for Thermal Systems (3 cr). Thermodynamic property formulations for computer modeling of thermal systems; availability and irreversibility concepts. Prereq: 422 or perm.

524 Thermodynamics (3 cr). Thermodynamic laws for design and optimization of thermodynamic systems; statistical methods; equations of state, properties of ideal and real fluids; recent dev in experimental and theoretical thermodynamics. Prereq: 322 or perm.

R525 Adv Heat Transfer (2-3 cr). See ChE 525.

ID526 Thermodynamic Property Formulations (3 cr). Thermodynamic property formulations from experimental measurements; least squares fitting; multiple regression analysis; statistical considerations; thermodynamic consistency and nonanalytic nature of critical point. Prereq: 422 or perm.

R528 Adv Thermodynamics (3 cr). Same as ChE R528. Laws of thermodynamics and statistical thermodynamics; equations of state; thermodynamic properties of ideal and real fluids; pure components and mixtures; physical and chem equilibrium; design and optimization of thermodynamic systems. Prereq: perm.

R537 Adv Fluid Mechanics (2-3 cr). See ChE 537.

541 Mech Engr Analysis I (2-3 cr). See ChE 541.

ID&WS545 Conduction Heat Transfer (3 cr). Steady-state and transient conduction of heat; rectangular, cylindrical, and spherical coordinate systems. Prereq: 445 or perm.

ID&WS546 Convection Heat Transfer (3 cr). Energy conservation equation; laminar and turbulent forced convective heat transfer; internal and external flow; free convection. Prereq: 445 or perm.

ID&WS547 Radiation Heat Transfer (2-3 cr). Thermal radiation; radiation interchange among surfaces; radiation in absorbing-emitting gases; combined modes of heat transfer. Prereq: 445 or perm.

548 Elasticity (3 cr). See CE 548.

549 Finite Element Analysis (3 cr). See CE ID546.

550 Vibration Engr (3 cr). Analysis of vibrating systems, incl several degrees of freedom; branched and closed systems; energy methods; vibration measurement and control. Prereq: 472 or perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Engineering Technology
Mechanical Engineering—ET/ME

R222 Mech Engr Drawing (2 cr). Same as IEd R222. Dimensioning, shop drawings, fastenings; weld specs, working drawings, jigs, fixtures, piping. Prereq: Engr 101 or equiv.

R332 Selection and Design of Machine Elements (3 cr). Same as IEd R332. Prin and characteristics of machine elements in mech design; bearings, gears, bolted joints, linkages.

R334 Energy Analysis of Machines (3 cr). Same as IEd R334. Thermodynamics and heat transfer, properties of substances, steady flow, cycles and their appl to equipment, simple heat exchangers.

R335 Materials Appl (3 cr). Same as IEd R335. Materials appl in design, material properties, material selection as related to service conditions.

R336 Fluid Systems Design (3 cr). Same as IEd R336. Fluid flow in pipes, incl pressure losses, seals, series and parallel flow, measurements and control, selection of equipment.

R337 Tool Design (3 cr). Same as IEd R337. Design of jibs, fixtures, gauges; tools are designed by the students to solve manufacturing problems.

Medical Science—MedSc

Guy R. Anderson, Director, WAMI Medical Program (302 Student Health Services Bldg.). Faculty: Guy R. Anderson, Joseph G. Cloud, Steven L. Davis, Victor P. Eroschenko, Dale O. Everson, Ronnal L. Lee, Robert R. Leonard, Thomas A. McKean, Philip J. Mohan, Victor E. Montgomery, David P. Olson, R. Garth Sasser, Erik H. Stauber, George W. Teresa, James D. Willett.

The following medical doctors serve as affiliate clinical professors of medical science: Donald E. Adams, Richard M. Alford, John M. Ayers, John M. Ayers, Jr., Thomas D. Baird, Norris A. Biggerstaff, Christine M. Bjornstad, Edward L. Boas, John B. Britzmann, Ronald D. Brooks, Gregory J. Burrato, Lloyd S. Call, Harry Chinchinian, Allen M. Cochrane, Robert C. Colburn, Lester C. Crismon, Omar H. Drury, Ronald E. Dunn, Ronald DuPont, Duane H. Espeland, Rodger G. Hawkins, Carl T. Koenen, Spencer M. Long, Dean Mahoney, William C. Mannschreck, William P. Marineau, Cyril V. Novak, Robert L. Olson, David A. Spencer, Stephen M. Stewart, Dan E. Stipe, Richard D. Thorson, David C. Valder.

Note: All courses in this subject field are open only to students who have WAMI medical student status or by perm of the director.

501 (s) **Seminar** (cr arr).

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.

504 (s) **Special Topics** (cr arr).

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 physicans in their offices in accordance with the student's preference of discipline at the WAMI sites.

ID&WS510 Histology (3 cr. Microscopy of cells in tissues and organs of the human body; emphasis on function. Three lec and one 3-hr lab per wk.

ID&WS511 Anatomy of the Trunk (3 cr). Regional study of anatomy of human thorax, abdomen, pelvis, and perineum in correlation with clinical cases. Two lec and one 3-hr lab per wk.

ID&WS512 Mechanisms in Physiology and Pharmacology (4 cr). Basic mechanisms of physiology and pharmacology.

513 Intro to Clinical Medicine (1 cr). Comm skills and interview tech to form the basis for the eventual doctor-patient relationship.

ID&WS514 Molecular and Cellular Biol I (3 cr). Classical molecular and cellular biochem, cellular physiology, and molecular genetics.

ID&WS515 The Ages of Man (2 cr). Human dev from birth to senescence emphasizing disorders which occur during various life phases.

ID&WS520 Cell and Tissue Response to Injury (4 cr). Cell and tissue injury, immunity and immune responses, immediate and delayed hypersensitivity, inflammation, and neoplasia.

ID&WS521 Natural History of Infectious Diseases and Chemotherapy (5 cr). Pathogenesis, resistance, epidemiology, clinical manifestations and control of bacterial, fungal, parasitic and viral infectious diseases, prin of chemotherapy and asepsis; sterilization; nosocomial and iatrogenic infections and prevention.

522 Intro to Clinical Medicine (2 cr). Continuation of comm skills especially as related to and dealing with affective material.

523 Systems of Human Behavior I (2 cr). Conceptual systems and models of behavior, normality and abnormality, environment and social learning, conditioning, learning in the autonomic nervous system, catecholamines and behavior, illness behavior, feelings, emotion and cognition, physician-patient interaction, diseases and technics of behavior change.

ID&WS524 Molecular and Cellular Biol II (2 cr). Continuation of MedSc ID&WS514.

ID&WS530 Epidemiology (2 cr). Intro to biostatistical inference; interaction of agent, host, and environment in disease causation and transmission.

ID&WS531 Head, Neck, Ear, Nose, and Throat (2 cr). Gross anatomy, incl skull, pharynx, and larynx; audition and balance.

ID&WS532 Nervous System (5 cr). Normal structure and function of the nervous system, incl the eye.

533 Medicine, Health, and Sociology (1 cr). The health delivery system; relationship between health and cultural/socioecon factors.

ID&WS534 Endocrine System (2 cr). Prin of endocrine physiology and metabolism, hormonal biosynthesis, important pathophysiological states.

535 Intro to Clinical Medicine (2 cr). Screening physical exam.

Metallurgy—Met

John R. Hoskins, Head, Dept. of Mining Engineering and Metallurgy (217 Mines Bldg.). Faculty: Gene E. Bobeck, Donald F. Clifton, Keith A. Prisbrey, Patrick R. Taylor.

102 Materials and Their Manufacture (1 cr). Intro to materials for students who wish to know how and from what the material things of our civ are made. One 3-hr lab per wk; one 1-day field trip.

200 (s) **Seminar** (cr arr). Prereq: perm.

201 Elements of Materials Science (3 cr). Prin relating properties of metals, ceramics, polymers, and composites to their structures. Prereq: Chem 103 or 111 or 114.

202 Apparatus and Practices (2 cr). Measure and control tech and instruments, metallography, pyrometry, quality control. One 2-hr lec-dem and one 3-hr lab per wk. Coreq: 201.

204 (s) **Special Topics** (cr arr).

299 (s) **Directed Study** (cr arr). Prereq: perm.

305 Structure of Solids (3 cr). Crystallography, crystal properties and chemical bonding, defects, amorphous solids, polymorphism and crystal growth. Prereq: Chem 103 or 111 or 114, and Phys 221.

308 Intro to Metallurgical Thermodynamics (3 cr). Review of the thermodynamic laws, thermodynamics of solutions, appl to kinetic processes. Prereq: Cherm 305, ES 321.

400 (s) **Seminar** (cr arr). Review of current lit. One 3-day field trip. Prereq: perm.

404 (s) **Special Topics** (cr arr).

ID412 Mechanical Met (2 cr). Mech properties of solids, testing, brittle and ductile fracture, plasticity, mech processes in metallurgy. One 1-day field trip. Prereq: 201.

413 Physical Met I (4 cr). Theory, structure, and properties of metals and alloys; their relation to industrial problems. Two lec and one 3-hr lab per wk. Prereq: 201, 308.

414 Metallurgical Design (2 cr). Factors involved in design problems; directed work on selected problems. One lec and one 1-hr lab per wk. Prereq: sr standing.

416 Physical Met II (2 cr). Continuation of 413 with emphasis on precipitation, diffusion, phase diagrams, and transformations in steel. Prereq: 413 or perm.

417 X-Ray Diffraction (2-3 cr). Diffraction of x-rays by crystals; appl to study of polycrystalline materials. Two lec and one 3-hr lab per wk. Prereq: Phys 114 or 221.

WS418 Polymeric Materials (3 cr). Alt/yrs 79-80. WSU MSE 402. Structural characterization, syntheses, and reactions of polymeric materials; relationships between structure and properties; viscoelasticity, deformation, and physical behavior of polymers. Prereq: 201 or jr standing in engr, chem or physics.

WS420 Fracture in Solids (3 cr). WSU MSE 433. Fracture initiation and propagation in metals, ceramics, polymers, wood, and composites; effect of environment; relationship to microstructure. Prereq: sr standing in engr, chem, or physics.

421 Ceramic Materials (3 cr). Properties and uses; cermets and related materials. Prereq: Phys 113-114 or 220-221, and Chem 103 or 111 or 114.

422 Ceramics Lab (2 cr). Ceramic fabrication; PCE and DTA determinations. Two 3-hr labs per wk. Prereq: 421.

441 Ore Dressing (4 cr). Methods of comminution and concentration of ores. Three lec and one 3-hr lab per wk; two 1-day field trips. Prereq: Chem 103 or 111, Phys 220-221, and Math 200.

ID442 Extractive Met (4 cr). Extraction and refining of ferrous and nonferrous metals. Three lec and one 3-hr lab per wk; one 1-day field trip. Prereq: 308 or equiv, and Chem 103 or 111, Phys 220-221.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

ID503 Adv Extractive Met (3 cr). Topics in the extraction and refining of metals. Prereq: 442 or perm.

504 (s) **Special Topics** (cr arr).

ID506 Adv Ore Dressing (3 cr). Theories of comminution; flotation and related surface phenomena; elec and magnetic concentration; process control. Prereq: 441 or perm.

ID507 Adv Ceramics (3 cr). Alt/yrs 78-79. Theoretical aspects; constitution of green bodies; shrinkage; porosity; sintering; effect of structure on mech, elec, and magnetic properties; glasses. Prereq: perm.

510 Research Methods (3 cr). Alt/yrs 78-79. Experimental methods and apparatus; planning and eval. Two lec and one lab per wk. Prereq: perm.

511 Adv Physical Met (3 cr). Alt/yrs 78-79. Theory of metals and alloys; appl to problems of structure; properties of engr metals. Prereq: perm.

512 Metallurgical Thermodynamics (3 cr). Alt/yrs 79-80. Aspects of thermodynamics most used in met; appl to problems. Prereq: perm.

514 Phase Rule and Phase Relations (3 cr). Alt/yrs 78-79. Phase rule constr and interp of phase diagrams; metastable and unstable phase relations. Prereq: perm.

517 Kinetics of Metallurgical Rections (3 cr). Alt/yrs 79-80. Appl of absolute rate theory; time and temperature dependence; kinetics of gas-solid reactions; corrosion, diffusion, and recrystallization. Prereq: perm.

518 Adv Mechanical Met (3 cr). Alt/yrs 79-80. Micro- and macroscopic theories of deformation; materials-forming processes; mech tests. Prereq: perm.

ID520 Nucleation in Solids (3 cr). Alt/yrs 78-79. Theories of Volmer-Weber and Backer-Doring; appl to solid-state nucleation; relation to solid-state transformations. Prereq: perm.

ID522 Surface Reactions of Metals (3 cr). Alt/yrs 79-80. Surface chem and physics; illustrative examples from met. Prereq: perm.

R525 Physical Chem of Metals (3 cr). Thermodynamics, heterogenous equilibria, electrochem, diffusions, and kinetics. Prereq: perm.

R531 Behavior of Engr Materials (3 cr). Static and dynamic properties; relation of mech properties to physical properties and crystal imperfections. Prereq: perm.

R533 Adv X-Ray Diffraction (3 cr). Prin and appl to adv problems. Prereq: perm.

R534 Radiation Effects in Materials (3 cr). Interactions between radiation and solids. Prereq: perm.

R535 Failure of Structural Materials (3 cr). Mechanisms by which failure can occur in structural materials.

R536 Theoretical Structural Met (3 cr). Structure of metals and alloys; free electron theory; zone theory; equilibrium; order-disorder; kinetics of phase changes and shear processes. Prereq: perm.

R538 Corrosion in Met (3 cr). Corrosion by aqueous media, gases, liquid metals, and fused salts. Prereq: physical chem, incl electrochem, or perm.

R539 Electron Metallography (3 cr). Alt/yrs 79-80. Operation and appl in met of the electron microscope, microprobe, and other instruments applying charged particles optics. Prereq: perm.

WS542 High Temperature Phenomena in Solids (3 cr). Alt/yrs 78-79. WSU MSE 542. Kinetics and mechanisms of diffusion in solids; high-temperature deformation; oxidation. Prereq: 416 or one semester of chemical thermodynamics.

WS544 Adv Topics in Materials Science (3 cr, max 6). WSU MSE 501. Chemical crystallography, microstructure, ultrastructure, theories of crystalline and noncrystalline solids, rheology and fracture mechanics of material.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Military Science—MS

John N. Vanderschaff, Dept. Head (101 Mem. Gym). Faculty: Lawrence E. Broughton, Raymond C. Gannaway, John R. McQuestion, Paul W. Rea, John N. Vanderschaaf.

101-102 Fundamentals of Military Leadership and Mgmt (1 cr). Army Officer Ed Prog orientation; org, missions, and functions of the Army; basic map reading; intro to military leadership and mgmt.

201-202 Applied Leadership and Mgmt (1 cr). Leadership training, command experience, org and employment of basic military units; unit mgmt and leadership problems. Prereq: 101-102 or perm of dept.

205 Fundamentals and Applied Leadership and Mgmt (Compressed) (4 cr). Compression of 101-102, 201-202. Leadership training, command experience, org and employment of basic military units, map reading, and unit leadership problems. Three lec and one 2-hr lab per wk. May not be taken for cr after 101, 102, 201, or 202. Prereq: 2nd-semester soph or 1st-semester jr standing and perm of dept.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

301-302 Adv Leadership and Mgmt (3 cr). Leader's role in offensive and defensive missions at squad and platoon level; prep for adv camp. Prereq: 201-202 or perm.

401-402 Seminar in Leadership and Mgmt (3 cr). Appl of leadership and mgmt skills; combined arms team operations; military justice system; prep for active duty. Prereq: 301-302.

489 Adv Encampment (cr arr). Intensive six-wk summer encampment at Ft. Lewis, Wash. Graded P/F. Prereq: 301-302 and perm of dept.

Mining Engineering—Min

John R. Hoskins, Head, Dept of Mining Engineering and Metallurgy (217 Mines Bldg.). Faculty: Samuel S. M. Chan, William R. Green, Christopher J. Hall, John R. Hoskins.

103 Elements of Mining (2 cr). Open to nonmajors. Terminology and mining's role in national econ and way of life; incl mineral econ, mgmt, prospecting, discovery, dev, exploitation, processing, marketing.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

218 Mine Rescue and First Aid (1 cr). Normally offered as one full wk of training by USBM or MESA. Students successfully completing this course qualify for a certificate showing training in self-contained oxygen breathing apparatus, self-rescuer, and first aid.

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.

306 Industrial Safety (2 cr). Underground and surface environmental problems of accident and health; stats, prevention, economy, research on dusts, lighting, rock stability, air, and contaminants. One 2-day field trip.

350 Mineral Econ (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.

352 Mine Mgmt (3 cr). Mgmt of mineral-producing systems; finance, cost analysis, decision making, resource scheduling, personnel mgmt. One 2-day field trip. Prereq: 103.

371 Mine Ventilation I: Psychrometrics (3 cr). First and second laws of thermodynamics; steam tables and the perfect gas; gas-vapour mixtures; psychrometric chart; heat, humidity, comfort ratings, cooling; natural ventilation.

372 Mine Ventilation II: Quantity and Quality Control (2 cr). Gases, dust, airflow, instrumentation, circuits, fans. Prereq: 371.

390 Mine Dev (2 cr). Ore deposits, field mapping, mine surveying, mine eval, exploration, and dev.

391 Mining Prin (3 cr). Mine design, planning, problem solving, and elec distribution. One 4-day field trip. Prereq: 103, ES 211; coreq: ES 340.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Rock Mechanics (3 cr). Basic mech properties of rocks and rock masses; lab and in-situ tech to obtain strength, stress distribution, and deformation behavior in rock masses; appl of analyt tech 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.

404 (s) **Special Topics** (cr arr).

410 Mine Plant Design (2 cr). Alt/yrs 79-80. Mine structures such as headframes, buildings, ore bins, and mech devices. Two 3-hr labs per wk; one 1-day field trip. Prereq: ES 340.

420 Mineral Resources Mgmt and the Environment (3 cr). Factors that must be considered in the mgmt, dev, or exploitation of nonrenewable natural resources. One 2-day field trip. Prereq: jr standing.

R431 Industrial Fire Protection I (3 cr). Appl of engr prin to industrial fire protection; analysis and use of bldg codes; mgmt of industrial fire protection prog. Prereq: perm.

R432 Industrial Fire Protection II (3 cr). Analysis of significant fire-loss experience in the U.S.; causes, lessons learned, and their relation to dev of fire codes; modern trends in fire safety research technology.

R433 Environmental Health I—Industrial (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.

R434 Environmental Health II—Occupational Stress (3 cr). Intro to the human system response and susceptibility to problems of occupation originating from a/c, air cleaning, ventilation, respiratory devices, air pressure, noise, lighting, temperature, and radiation; ident, documentation, and reporting of problems and results.

R435 Operational Safety (3 cr). Basic concepts of industrial safety prog with respect to the more common mech problems of constr and operation within modern industry.

450 Mine Planning I (3 cr). Design of surface systems, open cuts, quarries, alluvial, and strip mining; slope stability, stripping, and earthmoving; appl of operation research tech, transportation by rail, belt, cable, and wheel. One 3-day field trip. Prereq: perm.

451 Mine Planning II (3 cr). Design of underground openings and systems; industrial engr practices; operations research tech; equipment selection. One 3-day field trip. Prereq: perm.

470 Mine Services (3 cr). Movement of materials, incl prin of fluids and mechanics; ventilation fundamentals, pumping, hoisting, conveying, track, and rail haulage. One 4-day field trip. Prereq: 103, ES 211, ES 320.

490 Geophysical Exploration (3 cr). Prin and practical methods; magnetic, elec, electromagnetic, seismic, gravitational, radioactive, and geothermal methods; geophysical well logging. One 3-day field trip. Prereq: physical geology and physics; calculus is recommended.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 Mine Stress Analysis (3 cr). Alt/yrs 78-79. Appl of tech in experimental stress analysis for structural design in all phases of the engr system; photoelastic modeling and coating; strain gage tech; stress patterns in frameworks, rock masses, and foundations. One lec and two 3-hr labs per wk. Prereq: ES 340.

504 Rock Mechanics II (3 cr). Alt/yrs 78-79. Theories of rupture of elastic and inelastic, brittle materials; mechanisms of fracture

propagation and effects in engr structures and rock fragmentation; effects of nuclear blasting, earthquakes, and other dynamic stress waves. Prereq: 401 or perm.

505 Design of Mine Structures (4 cr). Alt/yrs 78-79. Appl of experimental stress analysis and the prin of engr similitude in the design of stable mine structures. One lec and three 3-hr labs per wk. Prereq: 401, and 503 or 504.

506 (s) **Special Topics** (cr arr).

510 Mine Plant Design II (3 cr). Alt/yrs 79-80. Practical problems, system synthesis of design of headframes, bldgs, bridges, ore bins, road, railroad, and other structures; engr case methods. Three 3-hr labs per wk. Prereq: 103, 410, and ES 340, or perm.

513 Mine Ventilation Planning (3 cr). Alt/yrs 79-80. Physical and econ factors involved in providing adequate air flow to a typical mine circuit affected by gas emission, heat flux from rock walls, and dust sources; ventilation networks. Two lec and one 3-hr lab per wk. Prereq: perm.

514 Mine Environmental Analysis (3 cr). Alt/yrs 78-79. Contaminating effects of gases, dust, radiation, heat, and moisture in a mine environment; work efficiency of miners subjected to various environmental conditions. Two lec and one 3-hr lab per wk; one 3-day field trip. Prereq: perm.

520 Mining Geophysics (3 cr). Alt/yrs 78-79. Theory and appl of magnetic, elec, electromagnetic, and radioactive methods of geophysical prospecting for metallic and non-metallic mineral deposits. Two lec and one 3-hr lab per wk; one 3-day field trip. Prereq: 490 or perm.

530 Mining Exploration Techniques (3 cr). Alt/yrs 78-79. Underground exploration for mining engineers; appl of geol, geochem, geophysical, and statistical methods in exploration; reduction, correlation, and overall interp of data; computer appl. Two lec and one 3-hr lab per wk; one 3-day field trip. Prereq: 490 or perm.

540 Mine Valuation (3 cr). Alt/yrs 79-80. Mine exam and valuation; sampling methods and calculations; determining present value of a deposit.

560 Mine Mgmt (3 cr). Financing, mgmt labor relations, operations, and govt regulations. Prereq: perm.

561 Mine Industrial Engr (3 cr). Alt/yrs 78-79. Industrial engr, operations research, and computer programming; appl to mining engr problems. Prereq: perm.

570 Mine Systems Design (3-6 cr). Alt/yrs 79-80. Integration and synthesis of equipment, methods, and design; use of latest operation research tools to provide a complete mine plan of operation. Prereq: perm.

573 Haulage Systems Design (3 cr). Alt/yrs 78-79. Design criteria in the specification of all pertinent aspects involved in transportation of lump ore on surface or underground. Two lec and one 3-hr lab per wk. Prereq: perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Mining Engineering-Metallurgy—MinMt

John R. Hoskins, Head, Dept. of Mining Engineering and Metallurgy (217 Mines Bldg.). Faculty: Gene E. Bobeck, Samuel S. M. Chan, Donald F. Clifton, William R. Green, Christopher J. Hall, John R. Hoskins, Keith A. Prisbrey.

110 Minerals and Man (3 cr). For nonmajors. Man's past, present, and future dependence on mineral resources; man's exploitation of the earth's nonrenewable resources. May be taken with 111.

111 Mineral World Lab (1 cr). Designed to correlate with and to supplement 110. Five 3-hr labs per semester; four 1-day field trip. Coreq: 110.

200 (s) **Seminar** (0 cr). Appropriate speakers and unscheduled activities relating to the mineral field; required of all lower-div mining and met students. Graded P/F.

400 (s) **Seminar** (0 cr). Appropriate speakers and unscheduled activities relating to the mineral field; required of all upper-div mining and met students. Graded P/F.

600 Doctoral Research and Dissertation (cr arr).

Museology—Museo

Roderick Sprague, Head, Dept. of Sociology/Anthropology (101 Faculty Office Complex West). Faculty: G. Ellis Burcaw (Director, University Museum).

204; ID404 (s) **Special Topics** (cr arr).

299; ID499; ID502 (s) **Directed Study** (cr arr). Prereq: perm.

ID301 Intro to Museology (3 cr) (C). Theory and practice of sc, hist, and art museums. One 1-day and two ½-day field trips.

ID400; ID501 (s) **Seminar** (cr arr). Prereq: perm.

ID402 Interm Museology (3 cr). Intro to tech of museum work. Two lec and one 3-hr lab per wk. One 4-day field trip. Prereq: perm.

WS410 Gallery Procedures (3-6 cr, max 12). WSU FA 410. Work of various kinds at the WSU art museum for all students, regardless of major; flexible hours. Six-twelve hrs of lab per wk. Prereq: perm.

ID450 Adv Museology (cr arr). Museum internship suited to the student's needs. Some travel may be necessary. Prereq: perm.

Music

William A. Billingsley, Director (205 School of Music Bldg.). Faculty: Dorothy T. Barnes, LeRoy O. Bauer, William A. Billingsley, J. Roger Cole, Mary H. DuPree, Stephen R. Folks, Marian T. Frykman, Richard H. Hahn, Sandra L. Hahn, John P. Harbaugh, Harry Johansen, Ronald J. Klimko, Glen R. Lockery, Richard S. Neher, Floyd H. Peterson, Gilbert J. Piger, Robert C. Probasco, Howard A. Robbins, Lynn J. Skinner, Robert J. Spevacek, Charles W. Walton, William C. Wharton.

APPLIED PERFORMANCE STUDIES—MusA

100 (s) **Indiv Instruction** (1 or 3 cr). Max 12 cr for the major performing area in MusA 100, 101, and 201 may be counted toward the B.Mus. degree. All freshmen normally take 100 their first semester. Areas normally offered are voice, piano, organ, harpsichord, harp, violin, viola, cello, string bass, clarinet, saxophone, oboe, flute, bassoon, French horn, trumpet, trombone, baritone, tuba, percussion, and guitar. Special fee course. Consult the School of Music for proficiency requirements for admission to the various levels (MusA 100, 101, 201, 301, 407, and 505). Enrollment may be limited to majors in the School of Music. Prereq: audition and perm of dept.

101 (s) **Indiv Instruction** (1 or 3 cr). Max 12 cr for the major performing area in MusA 100, 101, and 201 may be counted toward the B.Mus. degree. See MusA 100 for description and areas. Prereq: audition by committee and perm of dept.

102 Accompanying (2 cr). Prin of accompanying with the use of keyboard instruments. Prereq: perm.

103 Concert Choir (1 cr, max arr). Three to five rehearsals per wk. Prereq: audition and perm.

104 (s) **Chorus** (1 cr, max arr). Section 1, swing choir; section 2, women's chorus; section 3, mixed chorus. All sections: 1-3 rehearsals per wk. Prereq: perm.

105 (s) **Orchestra** (1 cr, max arr). Three to five rehearsals per wk, with occasional evening rehearsals. Prereq: perm.

106 (s) **Band** (1 cr, max arr). Three to five rehearsals per wk. Prereq: perm.

108 Chamber Orchestra (1 cr, max arr). One to five rehearsals per wk; may incl evening rehearsals. Prereq: perm.

109 Festival Choir (1 cr, max arr). Daily rehearsals; open to all students.

145-146 Piano Class (1 cr). Prereq: perm of dept.

147-148 Voice Class (1 cr). Prereq: perm of dept.

151-152 Guitar Class (1 cr). Prereq: perm of dept.

200 (s) **Seminar** (cr arr). Prereq: perm.

201 (s) **Indiv Instruction** (1 or 3 cr). Max 12 cr for the major performing area in MusA 100, 101, and 201 may be counted toward the B.Mus. degree. See MusA 100 for description and areas. Prereq: audition by committee and perm of dept.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

245-246 Piano Class (1 cr). Prereq: perm of dept.

265 (s) **Chamber Ensemble** (1 cr, max arr). Chamber music performing groups; organized each semester. Prereq: perm.

266 Collegium Musicum (1 cr, max arr). Prereq: perm.

280 Opera Workshop (1 cr, max 4). Analysis, rehearsal, and performance of operatic lit. Prereq: perm.

299 (s) **Directed Study** (cr arr). Prereq: perm.

301 (s) **Indiv Instruction** (1-3 cr, max arr). See MusA 100 for description and areas. Prereq: audition by committee and perm of dept.

302 Accompanying (2 cr). See MusA 102. Prereq: perm.

303 Concert Choir (1 cr, max arr). Three to five rehearsals per wk. Prereq: 4 cr in choral groups, audition, and perm.

304 (s) **Chorus** (1 cr, max arr). See MusA 104. Prereq: 4 cr in choral groups, audition, and perm.

305 (s) **Orchestra** (1 cr, max arr). See MusA 105. Prereq: 4 cr in instrumental groups, audition, and perm.

306 (s) **Band** (1 cr, max arr). See MusA 106. Prereq: 4 cr in instrumental groups, audition, and perm.

308 Chamber Orchestra (1 cr, max arr). See MusA 108. Prereq: 4 cr in instrumental groups, audition, and perm.

309 Festival Choir (1 cr, max arr). See MusA 109. Prereq: 4 cr in choral groups and perm.

365 (s) **Chamber Ensemble** (1 cr, max arr). See MusA 265. Prereq: audition and perm.

366 Collegium Musicum (1 cr, max arr). Prereq: audition and perm.

387 Conducting I (2 cr). Baton tech, score reading, and problems of conductor of large choral and instrumental orgs. Prereq: MusC 122 or MusC 141.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

407 (s) **Indiv Instruction** (1-3 cr, max arr). Not open to undergrads. Limited to grad students who are not concentrating in applied performance studies (who need to earn degree cr in an applied area), and to grad students concentrating in applied performance studies (who need to earn degree cr in a secondary applied area). See MusA 100 for areas offered. Prereq: perm of dept.

480 Opera Workshop (1-3 cr, max 8). See MusA 280. Prereq: 2 cr in MusA 280 or perm.

487 Conducting II (2 cr). Prereq: MusA 387 or perm.

490 Senior Recital (0 cr). Cr is granted under MusA 301. Graded P/F. Prereq: perm of dept.

498 Proseminar (2 cr). Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq:perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

505 (s) **Indiv Instruction** (1-6 cr, max arr). For majors concentrating in musical performance. See MusA 100 for description and areas. Prereq: audition by committee and perm of dept.

507 (s) **Indiv Instruction** (1-3 cr, max arr). For grad students who are studying a major instrument. Not applicable toward degree requirements for students enrolled in the performance emphasis of the M.Mus degree. Prereq: audition by committee; proficiency equivalent to 301 level.

513-514 Seminar in Conducting (1-4 cr, max 8). Prereq: perm.

565 (s) **Chamber Ensemble** (1 cr, max 3). See MusA 265. Prereq: audition and perm.

566 Collegium Musicum (1 cr, max 3). Prereq: audition and perm.

590 Master's Recital (0 cr). Registration for recital related to degree. Cr is granted under MusA 505. Graded P/F. Prereq: perm of dept.

599 (s) **Research** (cr arr). 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 121 or 141. Max 8 cr in any combination of MusC 120, 121-122, 141, 142.

121-122 Elements of Music Theory (4 cr). For minors and students majoring in fields other than music. Singing, playing, dictation, writing scales, intervals, chords, and progressions. Not open for cr to students who have taken MusC 141-142. Max 8 cr in any combination of MusC 120, 121-122, 141, 142. Five lec per wk. Prereq: 121 for 122.

133 Theory Keyboard Lab (1 cr). Fundamentals of keyboard tech as related to theoretical concepts and skills. Coreq: MusC 141.

139-140 Aural Skills I-II (1 cr). Exercises and drill in sight-singing and ear training.

141 Musicianship and Music Lit (3 cr). Primarily for and may be limited to majors. Fundamentals of music; analysis of selected works from each period of music hist. Students who have taken MusH 100, MusC 120, 121, or similar courses, must deduct the previously earned cr on the class permit for MusC 141 when registering. Duplicate cr is not permitted. Prereq: perm of dept; coreq: MusA 145 and MusC 139.

142 Theory of Music I (3 cr). Primarily for and may be limited to majors. Harmonic materials, part-writing skills, and analysis. Prereq: MusC 141; coreq: MusC 140.

149 Rudiments of Music (3 cr, max 6). Flexible content to meet the needs of students. Prereq: perm.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

239-240 Aural Skills III-IV (1 cr).

241 Theory of Music II (3 cr). Primarily for and may be limited to majors. Prereq: MusC 142; coreq: MusC 239 and MusH 321.

242 Theory of Music III (3 cr). Primarily for and may be limited to majors. Prereq: MusC 241; coreq: MusC 240 and MusH 322.

299 (s) **Directed Study** (cr arr). Prereq: perm.

325 Composition (2 cr, max arr). Study and practice of composing with 20th-century tech and devices. Prereq: MusC 242 or perm.

327 Orchestration I (2 cr). Elem prin of transcription and orchestration; emphasis on instrument ranges, idiomatic characteristics, and score prep. Prereq: MusC 242 or perm.

331 Modal Counterpoint (2 cr). Stylistic approach to writing two-part counterpoint; emphasis on the vocal polyphony of the 16th century. Prereq: MusC 242 or perm.

332 Tonal Counterpoint (2 cr) Stylistic approach to writing

counterpoint; emphasis on the *Two-Part Inventions* and *French Suites* of J. S. Bach. Prereq: MusC 242 or perm.

341 Twentieth-Century Music Theory and Lit (4 cr). Tech of composition studied through aural and visual analysis of significant works by 20th-century composers. Prereq: MusC 242 or perm.

345 Theory Review (3 cr). For adv-degree candidates. Summary of subject-matter covered in MusC 141, 142, 241, 242, 341.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

423-424 Adv Composition (2 cr). Continuation of MusC 325. Increasing emphasis on varied media and larger forms, but with value being placed on student's originality. Prereq: MusC 325 or perm.

426 Electronic Music (2 cr, max arr). Tech of musical composition using electronic media such as tape recorders and synthesizers. Prereq: MusC 325 or perm.

427 Orchestration II (2 cr, max arr). Instrumental scoring; orchestral styles of various periods; creativity in orchestral writing. Prereq: MusC 327 or perm.

428 Choral Arranging (2 cr). For music ed students and others generally interested in composition. Devices and tech. Prereq: MusC 122 or 142, or perm.

429 Theoretical Basis of Jazz (2 cr). Harmonic, melodic, rhythmic, and stylistic analysis of principal trends. Prereq: perm.

431 Adv Modal Counterpoint (2 cr). Continuation of MusC 331. Emphasis on three- and four-part vocal polyphony of the 16th century. Prereq: MusC 331 or perm.

432 Adv Tonal Counterpoint (2 cr). Continuation of MusC 332. Emphasis on three- and four-part counterpoint, including the fugue, beginning with the style of the 18th century. Prereq: MusC 332 or perm.

441 Twentieth-Century Techniques (3 cr). Compositional tech of the 20th century; compositional and analyt projects.

442 Musical Analysis (3 cr). Study of traditional forms and analyt tech.

461 Band Arranging (2-4 cr, max 4). Scoring for wind instruments; range, transposition, and tone color. Prereq: MusC 242 or perm.

498 Proseminar (2 cr). Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

513-514 Seminar in Music Theory (1-4 cr, max 8). Prereq: perm.

515-516 Seminar in Composition (1-4 cr, max 8). Prereq: perm.

521 Musical Analysis (3 cr, max 6). Analysis of selected musical compositions. Prereq: perm.

523-524 Counterpoint (2 cr). Adv contrapuntal writing, incl canon and fugue. Prereq: MusC 431.

527 Adv Orchestration (2-4 cr, max 4). Orchestral scoring; recent trends. Prereq: MusC 427 or perm.

599 (s) **Research** (cr arr). Prereq: perm.

HISTORY AND LITERATURE—MusH

100 Music Appreciation (3 cr). 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 lit of music.

144 Hist of Music I (2 cr). Primarily for and may be limited to majors. Medieval period through Renaissance. Prereq: perm of dept; coreq: MusC 142.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

243 Hist of Music II (2 cr). Primarily for and may be limited to majors. Baroque through Rococo period of 18th century. Three lec per wk. Prereq: perm of dept; coreq: MusC 241.

244 Hist of Music III (2 cr). Primarily for and may be limited to majors. Classic through Romantic period of 19th century. Three lec per wk. Prereq: perm of dept; coreq: MusC 242.

299 (s) **Directed Study** (cr arr). Prereq: perm.

321-322 Music in Western Civ (3 cr). Hist of music from early middle ages to the mid-20th century; musical styles in cultural context of each period. These courses may be taken in either order; students may enroll in 322 without having had 321. Prereq: MusH 100 or MusC 141 or perm.

340 American Music (3 cr). Survey, incl native American and European folk influences, early American traditional music, and 20th-century popular and concert music.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

410 Historical Survey of Jazz (2 cr). Origins, sources, evolution, styles, and performers of jazz music.

411 Music in the Medieval World (2 cr). Prereq: perm.

412 Medieval and Renaissance Music (3 cr). Prereq: perm.

413 Music in the Baroque Era (3 cr). Prereq: perm.

414 Rococo and Preclassical Music (2 cr). Prereq: perm.

415 Viennese Classical Period (3 cr). Prereq: perm.

416 Music in the Romantic Era (3 cr). Prereq: perm.

417 Late Nineteenth-Century Music (2 cr). Prereq: perm.

418 Music in the Twentieth Century (3 cr). Prereq: perm.

431-432 Piano Lit (2 cr). Baroque through contemporary period. Prereq: perm.

435 Solo Vocal Lit (2 cr). Baroque through contemporary period. Prereq: perm.

457 Symphonic Music (3 cr). May be taken by students majoring in fields other than music, as well as music majors and minors. Masterworks of symphonic lit. Prereq: perm.

458 Chamber Music Lit (2 cr). May be taken by students majoring in fields other than music, as well as music majors and minors. Masterworks of chamber music lit. Prereq: perm.

459 Opera Lit (3 cr). May be taken by students majoring in fields other than music, as well as music majors and minors. Masterworks of operatic lit. Prereq: perm.

498 Proseminar (2 cr). Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

513-514 Seminar in Music Hist (1-4 cr, max 8). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

MUSIC TEACHING—MusT

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

250 (s) **Instrumental Techniques** (1 cr, max 12). Group instruction. Problems in playing and teaching instruments in elem and

secondary schools. Normally offered in violin, viola, cello, string bass, flute, clarinet, saxophone, oboe, bassoon, French horn, trumpet, trombone, and percussion. Each area may be repeated for cr. Prereq: perm.

251 String Instrument Techniques (1 cr). Group instruction. Problems of playing and teaching stringed instruments in elem and secondary schools. Prereq: perm.

252 Reed Instrument Techniques (1 cr). Group instruction. Problems of playing and teaching clarinet, oboe, and bassoon in elem and secondary schools. Prereq: perm.

253 Brass Instrument Techniques (1 cr). Group instruction. Problems of playing and teaching brass instruments in elem and secondary schools. Prereq: perm.

254 Flute and Percussion Techniques (1 cr). Group instruction. Problems of playing and teaching flute and percussion instruments in elem and secondary schools. Prereq: perm.

286 Instrumental Ensemble Rehearsal Techniques (1 cr). Various tech of rehearsing string, wind, and percussion players in an ensemble. May not be taken concurrently with MusT 386.

299 (s) **Directed Study** (cr arr). Prereq: perm.

381 Elem School Music Methods (3 cr). Same as Ed 381. Curriculum, org, and instructional materials for teaching general classroom music. Two lec and one lab per wk. Must be taken prior to enrolling in Ed 432. Prereq: MusC 120 or satisfactory dem of basic music skills.

383 Prin of Music Teaching (3 cr). Students in the School of Music take this course in lieu of Ed 468. Philosophy, prin, curriculum, and org of the school music prog. Must be taken prior to enrolling in Ed 432. Prereq: MusC 122 or 142.

385 Choral Music in the Secondary School (2 cr). Methods, instructional materials, and tech for teaching choral music in grades 7-12. Two lec and one lab per wk. Must be taken prior to enrolling in Ed 432. Prereq: MusC 122 or 142; prereq or coreq: MusT 383, MusA 387, or perm.

386 Instrumental Music in the Secondary School (2 cr). Methods, instructional materials, and tech for teaching instrumental music in grades 7-12. Two lec and one lab per wk. Must be taken prior to enrolling in Ed 432. Prereq: MusC 122 or 142; prereq or coreq: MusT 383, MusA 387, or perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

433 Piano Pedagogy (2 cr). Methods and materials of teaching piano. Prereq: perm.

437 Vocal Pedagogy (2 cr). Methods and materials of teaching voice. Prereq: perm.

438 (s) **Practicum** (1 cr, max arr). Supervised teaching experience in such areas as applied performance studies, theory, music lit, and music ed. Consult the time schedule of classes for areas currently offered. Prereq: upper-div standing and perm of dept.

441 String Pedagogy (2 cr). Methods and materials of teaching stringed instruments. Prereq: perm.

463 (s) **Instrumental Techniques** (1-3 cr, max 6). Group instruction. Problems involved in the playing and teaching of instruments in elem and secondary schools. Prereq: perm.

466 Marching Band Techniques (1 cr). Tech of drilling; materials for field and street maneuvers; prep of shows. Prereq: MusC 242.

467 Lit for Instrumental Ensembles (2 cr). Chamber music materials suitable for use in schools.

468 Lit for Vocal Ensembles (2 cr). Chamber music materials suitable for use in schools.

481 New Concepts in Elem Music Teaching (3 cr). New and inventive elem music teaching materials and methods.

486 Instrumental Ensemble Rehearsal Techniques (1 cr). See MusT 286 for description.

498 Proseminar (2 cr). Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

513-514 Seminar in Music Teaching (1-4 cr, max 8). Prereq: perm.

562 Choral Lit and Techniques (2 cr). Prereq: MusT 385, MusA 387, or perm.

563 Orchestral Lit and Techniques (2 cr). Prereq: MusT 386, MusA 387, or perm.

564 Band Lit and Techniques (2 cr). Prereq: MusT 386, MusA 387, or perm.

581 (s) **College Music Teaching** (3 cr, max 6). Contemporary teaching tech in one or more of the following fields: theory, music lit, music ed, piano, voice, woodwinds, strings, brass, and percussion. Prereq: perm.

583 School Music Admin (2 cr). Prin underlying sound policies in the supervision and admin of school music. Prereq: one yr of teaching experience or perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

GENERAL—MusX

140 Convocation (0 cr). For majors. Attendance at designated musical events. Graded P/F.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

283-284 Diction for Singers (2 cr). 283: German. 284: French.

299 (s) **Directed Study** (cr arr). Prereq: perm.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

469 Research Techniques in Music (2 cr). Prin of research design and tech. Prereq: perm.

498 Proseminar (2 cr). Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

511 Intro to Music Scholarship (2 cr). Orientation to graduate study; bibliography and research procedures.

599 (s) **Research** (cr arr). Prereq: perm.

Native American Affairs—NatAm

Jack R. Ridley, Director (Ctr. for Nat. Am. Dev., 730 Deakin Ave.). Faculty: John S. Morris, Jack R. Ridley.

150 Reservational Lands and Resources in Idaho (2 cr). Historical dev of native American reservations in Idaho; land use, econ classification, and the role of tribal govt and the Bureau of Indian Affairs.

160 Fundamentals of Reservation Mgmt (3 cr). Appl of basic business prin to natural resource dev in native American communities by native Americans.

200; 400; 501 (s) **Seminar** (cr arr). Prereq: perm.

203; 403; 503 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

299; 499; 502 (s) **Directed Study** (cr arr). Prereq: perm.

Naval Science—NS

Richard C. Stockton, Dept. Head (101 Navy Bldg.). Faculty: Dana C. Covey, Michael E. McCuddin, William P. McElyea, Richard G. McHugh, Richard K. Scott, Richard C. Stockton.

100 Drill/Lab (0 cr). Required of all Navy-Marine Corps OEP students. One 1-hr lab per wk.

101 Intro to Naval Science (2 cr). Roles of major elements of naval service; design and structure of ships.

102 Ships Systems I (3 cr). Intro to damage control and propulsion systems of naval ships; nuclear and conventional power.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

201 Ships Systems II (3 cr). Naval weapons: ballistics, control, propulsion, components, systems analysis.

202 Seapower and Maritime Affairs (2 cr). U.S. Navy and merchant marine seapower, dev, and policy.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

301 Navigation (3 cr). Theory, prin, and procedures of terrestrial and celestial navigation. Three lec and one 1-hr lab per wk.

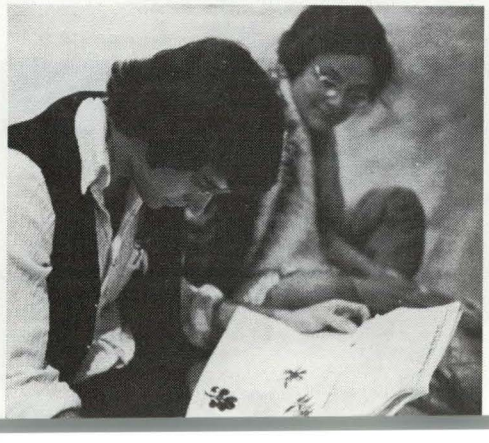
302 Naval Operations (3 cr). Naval operations and tactics, relative motion, "rules of the nautical road." Three lec and one 1-hr lab per wk. Prereq: 301.

311 Evolution of Warfare (3 cr). Alt/yrs 79-80. Evolution of war through tactics; strategy from Sun Tzu to J. F. C. Fuller. Three lec and one 1-hr lab per wk.

401 Naval Org and Mgmt (3 cr). Theories of mgmt and mgmt resources, motivational theories and leadership.

402 Naval Leadership (3 cr). Prin and styles of leadership, personal attributes, and U.C.M.J.

412 Amphibious Operations (3 cr). Alt/yrs 78-79. Amphibious doctrine from Gallipoli to the *Mayaguez*.



451 Navy Flight Indoctrination Program I (2 cr). Includes 30 hrs intro to naval aviation emphasizing org and mission, navigation, prin of flight, types of aircraft, and duties of naval aviators and flight officers.

452 Navy Flight Indoctrination Program II (2 cr). Includes 20 hrs ground school, 15 hrs flying time. Prereq: jr or sr midshipman and perm of dept.

Nuclear Engineering—NE

William P. Barnes and Kermit L. Holman, Cochairmen, Nuclear Engineering Committee (202 Gauss Engr. Lab.). Faculty: Jasper R. Avery, William P. Barnes, Jack I. Hagen.

RELATED FIELDS: For other courses offered in the nuclear field, see Chem 416, Chem 513, Phys 465, and Phys WS&RS565.

R120 Fundamental Concepts of Nuclear Engr (3 cr). Basic concepts; intro to atomic structure, nuclear reactions, fission process, nuclear reactor fundamentals and types.

R220 Analysis of Nuclear Engr Systems I (3 cr). Primarily for technologists. Elem quantitative analysis, with emphasis on the qual aspects of nuclear engr systems; ore processing, fuel element fabrication, materials selection, shielding, and control. Prereq: R120 or perm.

R221 Analysis of Nuclear Engr Systems II (3 cr). Primarily for technologists. Continuation of R220. Head removal, reactor design, fuel recycle, and waste disposal. Prereq: R220 or perm.

223 Intro to Nuclear Engr (2-3 cr). For students in all fields, particularly nonengineers. Broad nonquantitative survey of nuclear engr: production of useful energy from nuclear fuel, disposal of nuclear wastes, and economical and social aspects.

360 Nuclear Reactor Engr I (3 cr). Nuclear and atomic physics, measurements, health physics, nuclear reactor theory, shielding, and control. Two lec and one 2-hr lab per wk. Prereq: perm.

380 Fallout Shelter Analysis (2 cr). Primarily for practicing engineers and architects. Determination of radiological protection of buildings when subjected to nuclear fallout. Prereq: perm.

404 (s) **Special Topics** (cr arr).

460 Nuclear Reactor Engr II (3 cr). Nuclear reactor design problems in thermodynamics, fluid flow, heat transfer, fuel prep, waste disposal, and materials selection; disc of reactor types. Prereq: 360 or perm.

R462 Nuclear Reactor Codes and Standards (3 cr). ASME nuclear codes and standards; their contribution to nuclear power plant design and operation. (Cr in this course may not be counted toward a degree.)

R470 Nuclear Reactor Safety (3 cr). Light water reactor safety: eval methods, system disturbances, safety criteria, containment, NRC licensing process, and computer codes for nuclear safety analysis; intro to liquid metal safety. Prereq: perm.

473 Nuclear Instrumentation (3 cr). Alt/yrs 79-80. Radiation detection instruments and associated circuitry as applied to nuclear engr. Prereq: EE 314 or equiv.

R500 Master's Research and Thesis (cr arr).

R501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

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.

R540 Fusion Energy (3 cr). Basic concepts and experimental approaches to fusion, elem plasma theory, plasma oscillations, heating; fusion reactor technology dev long range prospects.

550 Topics in Adv Nuclear Engr (3 cr). Prereq: perm.

WS556 Nuclear Engr Lab (2 cr). WSU ChE 516. Detection and measurement of phenomena involving neutrons in reactor assemblies; appl of theory of neutron distribution and control. Prereq: perm.

R565 Reactor Engr (3 cr). Radiation shielding, materials, instrumentation and controls, separation of stable isotopes, chem separation and processing, special tech. Prereq: Phys ID566 or perm.

R580 Waste Mgmt and Nuclear Fuel Reprocessing (3 cr). Head-end processing, solvent extraction processes, ion exchange processes, precipitation processes, and effluent disposal.

Office Administration—OAd

James A. Bikkie, Director, Division of Vocational Teacher Education (210 Educ. Bldg.). Faculty: Geraldine A. Dacres, Robert M. Kessel, Jean C. Rudolph.

101-102-103 Typewriting I-II-III (2 cr). OAd 101: dev of skill sufficient for personal use. OAd 102: speed and control to occupational competence levels. OAd 103: occupational competence, incl correspondence, manuscripts, legal documents, special problems.

115-116 Shorthand I-II (4 cr). OAd 115: theory of Gregg shorthand simplified. OAd 116: dictation and intro to transcription.

185 Machine Calculation (2 cr). Operation of commonly used office adding-calculating machines for the solution of business problems.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

271-272 Shorthand III-IV (3 cr). OAd 271: speed dev. OAd 272: transcription skill to occupational competency level. Prereq: perm.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

C312 Local Govt Records Mgmt (2 cr). Primarily for city clerks and other city officials. Records mgmt, microfilming, filing, and filing equipment useful in city govt record-keeping functions; legal requirements of destruction and disposal of city records in Idaho; practices of a number of city officials in Idaho in indexing city council meetings and maintaining city council files.

313 Office Mgmt (2 cr). Appl of generally accepted prin to admin services.

395-396 Secretarial Procedures (3 cr). OAd 395: admin secretarial procedures and responsibilities; forms analysis; records mgmt. OAd 396: adv dictation and transcription. Prereq: perm.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

Philosophy—Phil

Francis Seaman, Chairman (111 Admin. Bldg.). Faculty: Nicholas F. Gier, Marvin C. Henberg, Francis Seaman.

101 Intro to Philosophy: Types of Philosophy (3 cr). Not open to students who have taken 103. Chief types of philosophic thought through a study of their more distinguished representatives; Plato, Lucretius, Descartes, Berkeley, and James.

103 Intro to Philosophy: Prin and Problems (3 cr). Not open to students who have taken 101. Nature of philosophy through a consideration of certain key philosophic questions reflecting student interest; explored by methods appropriate to their solution.

107 Critical Thinking (1 cr). Eval by informal methods of arguments current in the market place. Not open to students who have taken 211. After this course, 211 carries 2 cr.

111 Intro to the Philosophy of Religion (2-3 cr). Overview of major world religions with special attention to similarities and differences in their conceptions of man and his relation to nature and to the divine.

201 Ethics (3 cr) (C). Dev of ethical thought. Prereq: 101 or 103 or soph standing.

204 (s) **Special Topics** (cr arr).

211 Logic (3 cr). Methods of reasoning; function of logic in the methods of sc. Prereq: 101 or 103 or soph standing.

305 Philosophy of Religion (3 cr). Current dialogue between the religious and the secular.

309 Hist of Ancient Philosophy (3 cr) (C). Philosophic and political thought from the early Greeks through the Middle Ages.

310 Hist of Modern Philosophy (3 cr) (C). Philosophic and political thought from Descartes through Kant.

400 (s) **Seminar** (cr arr). Prereq: perm.

401 Philosophy of the Arts (3 cr). Chief conceptions of the nature of the arts and their role in society.

403 Adv Logic (3 cr). Ideas and tech of contemporary logic.

404 (s) **Special Topics** (cr arr).

411 Social Philosophy (3 cr). Philosophical theories of the origin and nature of society and of the state.

412 Philosophy of Science (3 cr). Basic concepts of modern sc.

414 Ethical Theory (3 cr). Main points of view.

415-416 (s) **Contemporary Philosophy** (3 cr). Movements and figures of the 20th century such as logical positivism, linguistic analysis, Russell, Wittgenstein, and Sartre.

421 Existentialism (3 cr). Readings in such writers as Kierkegaard, Nietzsche, Camus, and Sartre.

422 Philosophical Ideas in Recent Lit (3 cr). Ethical, social, and political trend; Nietzsche, Stein, Sartre, Maugham, Joyce, Hardy.

425 American Philosophy (3 cr). Philosophical ideas of the U.S.; emphasis on period since 1875.

431 Theory of Knowledge (3 cr). Analysis of the nature of knowledge; survey of various philosophical positions on the sources and extent of what we know.

432 India's Philosophies (3 cr). Survey of the Indian philosophical tradition, incl Upanishads, Bhagavad Gita, Buddhism, Nyaya-Vaiseshika, Samkhya-Yoga, and Vedanta.

442 Philosophy of Mind (3 cr). Recent disc on the concept of mind, action, emotion, and private language; identity theory.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Normally offered in hist of philosophy, value theory, contemporary philosophy, philosophy of sc, metaphysics, and medieval philosophy. Prereq: perm.

502 (s) **Directed Study** (cr arr). Normally offered in hist of philosophy, value theory, contemporary philosophy, philosophy of sc, and metaphysics. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Photography—Photo

Don H. Coombs, Director, School of Communication (Communication Bldg.). Faculty: William P. Woolston.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

281 Understanding Photography (3 cr). Basic skills of camera handling and darkroom tech; emphasis on learning to see. Two lec and two 3-hr labs per wk.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

301 Hist of Photography (3 cr) (401). Dev of photography in its various forms. Prereq: 281 or perm.

381 Adv Photography (4 cr). Refining photographic skills; zone

system; group critique. Two lec and two 3-hr labs per wk. Prereq: 281.

481 Experimental Photography (3 cr). Investigation of experimental uses of the medium, incl color and nonsilver tech. Two lec and two 3-hr labs per wk. Prereq: 381.

485 Photojournalism (3 cr). Newspaper and magazine photography. Two lec and two 3-hr labs per wk. Prereq: 281 or perm.

Physical Education—PE

Leon G. Green, Director, Div. of Health, Physical Education and Recreation (203 Mem. Gym). Faculty: Edith Betts, Sherry D. Buickel, Leon G. Green, Judith A. Haas, Chester D. Hall, Bonnie J. Hultstrand, Michael W. Keller, Eric B. Kirkland, Calvin W. Lathen, Douglas MacFarlane, Dwaine J. Marten, JoDean Moore, Roger A. Norris, Hazel C. Peterson, Glen H. Porter, Susan M. Tendy, Charles J. Thompson, Diane B. Walker, Robert K. Whitehead, Virginia Wolf.

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 first of the semester to determine the student's level of ability. See general academic regulation "J-3-b" in part 3 for requirements in physical ed.

105 (s) **Dance** (1 cr, max arr). See Dan 105.

106 (s) **Indiv and Dual Sports** (1 cr, max arr). Bowling, racket sports, fencing, golf, gymnastics, conditioning, backpacking, biking, cross-country skiing, etc. Two days of field trips may be a part of the course requirements for such activities as backpacking, biking, etc. Two hrs per wk. Graded P/F.

107 (s) **Team Sports** (1 cr, max arr). Field sports, volleyball, basketball, and softball. Two hrs per wk. Graded P/F.

108 (s) **Swimming** (1 cr, max arr). All levels of proficiency, incl lifesaving, diving, and scuba. Two hrs per wk. Graded P/F.

PROFESSIONAL COURSES

111 Fundamentals of Movement (2 cr). Physical prin, kinesthetic patterns, and rhythmic structure involved in fundamental movement activities. One lec and two labs per wk.

115 Team Sports Backgrounds (2 cr). Field sports, softball, volleyball, and basketball. Four hrs per wk.

116-117 Indiv Sports Backgrounds I-II (2 cr). PE 116: racket games and golf. PE 117: bowling, archery, track and field. Four hrs per wk.

126 Weight Training and Conditioning (1 cr). Two lec-labs per wk.

138 Swimming (1 cr). Adv swimming and diving. Two hrs per wk. Prereq: proficiency or perm.

139 Gymnastics (2 cr). Teaching tech and skills of gymnastics. One lec and one 2-hr lab per wk.

141 Wrestling (1 cr). Two lec-labs per wk.

142 Tumbling and Floor Exercise (2 cr). Emphasis on skill dev and progressions from elem through high school. One lec and two labs per wk.

145 Intro to Physical Ed (2 cr). Survey, philosophy, aims, and objectives.

C147 Hist of Physical Ed (2 cr). Backgrounds and dev; trends in various countries; modern trends in the U.S.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

226 Officiating Women's Sports (1 cr). Officiating in team and indiv sports (incl 20 hrs officiating in the intramural program). Section A: team sports (hockey, volleyball, basketball); section B: indiv sports (gymnastics, swimming, track and field).

243 Highly Organized Games (2 cr). Tech and skills of games of high org and lead up activities. One lec and two labs per wk.

252 Elem School Physical Ed (2-3 cr) (C). Org and teaching methods. Two lec and one lab per wk. Students who register for 3 cr must complete one hr of observation per wk in public schools in addition to normal course requirements.

271 Interp of Physical Ed, Health, and Rec (3 cr). Importance of these related fields to general ed from the Greeks to the present day.

299 (s) **Directed Study** (cr arr). Prereq: perm.

317 (s) **Recreational Skills** (1 cr, max 3). For elem and secondary school teachers and rec leaders, with basic skills and methods of teaching. Areas normally offered are fly fishing, markmanship, and scuba. One lec and three hrs lab per wk per cr. Students may enroll for more than one of the areas. Prereq: perm.

322 Teaching Indiv Sports (2 cr). Methods for majors and minors.

323 Teaching Team Sports (2 cr). Methods for majors and minors. Prereq: 322.

326 Drill Team (2 cr). Alt/yrs. Tech, org, and training of drill teams.

341 Basketball Coaching Methods (2 cr).

342 Baseball Coaching Methods (2 cr).

343 Track Coaching Methods (2 cr).

344 Football Coaching Methods (2 cr).

C&X371 Prin of Physical Ed (3 cr). Interp of aims and objectives.

387 Intramural and Athletic Officiating (3 cr). Intramural programs in schools; rules and methods of officiating athletic contests; incl 30 hrs of officiating in the intramural dept.

400 (s) **Seminar** (cr arr). Prereq: oerm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

418 Physiology of Exercise (3 cr). Effects of physical activity on the circulatory, respiratory, and other systems. Two lec and one 2-hr lab per wk. Prereq: Zool 119.

419 Human Kinesiology (3 cr). Body movement; anatomical and mech analysis. Prereq: Zool 119.

424 Adapted Physical Ed (2 cr). Adapting physical ed progs to meet indiv needs.

425 Sport in American Society (3 cr). Nature and value of sport with social, political, and econ implications; controlling orgs; influence of professional sport on amateur sport; place of sport in ed; and influences of media on sport.

427 Methods and Materials in Physical Ed (2 cr). For majors. Practices, problems, prog planning, and teaching methods.

430 Adv Techniques and Skills (2 cr). Designed to offer opportunity for increasing knowledge, skill, and teaching techs in specific motor activities.

450 Coaching Clinic (1-2 cr, max 2). Alternate summers. Procedures and tech in coaching high school and college sports. Consult the summer bulletin for info.

467 Physical Ed and Rec for the Handicapped (3 cr). Adaptation of these prog to the mentally and physically handicapped child.

481 Tests and Measurements (3 cr). Testing in physical ed. Prereq: Psych 100 or 205.

496 Org and Admin (3 cr) (C). Health and physical ed prog in the public schools.

497 Sports and Athletic Problems (3 cr). Scheduling, facilities, equipment, maintenance, budgeting, and public relations in the school. Section A: men; section B: women.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

506 Foundations of Motor Skills (3 cr). Appl of psych, kinesiological, and mech prin for an understanding of motor activity.

518 Adv Prin in Physiological Assessments of Human Performance (3 cr). Prin and methods essential to the experimental approach to physiological performance problems. Two lec and one lab per wk.

520 Hist of Physical Ed and Sport (3 cr). Cultural, philosophical, and comparative study of physical ed and sport throughout civ; emphasis on background influences on U.S. progs.

544 Progam Dev (3 cr). Developing physical ed and sport prog; emphasis on new methods and curriculum content. Two days of field trips may be required.

550 The Psycho-Social Dimensions of Sport (3 cr). Psych and sociological aspects of sport as they relate to player, coach, and spectators; emphasis on sport and its relationship to personality characteristics and social stratification, discrimination, and change.

581 Research in Physical Activity, Theory, and Design (1-6 cr, max 6). Prin of scientific inquiry; appl to the study of physical activity; indiv research projects.

591 Social Basis of the Profession (3 cr). Democratic philosophy for physical ed, health ed, and rec; prin and objectives as related to the dev of the indiv and man's cultural heritage.

596 Adv Org and Admin (3 cr). Policies and problems; classification of children, time schedule, teaching staff, training, load, office org and admin, state laws, and finances.

497 (s) **Practicum** (cr arr). Appl of theories and tech. Graded P/F. Prereq: perm.

598 (s) **Internship** (cr arr). Supervised field experience in an appropriate public or private agency. Graded P/F. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Physics—Phys

Henry Willmes, Dept. Chairman (13 Phys. Sc. Bldg.). Faculty: Michael A. Browne, Lawrence W. Davis, Philip A. Deutchman, Thomas E. Ingerson, Lawrence H. Johnston, Robert J. Kearney, George Patsakos, Edson R. Peck, Everett F. Sieckmann, Henry Willmes.

101 Fundamentals of Physical Science (4 cr). For students in nontechnical fields. Basic physical laws and concepts, and their appls. Three lec and one 2-hr lab per wk.

103 General Astronomy (3 cr) (304). Nonmathematical descriptive and physical astronomy; dev of astronomical thought; properties and evolution of the solar system, stars, galaxies, and the universe.

104 Astronomy Lab (1 cr) (314). Naked eye, telescopic, and photographic observations of constellations, stars, and planets. One 3-hr lab per wk; some evening meetings. Prereq or coreq: 103.

105 Physics and Society (3 cr). Nonmath investigation of the interaction of sc and society; emphasis on current topics, incl radioactivity, pollution, transportation, comm, weapons, power generation, and ecology; exploration of the ethical, technological, and econ impact of sc. Recommended companion course: 106.

106 Physics and Society Lab (1 cr). Lab to accompany 105. One 3-hr lab per wk.

107 Physics of Music and Sound (3 cr). Physical prin in production of musical tones of various sound systems; physical bases of musical instrumentation, synthesizers, microphones, amplifiers, recording systems, AM-FM modulation, stereophonic and quadraphonic systems. No background required beyond high school math.

108 Physics of Music and Sound Lab (1 cr). Lab to accompany 107. One 3-hr lab per wk. Coreq: 107.

111 Elem Physics (2-3 cr). Not open to students who have taken 113 or 220. Survey of classical and modern physics for nonscience majors. Three lec and one 2-hr lab per wk.

113-114 General Physics (3 cr) (C, 113 only). Phys 113 is not open to students who have taken 111 or 220; 114 is not open to students who have taken 221. Phys 113: mechanics, sound, and heat. Phys 114: magnetism, electricity, light, and modern physics. Three lec and one rec per wk. Prereq: Math 140; 113 for 114.

115-116 General Physics Lab (1 cr). Lab to accompany 113-114. One 2-hr lab per wk.

R205-R206-R207 Prin of Physics (3 cr). Phys R205: mechanics, Phys R206: elec and magnetism. Phys R207: heat, sound, and optics. Prereq: Math R181 and perm.

R208-R209 Intro to Radiological Health Physics (3 cr). Sources, properties, detection, and measurement of radiation; interaction of radiation with matter and with biol systems; shielding; contamination, waste disposal; control of radiation hazards. Prereq: 113-114.

220 Engr Physics I—Mechanics (3 cr). Basics of mechanics; statics of rigid bodies; one- and two-dimensional linear and rotational motion; simple harmonic motion; Newton's law of gravitation; problems on static forces and torques, and the motion of general bodies under the laws of simple mechanics. Two lec, one 2-hr lab, and one quiz section per wk. Prereq or coreq: Math 180.

221 Engr Physics II—Electricity and Magnetism (3 cr). Coulomb's, Ampere's, Faraday's and Gauss's laws of electricity and magnetism; simple elec circuits; elem electronics; Maxwell's equations; electromagnetic radiation; magnetic materials. Two lec, one 2-hr lab, and one quiz section per wk. Prereq: 220, or ES 211, or equiv; prereq or coreq: Math 190.

222 Engr Physics III—Wave Motion (3 cr). Properties of wave motion with appl to sound, optics, and elem atomic physics; reflection and refraction; geometrical and physical optics, lasers, interference and diffraction, constr of telescopes and microscopes, color, polarization, optical activity, electro-optical effects, elem acoustics, propagation of sound waves, interference and diffraction of sound, and kinetic theory. Two lec, one 2-hr lab, and one quiz section per wk. Prereq: 221; prereq or coreq: Math 200.

307 Sound Waves and Acoustics (3 cr). Sources of sound, propagation of sound waves through elastic media, and architectural acoustics. Prereq: 114 or 222, Math 200, or perm.

308 Acoustics Lab (1 cr). Basic experiments in physical, physiological, musical, and architectural acoustics. One 3-hr lab per wk. Coreq: 307.

R309 Fundamentals of Radiation Biophysics (3 cr). Nuclear physics, interaction of radiation with matter, detection of radiation, radiation dose limits, theory of ionization, dosimetry, dosimetry tech, biol and medical effects of radiation, radiation shielding, radiation protection standards, counting stats, and related topics. Prereq: perm.

R311 Health Physics in Industrial Safety (3 cr). Basic concepts of physics, biol, and radiation control as related to personnel protection from ionizing radiation.

315 Biophysics (3 cr). Intro to the physics of biol processes and photobiology; interaction of radiation with biol systems; intramolecular and intermolecular forces and their relation to biol structure; methods of investigating living matter, incl X-ray diffraction, fluorescence and mangetic resonance. Prereq: 113-114 or equiv; Biol 201 recommended.

R317 Electronics (3 cr). Electron ballistics, vacuum and gaseous tubes. Prereq: perm.

321-322 Analyt Mechanics (3 cr). Stats; kinematics and dynamics of a particle; system of particles; rigid continuous media; intro to Lagrange's equations. Prereq: 114 or 222, and Math 200.

330 Energy Sources (3 cr). Physics of existing and ultimate sources of energy; emphasis on solar and wind energy. Prereq: 220-221 or 113-114, and Math 180.

341-342 Electricity and Magnetism (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: 114 or 222, and Math 200.

343 Electricity and Magnetism Lab (1 cr). Lab to accompany 342. Use, calibration, and care of precision elec engr instruments. One 3-hr lab per wk.

351 Elem Quantum Mechanics (3 cr). Methods; one-dimensional harmonic oscillator, free particle, rectangular potential barrier, hydrogen atom, and perturbation theory. Prereq: 360; coreq: 322.

360 Intro to Modern Physics—Engr Physics IV (3 cr). Fundamentals of qual and quantitative description of atomic and nuclear physics, quantum theory, radioactivity, relativity, fusion and fission, spectra, X-rays, neutron physics, elem particles, and solid state. Prereq: 114 or coreq: 222.

361 Intro to Modern Physics Lab (1 cr). Lab to accompany 360. One 3-hr lab per wk.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

411-412 Physical Instrumentation I-II (3 cr). Methods and instruments used in experimental physics; electronic tech; design problems in electronic measurement of physical quantities encountered in research. Two lec and one 3-hr lab per wk. Prereq: 222 and Math 200 for 411; 411 for 412.

413 Adv Physics Lab (2 cr). Two 3-hr labs per wk. Prereq or coreq: 412.

431-432 Thermodynamics and Kinetic Theory (3 cr). Laws of thermodynamics, kinetic theory, and their appl to topics in physics. Coreq: 360.

443 Optics (3 cr). Geometrical optics and photometry, interference, diffraction, double refraction, and polarization; appl to modern optical instruments. Prereq: 114 or 222, and Math 200.

444 Quantum Optics (3 cr). Theory and appl of lasers, optical spectrum analyzers, electro-optic modulators, and detectors; modern optical concepts and tech; Gaussian beams and optical resonators, interaction of radiation and quantized matter, nonlinear optical effects, and laser spectroscopy. Prereq: 221-222 or 114, and Math 180; coreq: 446.

445 Optics Lab (1 cr). Lab to accompany 443. One 3-hr lab per wk.

446 Quantum Optics Lab (1 cr). Lab to accompany 444. One 3-hr lab per wk.

463-R464 Intro to Solid State (3 cr). Physics of bulk matter; structure and types of solids, elastic and thermal properties of solids, elec and magnetic properties of solids, theory of conduction in metals and semiconductors. Coreq: 322.

465 Intro to Nuclear Physics (3 cr). Elem particle, structure of the nucleus, processes of transformation, interaction of nuclear radiation with matter, nuclear reactions, particle accelerators, fission, nuclear reactors, and cosmic rays. Prereq: 360.

466 Intro to Nuclear Physics Lab (1 cr). Lab to accompany 465. One 3-hr lab per wk.

R471 Intro to Theoretical Physics (3 cr). Vector and tensor methods in conjunction with Newtonian and Lagrangian methods in solving problems in mech systems. Prereq: general physics, differential equations, and perm.

485 Astrophysics (3 cr). Structure and evolution of stars and star systems; celestial mechanics; special and general relativity; cosmology. Prereq: 103, 360, Math 200, or perm.

486 Adv Astronomy Lab (1 cr). Adv professional work in experimental astronomy; photography, photometry, spectrometry, radio astronomy. Prereq: 104 or perm.

491 Proseminar (1 cr). Recent dev. Prereq: sr standing in physics.

497 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

498 Research (1-6 cr, max 6). Undergrad thesis. Prereq: jr standing in physics and perm of dept.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

R506 Radiological Shielding and Design Concepts (3 cr). Radiation shielding and engr design prin of materials, structures, and facilities. Prereq: basic differential and integral calculus, and perm.

507-508 Modern Techniques of Science Instruction in Physics (2 cr). Same as Ed 587-588. Emphasis on extent and nature of subject-matter material for secondary schools and colleges.

511-512 Techniques of Experimental Physics (3 cr). Dev of experimental tech and skills in active research fields; foundation for any field of physics. Nine hrs of lab per wk. Prereq: 412 and perm.

R517 Radiation Dosimetry Instrumentation (3 cr). Radiation detection methods; stats, instrumentation, and dose determination; emphasis on radiation protection.

R518 Radiation Biol (3 cr). Mechanisms and patterns of energy disposition by ionizing radiation in biol systems.

R519 Radiation Physiology (3 cr). Selected topics from human physiology and methods of internal dosimetry. Prereq: radiation biol and calculus.

521 Adv Mechanics (3 cr). Classical mechanics; Lagrange's and Hamilton's prin, 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: 322.

531 Statistical Mechanics (3 cr). Classical statistical mechanics of Maxwell, Boltzmann, and Gibbs; Maxwell-Boltzmann distribution law; Boltzmann's H-theorem, quantum statistical mechanics; Bose-Einstein and Fermi-Dirac stats; appl to problems in themodynamics. Prereq: 431, 551, or perm.

541-542 Electromagnetic Theory (3 cr). Incl 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: 322, 342.

551-552; 553 Quantum Mechanics (3 cr). Phys 551-552; physical basis; Schroedinger wave formulation, Heisenberg matrix formulation, transformation theory, approximation methods, radiation theory, theory of scattering; appl to atomic systems. Phys 553: relativistic quantum mechanics, field theory and quantum electrodynamics; appl to theory of radiation, pair production, and scattering. Prereq: 332, 360 for 551-552; 552 for 553.

ID561 Atomic Spectra and Atomic Structure (3 cr). Experimental methods for the production and investigation of spectra, interp of spectral series, stationary states, spinning electrons and fine-line structure, and vector models; Zeeman and Stark effects; intensity of spectral lines. Prereq: 351 or 551.

ID562 Molecular Spectra (3 cr). Molecular spectra and their relations to molecular strcture; emphasis on diatomic and triatomic molecules. Prereq: ID561 or perm.

563-564 Solid State Physics (3 cr). Modern theory of metals, semiconductors, and insulators; crystal structure, thermal, elec, and magnetic properties of solids, band theory of solids, crystal imperfections, semiconductors, superconductivity, and photoconductivity. Prereq: 342; prereq or coreq: 551.

WS&R565-ID566 Nuclear Physics (3 cr). Nuclei and nuclear interaction from a theoretical and experimental viewpoint, properties of nuclei, two-body problems, complex nuclei, nuclear spectroscopy, nuclear reactions, interaction of nuclei with radiation, beta decay, nuclear shell structure, nuclear models, mesons and meson theory; topics in high energy physics. Prereq: 465, and 351 or 551.

571-572 Theoretical Physics (3 cr). Methods and problems. Prereq: 322 or perm.

573 Physical Appl of Group Theory (3 cr). Intro to group theory with appl to atoms, molecules, and solids; no previous knowledge of group theory assumed. Prereq: 551 or equiv.

581 (s) **Topics in Adv Physics** (1-9 cr, max 9). Topics of interest to students and staff. Three lec per wk.

R585-586 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.

R587 Reactor Physics for Engineers (3 cr). Review of nuclear physics, nuclear fission, chain reaction, and reactor theory. Prereq: Math 310 or equiv.

R588 Experimental Nuclear Physics (3 cr). Experimental methods of interp of experimental measurements to determine the static and dynamic properties of nuclei. Prereq: 360 and perm.

R589 Adv Reactor Theory (3 cr). Integrodifferential Boltzmann equation, integral Boltzmann equation; Pn and double Pn approximation; diffusion theory as obtained from transport theory; microscopic heterogeneous reactor theory, small source theory; reactor kinetics; perturbation theory; burnable poisons and control rod theory. Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Physiology

Fraculty: Wayne S. Belles, Arthur A. Boe, Richard C. Bull, George E. Burrows, C. Seymour Card, Ross E. Christian, Joseph G. Cloud, Donald L. Crawford, Steven L. Davis, Victor P. Eroschenko, Homer J. Ferguson, J. Preston Jones, Gary A. Lee, Duane J. Le Tourneau, Glenn C. Lewis, Donald J. Makus, Thomas A. McKean, Rodney A. Mead, Glen A. Murray, Lawrence E. O'Keeffe, Glen H. Porter, Robert C. Ritter, Lorin W. Roberts, Arthur W. Rourke, R. Garth Sasser, Howard W. Smith, Peter J. South, Mary W. Stock.

Teaching and research prog in physiology are available in several colleges and depts of the university. Master's and doctoral prog with concentration in animal or plant physiology are available through the Depts of Animal Sciences, Biological Sciences, and Plant and Soil 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 course sections.

ANIMAL PHYSIOLOGY

AnSc **WS413 Physiology of Lactation** (3 cr).

AnSc **451 Endocrine Physiology** (3 cr).

AnSc **452 Physiology of Reproduction and Lactation** (3 cr).

AnSc **453 Physiology of Reproduction and Lactation Lab** (1 cr).

AnSc **ID454 Artificial Insemination and Pregnancy Detection** (2 cr).

AnSc **ID513 Microbiol and Physiology of Ruminant Nutrition** (3 cr).

AnSc **514 Physiology of Nonruminant Nutrition** (3 cr).

AnSc **WS520 Seminar in Animal Physicology** (1 cr, max arr).

AnSc **WS526 Adv Reproduction** (4 cr).

AnSc **551 Adv Endocrine Physiology** (3 cr).

Bact **503 Physiology of Bacteria** (2-4 cr).

Ent **ID484 Insect Anatomy and Physiology** (4 cr).

Ent **ID582 Insect Physiological Ecology** (4 cr).

MedSc **ID&WS512 Mechanisms in Physiology and Pharmacology** (4 cr).

MedSc **ID&WS532 Nervous Systems** (5 cr).

PE **418 Physiology of Exercise** (3 cr).

PE **518 Adv Prin of Physiological Assessments of Human Performance** (3 cr).

Psych **441 Physiological Psych** (3 cr).

VS **371 Anatomy and Physiology** (4 cr).

VS **516 Methods of Animal Experimentation** (4 cr).

Zool **119 Human Anatomy and Physiology** (5 cr).

Zool **411 Comparative Vertebrate Reproduction** (3 cr).

Zool **412 Comparative Vertebrate Reproduction Lab** (2 cr).

Zool **414 Cell Physiology** (3 cr).

Zool **415 Cell Physiology Lab** (2 cr).

Zool **416 Mammalian Physiology** (4 cr).

Zool **417 Endocrine Physiology** (3 cr).

Zool **513 Comparative Animal Physiology** (3 cr).

PLANT PHYSIOLOGY

Biochem **486 Plant Biochem** (3 cr).

Bot **311 Plant Physiology** (3 cr).

Bot **312 Plant Physiology Lab** (2 cr).

Bot **413 Mineral Nutrition** (3 cr).

Bot **512 Plant Growth Substances** (3 cr).

PlSc **401 Crop Physiology** (3 cr).

PlSc **405 Biol of Weeds** (3 cr).

PlSc **461 Pomology** (3 cr).

PlSc **517 Tree Physiology** (3 cr).

PlSc **518 Plant Stress Physiology** (2 cr).

PlSc **ID519 Physiology of Flowering** (2 cr).

PlSc **WS535 Physiology and Genetics of Parasitism** (3 cr).

PlSc **WS536 Physiology and Genetics of Parasitism Lab** (2 cr).

PlSc **538 Properties and Function of Herbicides** (2 cr).

PlSc **569 Seed Physiology** (2 cr).

Soils **446 Soil Fertility** (3 cr).

Soils **448 Mineral Nutrition** (3 cr).

Soils **ID515 Chem of Plant Nutrients** (3 cr).

Soils **ID&WS546 Adv Soil Fertility** (3 cr).

Plant Science—PlSc

Lucas Calpouzos, Head, Dept. of Plant and Soil Sciences (328 Iddings Wing, Ag. Sc. Bldg.). Faculty: Dick L. Auld, Wayne S. Belles, Arthur A. Boe, Robert H. Callihan, Lucas Calpouzos, James R. Davis, Robert B. Dwelle, Ronald D. Ensign, Harry S. Fenwick, Arthur M. Finley, Robert L. Forster, James W. Guthrie, Audus W. Helton, Robert E. Higgins, Gale E. Kleinkopf, Walter J. Kochan, John J. Kolar, Marshall J. LeBaron, Gary A. Lee, Donald J. Makus, Hugh C. McKay, Glen A. Murray, Edward W. Owens, Warren K. Pope, R. Robert Romanko, William R. Simpson, Walter C. Sparks, Gilbert F. Stallknecht, David L. Stiers.

102 Intro to Plant Science (4 cr). Propagation, growth, and culture of crop and ornamental plants. Three lec and one recitation per wk.

104 Plant Science Lab (1 cr). Greenhouse operation, plant culture and propagation; crop ident, uses, distribution, and growth. One 2-hr lab per wk. Coreq: 102.

201 Turfgrass Science and Culture (2 cr). Adaptation, characteristics, and use of turf grasses; mgmt prin and physiological bases for the establishment and maintenance of turf. Field trips required.

204 Propagation and Culture of Ornamental Plants (3 cr). Propagation, culture, classification, and uses of plants to enhance man's environment; emphasis on appl. Two lec and one 3-hr lab per wk.

299 (s) **Directed Study** (1-2 cr, max arr). Prereq: perm.

305 Introduction to Plant Pathology (3 cr) (303). Lab exercises and disc on symptoms, causes, and control of the diseases of major crop-plant species. Two 3-hr labs per wk. Prereq: 102 or Biol 203.

308 Forage Crops (3 cr). Production, mgmt, and use of annual and perennial forage plants for pasture, hay, silage, and soil and water conservation. Two lec and one 2-hr lab per wk.

338 Weed Control (3 cr). Biol, chem, and cultural control of weeds. Two lec and one 2-hr lab per wk.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

399 (s) **Directed Study** (1-2 cr, max 2). Prereq: perm.

400 (s) **Seminar** (1 cr). Prereq: perm.

401 Crop Physiology (3 cr). Appl of physiology to crop mgmt. Prereq: Bot 311.

402 Undergrad Research (1-2 cr, max 2). Prereq: perm.

404 Plant Disease Ident and Control (3 cr). Experiments in phytopathology; recognition of symptoms, isolation and ident of pathogenic agents, host-pathogen interactions, and methods of control. Two lec and one 3-hr lab per wk. Prereq: 305 or equiv.

405 Biol of Weeds (3 cr). Alt/yrs 79-80. Classification, ident, and distribution of weeds; morphology, anatomy, physiology, and ecology. One lec and two 2-hr labs per wk; one 1-day field trip.

406 (s) **Special Topics** (cr arr).

407 Field Crop Production (3 cr). Mgmt and use of crops in Idaho and the Northwest. One 1-day field trip.

438 Pesticides in the Environment (2 cr). See Ent 438.

446 Plant Breeding (3 cr). Alt/yrs 78-79. Same as Genet 446. Appl of genetic prin to the improvement of crop plants. Two lec and one 2-hr lab per wk.

461 Pomology (3 cr). Alt/yrs 78-79. Production and mgmt of tree fruit, physiology of the trees and stored fruit. One 2-day field trip.

463 Olericulture (3 cr). Alt/yrs 79-80. Prin of commercial and home garden vegetable production; culture, marketing, storage, and use. One 2-day field trip. Prereq: 102 or equiv.

464 Ornamental Plants and Their Mgmt (3 cr). Use and culture of plants to enhance man's environment. Two lec and two 2-hr labs per wk. Prereq: 204 or perm.

ID469 Vegetable Seed Crop Production (1 cr). Alt/yrs 78-79. Crops indigenous to the Northwest; seedhouse operations and seed regulation. Prereq: perm.

ID470 Potato Science (2 cr). Alt/yrs 78-79. Origin, culture, harvesting, handling, storage, and marketing. Prereq: perm.

480 Field Trip (1 cr). Five-day field trip to production areas. Prereq: perm.

499 (s) **Directed Study** (1-2 cr, max 2). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

507 Preparation and Presentation of Scientific Material (1 cr). Prep and integration of key elements in an illustrated oral presentation; learning-experience situations with equipment and people.

ID508 Ecology of Soilborne Plant Pathogenic Organisms (3 cr). Effects of climate, crop mgmt, and microbial association on the prevalence and pathogenic activity of soilborne plant pathogenic organisms.

ID&WS511 Viruses and Virus Diseases of Plants (3 cr). WSU Pl P 511. Nature of plant viruses, vector-virus relationships, and virus diseases of plants. Prereq: perm.

517 Tree Physiology (3 cr). Alt/yrs 79-80. Physiology of woody perennial plants of econ importance. Prereq: Bot 311.

518 Plant Stress Physiology (2 cr). Alt/yrs 78-79. Responses of plants to temperatures, water, radiation, and other environmental stresses.

ID519 Physiology of Flowering (2 cr). Alt/yrs 79-80. Vernalization, photoperiodism, and biochem of flowering; models.

520 Adv Crop Production (1-3 cr, max 6). Specialized training in selected phases of crop production and mgmt.

532 Adv Weed Studies (1-3 cr, max 6). Specialized training in selected phases.

WS535 Physiology and Genetics of Parasitism (3 cr). Alt/yrs 79-80. WSU Pl P 535. Genetic and physiologic aspects of host-parasite interactions. Prereq: perm.

WS536 Physiology and Genetics of Parasitism Lab (2 cr). Alt/yrs 79-80. WSU Pl P 536. Lab exercises on genetic and physiologic aspects of host-parasite interactions. Prereq: perm.

538 Properties and Functions of Herbicides (2 cr). Alt/yrs 79-80. Physical and chem properties and mode of action of herbicides; effect on plant structure, internal mechanisms, processes, and sites of action. Prereq: 338 or perm.

ID540 Seed Pathology (3 cr). Alt/yrs 79-80. Seed-borne pathogens, incl fungi, bacteria, and viruses; influence on disease spread.

569 Seed Physiology (2 cr). Alt/yrs 78-79. Effect of environment on developmental aspects of commercially important seed species, storage, longevity, dormancy, seed and seedling vigor, and early events in germination. Prereq: Bot 311 or equiv.

WS570 Realizing Potato Production & Processing Potentials (2 cr). Alt/yrs 78-79. WSU Hort 520. Physiological, physical, chem, and tech basis for modern potato production and processing. One lec and one 3-hr lab per wk; one 2-day field trip. Prereq: Bot 311, Soils 205.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Political Science—PolSc

Robert H. Blank, Chairman, Dept. of Political Science and Public Affairs Research (207 Admin. Bldg.). Faculty: Robert H. Blank, Bernard C. Borning, H. Sydney Duncombe, Florence A. Heffron, Neil D. McFeeley, Alwyn R. Rouyer, Roger F. Snider, Andrea L. Weber, Amos Yoder.

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. Ordinarily PolSc 105 or six cr in other lower-div courses in political science are required for registration in upper-div courses; exceptions by permission.

101 U.S. Govt: Structures and Functions (3 cr) (C). Basic concepts, processes, and major structural elements of the national govt.

102 U.S. Govt: Policies and Issues (3 cr) (C). Survey of major policies and issues conflicts in the U.S.

105 Intro to Political Science (3 cr). Prin of political sc and nature of the discipline; comparative processes in political systems; ideas and theories of politics; problems of govts; and international politics.

155 Politics and Contemporary Issues (1 cr, max 3). Consult the dept office for course topic currently offered.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

237 International Politics (3 cr). Survey of major issues and approaches to international politics by major powers; eval of con-

cepts such as power politics, internationalism, and communism; intro to other courses in the area.

275 American State Govt (3 cr) (C). State politics, parties, interest groups, constitutions, legislative, executive, and judicial branches, federal-state relations; key issues of state politics.

276 American Local Govt (3 cr). Org and problems of cities, counties, school districts, and other local units, community power, key functions and issues in local govt.

285 Political Systems of Western Europe (3 cr). Basic elements of the British system and others, incl responsible ministry, executive-legislative dynamics, recent political dev.

286 Communist Political Systems (3 cr). Basic elements of the Soviet system and others, incl nature and role of the party, operations of govt, status of the indiv, recent political dev.

299 (s) **Directed Study** (cr arr). Prereq: perm.

341 World Politics and the Arms Race (3 cr). Problem of war; arms limitation attempts, incl Strategic Arms Limitation Talks (SALT), Nonproliferation Treaty, and recent agreements.

C353 Local Govt Procedures Simplification and Forms Design (1 cr). Procedures simplification, forms design, office layout, and related mgmt tech.

C354 City Govt Budgeting (1 cr). Budgeting procedures and tech useful for city officials in Idaho; laws governing city budgeting in Idaho.

C355 Local Improvement District Admin (1 cr). Establishment, financing, and admin of local improvement districts in Idaho.

C356 Local Govt Purchasing (1 cr). Purchasing procedures and tech useful for local officials in Idaho; laws governing Idaho purchasing.

C376 Community Politics (3 cr). Strategy and tactics of community leaders and groups, power relationships, and issues such as planning and zoning.

380 Canadian Political System (3 cr) (233). General exam of Canadian constitutional prin, federalism, govt structure, political process, and electoral behavior.

385 African Political Systems (3 cr). Same as AfrAm 385. Origins, structure, and working of selected systems; problems of dev and stability.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

425 Western Political Thought (3 cr). Analysis of basic concepts and themes from Plato to the early modern period; special attention to related contemporary political issues and controversies.

426 Recent Political Thought (3 cr). Major contemporary ideologies and currents of thought; their origins, interplay, and impact in domestic and world politics.

428 American Political Thought (3 cr). Clash of political ideas throughout our hist, analysis of evolving concepts and dissent of various eras incl dominant issues of the present.

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. Prereq: perm.

431 Political Parties (3 cr). Public opinion and the political process, party machines, spoils system, nominating methods, conduct of elections.

432 The Legislative Process (3 cr). Theories of representation, recruitment of legislators, legislative org and behavior, structures of power, relationship to the executive, lobbying, and role in the political system.

433 Public Opinion and Electoral Behavior (3 cr). Review of psych and sociological concepts in the opinion-formation process, opinion measurement and basic tech of survey research, and exam of linkages between public opinion and policy in a democratic society.

435 Political Research Methods and Approaches (3 cr). Dev of research designs; methods of data collection; measurement of political phenomena; data analysis and the use of stats; data processing tech.

436 Political Participation (1 cr). Planning a political career, understanding the political environment of your constituency, ident of issues, campaign org and tech, responsibilities and political opportunities in elective office. Prereq: 12 cr in pol sc and perm.

437 American Presidency (3 cr). Roles, power, and functions of the presidency; relationships with other structures and institutions in the U.S. political system.

438 Conduct of American Foreign Policy (3 cr). Foreign policy, incl roles of Dept of State and its missions, the President, National Security Council, Congress, military, public opinion and interest groups.

439 Public Policy (3 cr). Processes by which domestic policies are formulated and administered, analysis of intentional and unintentional impact of these policies on society.

440 International Org and International Law (3 cr). League of Nations, United Nations, and role of international law in international relations; the UN's contribution to international security and econ and social dev.

443 Foreign Policies of Asian Govts (3 cr). Foreign politics of Asian govts; security and dev problems; stress on wars and econ problems.

447 Political Systems of East Asian Govts (3 cr). Chinese and Southeast Asian govts.

451 Public Admin (3 cr) (C). Environment of public admin, politics of org, public decision-making, public relations, leadership, personnel admin, financial admin, admin morality; related topics.

452 Administrative Law and Regulation (3 cr). Rule-making, adjudication, and other modes of regulation of admin agencies; judicial review and Congressional oversight of admin acts.

453 Public Mgmt Techniques (3 cr). Staff tech important to persons entering many types of admin work in govt and other agencies: personnel, mgmt, surveys, data processing, budgeting, purchasing, and public relations.

454 Administrative Org and Behavior (3 cr). Characteristics of indiv decision-making, behavior of small work groups and org theory, leadership in admin.

457 Staff Mgmt Techniques in State Govt (4 cr). Primarily for students planning to enter state govt admin. Personnel, budgeting, mgmt, surveys, data processing, purchasing, and public relations.

458 Mgmt Internship (1-9 cr, max 9). Directed internship in an agency of federal, state, or local govt or special projects involving federal, state, or local govt. One cr for each week of internship work. Prereq: perm.

459 Legislative Internship (1-9 cr, max 9). Directed internship in a national, state, municipal, or corporate legislative body. Supervised work experience. Report required. Prereq: perm.

C461 Local Govt and Intergovernmental Relations in Idaho (3 cr). Org, functions, financing, and intergovt relations in city, county, and other units of local govt in Idaho; emphasis on info of value to planning commission members and other local officials.

467 Constitutional Law (3 cr). The Supreme Court as a constitutional policy-maker; federal jurisdiction; constitutional prin concerning judicial review, federalism, implied powers, separation of powers, and due process.

468 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 appl to the states; criminal justice.

469 The Judicial Process (3 cr). Judicial and legal processes, court structure, procedures; judicial behavior and decision-making; selection of judges.

471 Intergovernmental Relations (3 cr). Relationships among federal, state, and local units of govt; legal and fiscal relationships, grant admin, forms of cooperation, the council-of govt movement, transfers of power, and policy making.

C476 County Govt (3 cr). County govt org, finance, intergovt

relations, politics, historic dev, services, such as criminal justice, planning, transportation, manpower, public welfare, health, ed, and environmental protection.

483 Modernization and Political Change (3 cr). Analysis of the general process in Third World countries.

484 Political Systems of South Asia (3 cr). Comparative analysis of the political process in India, Pakistan, Bangladesh, Sri Lanka, and Nepal.

493-494 Seminar in Urban Studies (2 cr). See Inter 493-494.

496 Proseminar in Political Science (1 cr). Professional practice and careers in govt, politics, law, and other pol sc fields. Graded P/F.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

ID501 (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 admin, and political dev. One 2-day field trip is authorized for the seminar in public admin. Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

WS520 Water Resources Politics and Policy (3 cr). Alt/yrs 79-80. Significant controversies and major dev in western water resources policy.

531 Seminar in American Political Institutions (3 cr). Hist of social and econ bases in the dev of U.S. political institutions and govt.

WS550 Seminar in British Politics (3 cr). Institutions and policy-making process of major parliamentary political systems.

ID556 Seminar in Governmental Policy Analysis (3 cr). Ident and analysis of policy alternatives in govt; factors affecting policy decisions; methods used to evaluate the effectiveness of govt prog.

WS560 Comparative State Political Systems (3 cr). Alt/yrs 79-80. Institutions, processes, and functions of U.S. state govts; their responses to modern needs in an evolving federal system.

WS565 The Govt of Metropolitan Areas (3 cr). Alt/yrs 78-79. Political processes, roles, institutions, and problems.

ID570 Seminar in Political Violence (3 cr).

575 Public Personnel Admin (3 cr). Personnel admin in public agencies; hist of the personnel and merit systems; recruitment, selection, training, and eval of administrators; collective bargaining and political activity in public service; personnel admin and democracy.

ID580 Seminar in Admin and Contemporary Issues (3 cr). See Inter 580.

ID584 Seminar in African Politics (3 cr). Intensive analysis of political process and change in selected regions of Africa.

WS585 International Politics in the Communist World (3 cr). Alt/yrs 79-80. Political relations among communist nations.

590 Scope and Methods of Political Science (3 cr). Relation of pol sc to other disciplines, scientific methods, traditional approaches, and research strategies.

591 American Govt and Politics (3 cr). Review of significant issues and methodological problems in the field.

592 Comparative Govt (3 cr). Review of significant issues and methodological problems in the field.

593 International Relations (3 cr). Review of significant issues and methodological problems in the field.

594 Political Thought (3 cr). Review of significant issues and methodological problems in the field.

595 Public Admin (3 cr). Review of significant issues and methodological problems in the field.

WS596 Seminar in Comparative and Development Admin (3 cr). WSU Pol S 592. Prereq: 451 or 453.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Psychology—Psych

Robert L. Solso, Dept. Chairman (103 Psych. Bldg.). Faculty: Mary K. Biaggio, James E. Crandall, W. Harold Godwin, Robert J. Gregory, Robert E. Lehman, Philip J. Mohan, Victor E. Montgomery, Raymond F. Paloutzian, Robert L. Solso.

PREREQUISITE: Psych 100 is prereq to all other courses in this field. Unless a prereq is specifically stated, the prereq to all grad courses is a major in psych or perm of dept.

100 Intro to Psych (3 cr) (C). Intro to psych topics, incl sensation and perception, learning and thinking, motivation, personality and adjustment, social processes, psych testing; emphasis on fundamental prin.

200 (s) **Seminar** (cr arr). Prereq: perm.

201 Intro to Research in the Behavioral Sciences (4 cr). Primarily for majors in psych. Logic and method of empirical research in the behavioral sc; design, execution, and reporting of psych experimentation and research. Three lec and one 3-hr lab per wk. Prereq or coreq: 217.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

205 Developmental Psych (3 cr) (C). Conception to preadolescence; genetics, anatomy, physiology, biol changes during dev, learning, socialization, cognition, and personality.

210 Human Sexuality (2 cr). Intro to the fundamentals of human sexuality; emphasis on current trends and research.

217 Intro to Stats for the Bahavioral Sciences (3 cr). Same as ApSt 217. Descriptive stats; elem correlation analysis; sampling theory and statistical inference. Prereq: Math 111-112.

299 (s) **Directed Study** (cr arr). Prereq: perm.

311 Abnormal Psych (3 cr) (C). Nature, causes, treatment, and prevention of patterns of emotional disturbances and personality disorg, incl neuroses and psychoses. One or two 1-day field trips.

315 Industrial Psych (3 cr). Contributions of experimental, social, counseling, and clinical psych to the everyday problems of org; emphasis on industrial orgs.

320 Intro to Social Psych (3 cr). 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.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

409 Cognitive Dev (3 cr). Intellectual dev of child from birth to maturity, mechanisms of intellectual growth, relationship between language and cognitive dev.

418 Interm Stats for the Behavioral Sciences (3 cr). Same as ApSt 418. Theory and appl of statistical methods in behavior sciences; nonparametric methods, statistical inference, analysis of variance and covariance. Prereq: 217.

422 Aggression (3 cr). Theories, concepts, and research on aggression at indiv and group levels; origin of aggression; murder; effects of mass media; deindividuation; sex differences; and social, cognitive, learning, and environmental influences.

425 Cognitive Psych (3 cr). Survey and analysis of major topics in field; emphasis on contemporary research and theory; related

topics in perception, memory, and info processing and transformation.

441 Physiological Psych (3 cr). Physiological bases of animal and normal human behavior. Prereq: Biol 201-202.

444 Sensation and Perception (3 cr). Fundamental processes and variables in sensory perceptual and cognitive experiences of man.

455 Psych of Motivation (3 cr). Biol and social varaibles influencing the activation, direction, and self-maintenance of behavior. Prereq: 6 cr in psych.

461 Psych of Personality (3 cr) (C). Theories of personality, basic concepts, tech of measurement, and experimental methods; the normal personality. Prereq: one adv course in psych.

485 Adv Research Methods (3 cr). Methods and projects; various approaches (e.g., social, personality, experimental). Prereq: 201, 217 or equiv, sr standing, and perm.

490 Psych of Learning (3 cr). Experimental lit of the nature and conditions of classical and operant conditioning, verbal learning, and cognition. Prereq: 12 cr in psych.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

511 Psych Evaluation I (3 cr). Assessment of the intelligence and personality of the indiv; relevant hist, concepts, and supervised practice in test admin; interp and reports.

513 Community Psych (3 cr). Theory, research, and issues, incl strategies of intervention for the mental health professional.

525 Adv Cognitive Psych (3 cr). Major theories and research in info processing, pattern perception, memory, and thought.

528 Descriptive Psychopathology (3 cr). Assessment, description, and classification of adult psychopathology; supervised practice in admin and interp of objective tests of psych disturbance.

530 Intro to Clinical Psych (3 cr). Practical, theoretical, research, and professional aspects; breadth of the area; social-professional issues.

540 Psych Evaluation II (3 cr). Projective tech with supervised practice in admin, scoring, and interp of the three most frequently used devices.

545 Adv Clinical Psych (3 cr). Theory, research, and tech of psychotherapy. Prereq: 530; coreq: 597.

571 Psych Eval (2-6 cr, max 6). Clinical assessment of the indiv integration of the various measures of behavior, quantitative and qual, to provide sensitive, relevant, and insightful descriptions of behavior. Prereq: 511, 530, 540, and perm of dept.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Radio-Television—RadTV

Don H. Coombs, Director, School of Communication (Communication Bldg.). Faculty: Cecil W. Bondurant, William A. Byrd, Joyce B. Campbell, Peter A. Haggart (Chairman), Arthur R. Hook, C. Parker Van Hecke.

141 Intro to Radio-TV Broadcasting (3 cr). Hist and operation of radio and TV stations and networks.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

253 Recording and Broadcasting Techniques (3 cr). Audio and video equipment and recording procedures.

285 Radio Production I (2 cr). Theory and practical appl in the creation, design, and production of radio programs.

292 Intro to Television Production (3 cr). Basic production tools and theories; sets, lighting, sound, and directing. Two lec and one lab per wk.

ID295 Broadcasting Theory and Practice in Preparation for FCC 3rd-Class Exam (1 cr). Graded P/F. Prereq: perm of dept.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

322 Ed Uses of Broadcasting (2 cr). Instructional and commercial broadcasting and its uses in the classroom.

385 Radio Production II (2 cr) (485). Continuation of 285. Prereq: 285 or perm.

387 Broadcast Writing (3 cr). Writing encountered at local radio and TV stations.

393 Radio-TV Programming (2 cr). Sources of radio-TV programs, scheduling strategies, audience research, legal limitations, prog design; role of prog mgmt, prog promotion, and relationship of community ascertainment to prog decisions.

492 Adv TV Production (4 cr). Planning and execution of TV programs. Two lec and two labs per wk. Prereq: 292 and Film 388 or perm.

493 Broadcast Mgmt (2 cr). Behavioral mgmt tech applied in broadcast institutions on all supervisory levels; incl mgmt problems of finance, sales and marketing, and engr.

494 Radio-TV News (3 cr). Tech of gathering, writing, and producing broadcast news; required on-air news duties at KUID-FM.

Recreation—Rec

Leon G. Green, Director, Div. of Health, Physical Education, and Recreation (203 Mem. Gym). Faculty: Eric B. Kirkland (Chairman), Calvin W. Lathen.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

203; 403 (s) **Workshop** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

254 Camp Leadership (2-3 cr, max 3). Objectives, prog, and philosophy of private, org, and school camp programs. One 3-4 day field trip.

255 Backpacking and Camping Skills (2 cr). Lec, disc, dem and practical appl in backpacking and camping skills. Field trips required. Prereq: perm.

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.

258 Survival Skills (2 cr). Instruction, analysis, and practice of short- and long-term survival skills; developing student awareness of needs and values of survival training.

260 Man and Leisure (3 cr). Expanding role of leisure in U.S. life; emphasis on factors influencing leisure; analysis of leisure values as related to the indiv and society.

261 Recreational Arts and Crafts (2 cr). Handicrafts suitable for playground. Prereq: perm.

264 Recreational Music (1 cr). Musical program in recreational and community centers.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

329 Leadership in Rec (2 cr). Org, planning, and conduct of school and community, social, rec, and extracurricular events.

360 Youth Serving Agencies (2 cr). Services, background, org, and admin structure. Three days of field trips may be required.

430 Therapeutic Rec (3 cr). Theory, background, and rationale; various recreational therapeutic activites and leadership methods. Three days of field trips may be required.

486 Prog Planning for Rec Centers (3 cr). Org, mgmt, prog, and public relations in the operation of rec centers, settlement-housing, military posts, and college student unions.

494 Admin Practices in Community Rec (3 cr). Planning and dev; leadership, facilities, finances, services, and public relations.

495 Internship in Rec (9 cr). Supervised field work in rec centers, playgrounds, camps, churches, and other social agencies; placement in a full-time professional rec position for a minimum of 9 wks. Graded P/F.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

Religious Studies—RelSt

Stanley W. Thomas, Coordinator (Campus Christian Center).

The following nonsectarian courses are offered by two privately sponsored agencies adjacent to the campus: the Idaho School of Religion and the L.D.S. Institute of Religion. While these teaching centers are not part of the university, they secure the university's approval of courses and instructors.

104 Biblical Hist and Thought (3 cr). Comprehensive study of the salvation hist, persons, and theology of the two testaments to give a total view of the biblical books.

106 Essentials of Christianity (2 cr). Prin of Christian religion from its foundation until modern times.

131 Religion and the Meaning of Existence (3 cr). Intro to religion in today's world; emphasis upon its social and psych implications for the indiv.

133 Religion and Marriage (2 cr). Religious viewpoints as they relate to dating, courtship, and family life.

186 Dynamics of Religious Leadership (2 cr). Charismatic authority, bureaucratic structure and processes of routinization, and their effect upon religious expression.

190 *(s)* **Great Religious Thinkers** (1 cr, max 4). Life and thought of major contributors to the world's religious traditions, such as Augustine, Calvin, Gandhi, Luther, and Wesley. Consult the time schedule for the special emphasis each semester.

200; 400 (s) **Seminar** (cr arr). Prereq: perm.

204; 404 (s) **Special Topics** (cr arr).

273 World Religions (2 cr). Main beliefs of Islam, Hinduism, Buddhism, Confucianism, Judaism, and Christianity within the context of the internationalization of culture.

282 The New Morality (2 cr). Dev of religious ethics in the West and its bearing upon contemporary expressions.

284 Religion and World Problems (1 cr). Issues such as war and peace, population and environment, identity and alienation considered in international perspective.

299; 499 (s) **Directed Study** (cr arr). Prereq: perm.

321 Contemporary Theological Thought (2 cr). Recent dev in Christian theology, writings of such men as Teilhard de Chardin, Dietrich Bonhoeffer, and Paul Tillich.

322 Religious Institutions (2 cr). Comparative study of contemporary religious institutions, such as Baptist, Lutheran, and Roman Catholic churches in America; special attention to reform and unity movements.

323 Religion and Society (2 cr). Analysis of the societal manifestation of religion, sociological significance of schisms, sect, and church in sociological theory. Prereq: 131 or perm.

490 Technology and Human Values (2-3 cr). See Inter 490.

Social Science—SocSc

Harry H. Caldwell, Coordinator (111 Mines Bldg.). Faculty: Richard W. Beeson, Harry H. Caldwell, Max E. Fletcher, Neil D. McFeeley, Philip J. Mohan, Fred H. Winkler.

185; 385 Study Tour Abroad (1-9 cr, max 9). Participation in a tour conducted by a member of the UI faculty providing direct observation of the political, economic, and social life of one or more foreign countries. Students pay own expense. Max one cr per wk. Prereq for 185: grad from high school; prereq for 385: jr standing or perm of coord.

200; 400; 501 (s) **Seminar** (cr arr). Prereq: perm.

203; 403; 503 (s) **Workshop** (cr arr). Prereq: perm.

204; 404; 504 (s) **Special Topics** (cr arr). Prereq: perm.

299; 499; 502 (s) **Directed Study** (cr arr). Prereq: perm.

498; 598 (s) **Internship** (cr arr). Prereq: perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Sociology—Soc

Roderick Sprague, Head, Dept. of Sociology/Anthropology (101 Faculty Office Complex-West). Faculty: Richard W. Beeson, John E. Carlson, Zaye Chapin (Social Work), Eric L. Jensen, Marie L. Lassey, Ronnal L. Lee.

PREREQUISITE: Ordinarily three cr in lower-div courses in sociology are reqd for registration in upper-div courses in this field; exceptions by permission.

110 Intro to Sociology (3 cr) (C). Basic concepts, prin, processes, incl socialization, primary groups, race relations, the family, religion, and population.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

230 Social Problems (3 cr) (C). Concepts relating technological and institutional changes to current social problems.

231 Practicum in Aging (1-4 cr). Social and psych needs, behavior, and treatment of the aged in institutions. 1½-hr seminar per wk; 24 hrs field work per semester per cr. Prereq: major in soc, psych, rec, or prephysical therapy, or perm.

240 Intro to Social Welfare (3 cr). Analysis of the forces leading to current social welfare practices. At least one field trip. Prereq: 110 or 230.

241 Contemporary Social Welfare Org (3 cr). Social welfare agency services and prog. Two field trips. Prereq: 240.

299 (s) **Directed Study** (cr arr). Prereq: perm.

310 Rural Soc (3 cr (C). Characteristics of rural society, incl ag demography and social structure. Two 1-day field trips.

311 Urban Soc (3 cr). Population, spatial, social patterns characteristic of urban communities. One 1-day field trip.

312 Soc of Organizations (3 cr). Analysis of positions, roles, norms, and authority structures in orgs.

313 Collective Behavior (3 cr). Analysis of group behavior that emerges in response to critical and unstructured situations.

314 Social Stats (3 cr). Descriptive and inferential stats, measures of association, parametric and nonparametric tests. Prereq: Math 111 or equiv.

320 Marriage and the Family (3 cr) (C). Historical and economic background of the family and marriage from a cross-cultural perspective.

321 The Community (3 cr) (C). Origins, types, patterns, and processes of the community. Two 1-day field trips.

322 Racial and Ethnic Relations (3 cr). See Anthr 322.

330 Juvenile Delinquency (3 cr) (C). Extent, causes, and control of juvenile delinquent behavior.

331 Criminology (3 cr) (C). Behavior systems, deviant patterns; modern penal institutions and methods, crime prevention. One 1-day field trip.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

409 Field Methods in Soc and Social Work (1-8 cr, max 8). Supervised field training in sociological research and/or social work field methods. Prereq: perm.

410 Intro to Social Research (3 cr). Principal methods of data collection, analysis, and interp. Prereq: Psych 217 or comparable introductory stats.

412 Social Structure and Personality (3 cr). Dev of self concepts from social interaction; how perception, learning, thinking, motivation, and attitude formation relate to social structure.

413 Early Social Theory (3 cr). Survey of social thought from Hammurabi (200 B.C.) to Durkheim (A.D. 1900).

414 Modern Social Theory (3 cr). Brief survey of social thought from Durkheim (A.D. 1900) to the present.

420 Social Stratification (3 cr). Comparative study of differential status patterns, incl origins, forms, functions, trends.

421 Population and Human Ecology (3 cr). Theories and methods of population analysis; migration; implications of overpopulation.

430 Deviance (3 cr). Analysis and critique of theories of deviant behavior. Prereq: 330 or 331, and/or perm.

431 Problems of the Aging (3-4 cr). Social, psych, and physical problems of enforced leisure and aging process. Incl 24 hrs of field work with the aging when taken for 4 cr. May be concurrent with 409 with perm.

440 Methods of Social Work (3 cr). The profession of social work; basic skills for interviewing and working with individuals, families, and groups. Prereq: 240 or perm.

493-494 Seminar in Urban Studies (2 cr). See Inter 493-494.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm of dept.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Subjects normally offered: sociological research, social problems, and social theory. Prereq: perm.

502 (s) **Directed Study** (cr arr). Subjects normally offered: sociological theory, human ecology, and race relations. Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Soils

Lucas Calpouzos, Head, Dept. of Plant and Soil Sciences (328 Ag. Sc. Bldg.). Faculty: Maynard A. Fosberg, Roger W. Harder, J. Preston Jones, Glenn C. Lewis, Robert E. McDole, Raymond J. Miller, Denny V. Naylor.

205 General Soils (3 cr). Chem, physical, and biol nature of soils. Prereq: Chem 111 or equiv; coreq for ag students: 206.

206 General Soils Lab (1 cr). Lab study relevant to 205. Experiments, demonstrations, and AV tutorial instruction of basic soil physical and chem properties. One 2-hr lab per wk. Coreq: 205.

344 Soil Conservation and Mgmt (3 cr). Alt/yrs 78-79. Relationships of soil type, slope, climate, and erosion to land capability; conservation and mgmt practices for erosion control. Two 1-day field trips. Prereq: 205.

354 Soil Resources and Land Use Planning (2 cr). Soil surveys, guides and methods in making soil interp; use of soils data and interp in land use and environmental decisions.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq: perm of dept.

401 Undergrad Research (1-2 cr, max 4). Indiv study. Prereq: sr standing and perm.

404 (s) **Special Topics** (cr arr).

408 Forest Soils (2 cr). See FWR 408.

412 Soil Chem (4 cr). Alt/yrs 78-79. Chem properties of soils and their eval. Three lec and one 3-hr lab per wk. Prereq: 205 and Chem 112 or 114.

417 Soil Clay Mineralogy (2 cr). Alt/yrs 78-79. Structure, chem, and physical properties of clay minerals found in soils. Prereq: Chem 112 or 114.

425 Soil and Aquatic Microbiol (3 cr). See Bact 425.

435 Soil Physics (3 cr). Physical properties of soils and their relationships to moisture, aeration, and temperature; cultural practices and erosion problems. Two lec and one 3-hr lab per wk. Prereq: 205.

446 Soil Fertility (3 cr). Alt/yrs 79-80. Prin of soil fertility maintenance; availability of plant nutrients and their relationship to plant and fertilization practices. Prereq: 205.

448 Mineral Nutrition (3 cr). Alt/yrs 79-80. See Bot 413.

454 Soil Dev and Classification (3 cr). Relationship of soil dev to soil properties; soil profile descriptions and classification. Two lec and one 2-hr lab per wk; two 1-day or one 2-day field trips. Prereq: 205.

490 Proseminar (1 cr, max 2). Prereq: jr standing and perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

ID511 Soil Organic Matter (2 cr). Alt/yrs 78-79. Formation, chem properties, and significance of the soil organic fraction. Prereq: 412, Bact 425, and course in organic chem, or perm.

ID&WS512 Adv Soil Chem (3 cr). Alt/yrs 79-80. WSU 500. Chem properties of soil colloidal systems. Prereq: 412, Chem 253, or perm.

WS513 Groundwater Chem (3 cr). Alt/yrs 78-79. WSU 582. Aquifer characteristics; sources of groundwater solutes; chem changes during groundwater flow; dynamics of solute flow; measurements of groundwater chem. Prereq: 512 or perm.

ID515 Chem of Plant Nutrients (3 cr). Alt/yrs 79-80. Chem of nutrients in the soil; relationship to uptake and use by plants. Prereq: 412 or perm.

WS517 Biochem of Soil-Water Environment (3 cr). Alt/yrs 78-79. WSU 507. Biochem processes in soil-water environment; nutrient cycling; nitrogen cycle; pesticides in environment; ag waste disposal and pollution problems. Prereq: 412, 425, Chem 253, Chem 380, or perm.

521 Adv Forest Soils (3 cr). See FWR 521.

WS 536 Adv Soil Physics (2 cr). Alt/yrs 79-80. WSU 511. Physics of the soil-water system. Prereq: 435 or perm.

ID&WS546 Adv Soil Fertility (3 cr). Eval of nutrient availability and soil fertility. Prereq: 446, ID515, or perm.

ID555 Adv Soil Genesis and Classification (3 cr). Alt/yrs 79-80. Field study of interrelationship of soil properties, classification, and land-use interp. One lec and one 4-hr lab per wk; one 8-day or eight 1-day field trips. Prereq: 454 or perm.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Special Education—SpEd

Thomas O. Bell, Director, Div. of Teacher Education (301 Educ. Bldg.). Faculty: N. Dale Gentry, Linda K. Gibbs, Arthur U. Iriarte, Ernest K. Lange, Marguerite M. Lynch, A. Lee Parks (Acting Chairman).

190 Special Ed Lab (1 cr, max 6). Supervised observation and participation with exceptional children. Graded P/F.

200 (s) **Seminar** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

275 Ed of Exceptional Children (3 cr) (C). Intro to the ed of the mentally retarded, physically limited, deaf or hard of hearing, blind or partially sighted, socially and emotionally maladjusted, speech defective, and intellectually gifted. Coreq: 190.

299 (s) **Directed Study** (cr arr). Prereq: perm.

377 Curriculum Dev for the Exceptional Child I (3 cr). Org of special prog in public-school ed; dev of teaching materials; location and selection of appropriate materials related to the needs of the exceptional child; guidelines for choosing, planning, and coordinating books, materials, and equipment relevant to activities in basic curriculum areas. Competency based.

378 Curriculum Dev for the Exceptional Child II (3 cr). Interp of diagnostic info, prescriptive planning for teaching methods and tech relevant to the social and physical world of the exceptional child. Competency based.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm of dept.

404 (s) **Special Topics** (cr arr).

421 Resources and Services for Exceptional Children (3 cr). Orientation to the resources and services available and essential to the exceptional child and the child's family; proper referral and use of school resources, rehabilitation, facilities, legal aspects, and other agencies serving exceptional children and their families.

423 Social and Emotional Aspects of Exceptionality (3 cr). Intro to the psych and social problems encountered by the exceptional child, especially during school years; effects on dev and learning process; survey of tech and procedures for eval and understanding of psych, ed, and social problems of exceptional children.

425 Diagnostic Eval of the Exceptional Child (3 cr). Diagnostic procedures for ident behavioral and ed deficits in children with special learning problems.

450 Children with Behavioral Disorders (3 cr). Contrasting normal and deviant personality dev; classical and contemporary description of deviant behavior; relationship of community and family interaction to deviant behavior; functional analysis of behavior.

451 Ed of Emotionally Disturbed Children (3 cr). Models of organizing and teaching the emotionally disturbed; tech of classroom mgmt; tech of behavior modification.

476 Ed of Severely Mentally Retarded Children (3 cr). Org of special classes in public school prog for severely mentally retarded children; dev of teaching materials and tech; emphasis on community org and parent ed. Prereq: 275 or perm.

480 Practicum (9 cr). Directed teaching in classes for exceptional children. Graded P/F. Prereq: perm of dept. (Submit appl to director of clinical experiences in teacher ed by December 1 of school year prior to enrolling.)

487 Language Dev and Disorders (3 cr). Theories of language dev; analysis of language disorders in exceptional children; intro to tech and activities of aiding children with developmental language deficits.

497 Teaching Gifted Children (3 cr). Ident and teaching of gifted children in elem schools.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

522 Diagnostic and Remedial Instruction (3 cr). Methods and materials; problems of accelerations as well as retardations. Prereq: Ed 430 or teaching experience.

540 Behavior Analysis in Applied Settings (3 cr). Prin of behavior analysis; concepts, early appl; current issues. Two lec and one 2-hr lab per wk.

541 Mental Retardation Trends and Issues (3 cr). Current research; innovative approaches to solutions; dev of comprehensive community prog.

542 Guidance of Exceptional Children (3 cr). Personal and social problems of exceptional children and their families; tech of working with them; working with parent groups.

545 Community Service Seminar (3 cr). Analysis of needed ancillary services; planning for and implementing community services; role of the educator on the interdisciplinary team.

546 Assessment of Learning Disorders (3 cr). Eval of tech of assessment of handicapped children.

548 Special Ed Curriculum (3 cr). Problems of programming for the handicapped; different curriculum approaches; practice in developing curricula for handicapped children.

549 Comm Disorders of Handicapped Children (3 cr). Analysis of language disorders in handicapped children; ident of sensory deficits; tech for correction; theory of comm and its relationship to comm disorders.

577 Curriculum Dev for the Severely Retarded (3 cr). Curriculum for severely retarded persons, e.g., self-help, gross motor, cognitive, language, and social skills.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Supervised field experience in an appropriate public or private agency. Graded P/F. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Speech—Sp

Don H. Coombs, Director, School of Communication (Communication Bldg.). Faculty: Tom E. Jenness, Nancy L. Mendoza, Paul L. Miles (Chairman).

109 Intercollegiate Forensics (1 cr, max 4). Intercollegiate competition on the national debate topic and in indiv events.

111 Great Speakers on Great Issues (2 cr). Hist and criticism of selected public addresses.

121 Improving Listening Skills (1 cr). Appl of theory to variables which promote and impede listening.

131 Fundamentals of Speech (2 cr). Skills and tech of effective speaking.

140 Nonverbal Comm (1 cr). Study of body language, symbols.

141 Interpersonal Comm (2 cr). Theory and skills applicable to one-to-one comm situations.

151 Oral Interp (2 cr). Use of voice and body to communicate the intellectual and emotional meaning of lit.

191 Comm of the Feminist Movement (1 cr). Women's rights through history, focusing on the comm of women who figure prominently in the movement.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

211 Comm of Minorities (2 cr). Values, customs, language, stereotypes, and prejudices effecting comm between different cultural groups in the U.S.

231 Informative Speech (2 cr). Prep and delivery of various types of informative speeches. Prereq: 131 or perm.

262 Parliamentary Law and Procedure (1 cr). Practice of speech under parliamentary conditions.

299 (s) **Directed Study** (cr arr). Prereq: perm.

309 Intercollegiate Forensics (1 cr, max 4). Adv training for intercollegiate competition on the national debate topic and indiv events.

311 Intercultural Comm (2 cr) (241). Patterns of comm among various races and nations of the world.

321 Interviewing (3 cr). Prin of info gathering and problem solving in interviews.

322 Employment Interview Skills (1 cr). Skill dev for job interview; personality surveys, resume prep, and mock interviews. Enrollment limited.

331 Resolution of Conflict (2 cr). Methods of resolving conflicts through coactive and combative persuasion, such as mediation, negotiation, bargaining, and speeches; role of the mediator, negotiator, and ombudsman; how to deal with hecklers.

341 Org Comm (3 cr). Theories and research findings on comm processes in large institutions and social systems.

362 Comm and the Small Group (3 cr). Problem-solving methods; performing as a group leader or as a group member; small group behavior.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

499 (s) **Directed Study** (cr arr). Prereq: perm.

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

Theatre Arts—ThA

Frederick L. Chapman, Dept. Head (U-Hut 102). Faculty: Frederick L. Chapman, Edmund M. Chavez, Jean R. Elliott, Carl J. Petrick, Steven J. Remington, Forrest E. Sears.

ADVANCED PLACEMENT: Courses in this subject field that are vertical in content are: 105-106-272-305-306-407-408.

101 Intro to the Theatre (2 cr). For nonmajors. Theatre hist; recent trends in staging tech and arch; elements of production design; analysis of selected plays.

102 Stage Makeup (1 cr). Prin and practices; practical lab experience. Limited to 20 students. Prereq: perm.

103 Intro to Stagecrafts (2 cr). Shop tools, stage equipment, sewing, costuming, lighting equipment; fundamental actor responsibilities; stage and house mgmt.

105-106 Basics of Performance (2 cr). Improvisation; presentation of play scenes. ThA 105: acting tech in relaxation, observation, imagination, sense memory. ThA 106: stage speech, breathing, projection, resonance, pitch, articulation; international phonetic alphabet. Prereq: perm.

125 Summer Theatre I (2-4 cr, max 4). Theatre production, incl public presentation of several plays. Max ten cr in 125 and 395 combined. Prereq: perm of dept.

130 Drama-Television Production I (1-2 cr, max 2). Rehearsal performance of a drama-television production; aspects of production; taping for presentation. Prereq: perm of dept.

150 Performance Lab (1 cr, max arr). Reqd each semester for majors. Warm-up procedures, skills and tech in stage movement, voice production; special dept events and labs. Two labs per wk.

163 Technical Production (3 cr). Methods of scenery, prop, and sound constr; scene painting; familiarization with duties of all production staff positions.

190 Theatre Practice I (1 cr, max 4). Open to nonmajors. Practical experience in all aspects.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

263 Basics of Scene Design and Graphics (2 cr). Drafting, sketching, perspectives, rendering tech; grahpics for design and promotional materials; prin of colors, line and space in set design.

265 Children's Theatre (3 cr). Alt/yrs. Selection, prep, and presentation of theatre for children; story telling; recreational and special occasion prog.

266 Creative Dramatics (2 cr). Alt/yrs. Selection, prep, and presentation of creative dramatics; practical appl through working with children on the elem-school level.

271 Play Analysis (3 cr). Critical intro to theatre arts; tragic and comic genres; analysis of contemporary theatre systems; modern movements in theatre.

272 Interm Acting (3 cr). Interp of roles, methods in characterization; tech for developing a character. Prereq: perm.

273 Stage Lighting (3 cr) (264). Methods of light distribution and color for theatre, dance, art, and other media; special effects.

299 (s) **Directed Study** (cr arr). Prereq: perm.

305 Methods in Characterization (3 cr). Alt/yrs. "Physicalizing" the actor's body and emotions through rehearsal tech, incl animals, paintings, props, transformation characterization.

306 Adv Acting (3 cr). Alt/yrs. Intense textual and characterization study of a specified play; theory and practice in major stage dialects. Prereq: perm.

330 Drama-TV Production II (1 cr, max 4). Continuation of 130. Prereq: perm. of dept.

362 Costume for the Stage (3 cr). Alt/yrs. Costume design and constr for theatrical productions; dev of period costumes; production problems.

363 Costume Constr (3 cr). Alt/yrs. Methods of pattern drafting, fitting, and constr of theatrical costumes. Two lec and one 3-hr lab per wk. Prereq: 362 or perm.

364 Scene Design I (3 cr). Scene design for the theatre, play analysis for design; relationship of design to space; rendering and special problems.

390 Theatre Practice II (1 cr, max 4). Open to nonmajors. Continuation of 190. Set constr, costumes, lights, and properties.

395 Summer Theatre II (2-8 cr, max 8). Continuation of 125. Max ten cr in 125 and 395 combined. Prereq: perm of dept.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

404 (s) **Special Topics** (cr arr).

407-408 Styles of Acting (3 cr). Alt/yrs. ThA 407; cultural backgrounds, manners, and customs in classic acting styles from the Greeks through Shakespeare. ThA 408: restoration theatre through 20th-century styles. Prereq: perm.

480 Production Mgmt (2 cr). Alt/yrs. Publicity and promotion, business mgmt, box office org, house mgmt, bids, contracts, and budget problems in theatre org.

464 Scene Design II (3 cr). Historical survey of methods, media, and materials; contemporary media and styles in theatre and other performing arts. Prereq: 364 or perm.

467-468 The Theatre (3 cr). Survey of European and American theatres, dramatists, and actors.

469 Modern Theatre (3 cr) (424). Hist of the movements, per-

sonalities, and representative plays from the time of Pirandello to 1930. Prereq: 467-468.

471-472 Directing (3 cr). Org and tech involved in directing. ThA 471: prep of a play from casting to performance. ThA 472: staging and interp of a play; composition, picturization, movement, and rhythm. Prereq: perm of dept.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

505 Summer Theatre III (2-8 cr, max 8). Theatre production, incl public presentation of several plays; emphasis on responsibilities of the grad student, incl assiting the director, serving as crewhead, and acting. Prereq: 20 cr in theatre arts and perm of dept.

ID510 Costume Design and Rendering Techniques (2 cr). Emphasis on developing rendering tech for costume design. Prereq: 362.

ID515 Adv Stage Costuming (2 cr). Design responsibility for a major production. Prereq: perm of dept.

520 Adv Directing (3 cr). Tech and styles of major 20th-century directors; work in directing genres of tragedy, drama, melodrama, comedy, and the absurd.

ID522 Directing the Period Play (3 cr). Interp and staging of a period play in major dramatic periods; social and cultural view of each period.

530 Scene Design III (3 cr). Survey of historical periods and arch styles; practical appl to design problems. Prereq: 163, 364.

ID535 Adv Scene Design (3 cr). Design responsibility for a major production. Prereq: perm of dept.

ID560 Seminar in Dramatic Criticism (3 cr). Analysis of past and present criticism of drama.

WS567 The Forms of Drama: Tragedy (3 cr). WSU Spe 567. Dev of tragedy from its origins to the present.

WS568 Seminar in Theatre (3 cr, max arr). WSU Spe 568. Research in a specific area of theatre.

WS569-WS570 American Theatre and Drama I-II (3 cr). WSU Spe 545-546. WS569: colonial origins to 1850. WS570: 1850 to the present.

571 Modern Theatre (3 cr) (425). Alt/yrs. Epic theatre, theatre of the absurd, theatre of cruelty, current experimentation; seminar approach. Prereq: 467-468.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Veterinary Science—VS

Floyd W. Frank, Dept. Head (22 Vet. Sc. Bldg.). Faculty: Benedict G. Archer, Marie S. Bulgin, George E. Burrows, C. Seymour Card, Floyd W. Frank, Richard F. Hall, John H. Kirk, Stuart D. Lincoln, David P. Olson, Gerald A. Pollock, Harland W. Renshaw, Robert C. Ritter, Erik H. Stauber, Donald G. Waldhalm, Alton C. S. Ward.

All courses in this subject field, except VS 200, 203, 299, 371, 400, 446, 452, 474, 481, 483, 498, 499, 512, and 516, are open only to students who have vet sc grad student status or by permission of the dean of the Idaho faculty of the Northwest College of Veterinary Medicine.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

299 (s) **Directed Study** (cr arr). Prereq: perm.

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 per wk.

389 Internship (1-6 cr, max 6). Graded P/F. Prereq:perm of dept.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Prereq: perm.

ID&WS404 (s) **Special Topics** (cr arr). WSU V An 499, V Mic 499, V Ms 499, V Pa 499, V Ph 499.

WS419 Mammalian Physiology (4 cr). WSU V Ph 419, Physiology of organ systems of domestic animals. Note: Students on the Idaho campus who need this course enroll in Zool 416.

WS420 Mammalian Physiology (5 cr). WSU V Ph 420. Continuation of WS419.

WS423 Veterinary Neuroscience (3 cr). WSU V Ph 423. Structure and function of nervous tissues, emphasis on relationship of neurophysiology and neuroanatomy. Two lec and one 3-hr lab per wk. Prereq: courses in veterinary gross anatomy and veterinary physiology.

WS425 Veterinary Anesthesiology (2 cr). WSU V Ph 425. Clinical admin of anesthesia and the effect of anesthesia on body systems. One lec and one 3-hr lab per wk. Prereq: DVM degree.

WS428 Behavior Mechanisms in Physiology (2 cr). WSU V Ph 428. Major categories of animal behavior across species, emphasizing behavior as a physiological response to internal and enviornmental necessity.

WS435 Disease Concepts for Wildlife Biologists (4 cr). WSU V Mic 435. Biologic aspects of infectious diseases and environmental contaminants in wild mammalian and avian populations. Note: Students on the Idaho campus who need this course enroll in VS 446.

446 Diseases of Wild Birds and Mammals (2 cr). See FWR 446.

WS451 Veterinary Parasitology (5 cr). WSU V Pa 451. Anthropods, protozoa, and helminths of veterinary importance; their host-parasite relationship and control. Four lec and one 3-hr lab per wk. Prereq: perm.

452 Diseases and Care of Lab Animals (3 cr). Alt/yrs 78-79. Vertebrate animal species commonly employed as lab animals; diseases, sanitation, environmental control, and general care. Two lec and one 2-hr lab per wk.

WS453 Clinical Parasitology (2 cr). WSU V Pa 452. Methods for the control of, and lab tech used in the ident of parasites important in practicing vet med. One lec and one 3-hr lab per wk. Prereq: WS451.

474 Animal Disease (3 cr). Causes, transmission, susceptibility, symptoms, diagnosis, prevention, and control of major infectious diseases and parasites of domestic animals. Prereq: 371, Bact 250.

481 Virology (3 cr). Same as Bact 481. Emphasis on pathogenesis and host-virus relationship. Prereq: Bact 304; prereq or coreq: Bact 409.

483 Virology Lab (1 cr). Same as Bact 483. Familiarization with tissue culture tech used in virology; infection of cultures with selected viruses; observation and eval of infected cultures by different diagnostic tech. One 3-hr lab per wk. Prereq or coreq: 481.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq:perm.

502 (s) **Directed Study** (cr arr). Prereq:perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

ID&WS504 (s) **Special Topics** (cr arr). WSU V Mic 600.

WS510 Pharmacokinetics (2 cr). WSU Phar 510. Alt/yrs 78-79.

Kinetic aspects of drug absorption, distribution, and excretion; biophysico-chem factors influencing the time variation of drug concentrations.

512 Prin of Comparative Pathology (4 cr). Alt/yrs 78-79. Structural and functional alterations in disease, elem tumor pathology. Three lec and one 2-hr lab per wk. Prereq: Zool 324, 427 or equiv, or perm.

516 Methods of Animal Experimentation (4 cr). Alt/yrs 79-80. Methods of experimentation, incl anesthesia, sedation, surgical tech, euthanasia, germ-free animals, drug admin, physiological measurements, radiation, and electronic monitoring of physiological phenomena. Two lec and two 3-hr labs per wk. Prereq: 317 or Zool 324.

WS520 Techniques in Mammalian Physiology (2 cr). WSU V Ph 520. Alt/yrs 78-79. Use of anesthetic and surgery. One lec and one 3-hr lab per wk.

WS521 Experimental Mammalian Physiology (3 cr). WSU V Ph 521. Alt/yrs 78-79. Concepts and tech. Two lec and one 3-hr lab per wk.

WS523 Clinical Toxicology (3 cr). WSU V Ph 523. Alt/yrs 79-80. Prereq: two courses in veterinary pharmacology.

WS525 Pharmaceutical Analysis and Control (3 cr). WSU Phar 525. Procedures and instruments in analyt and control methods. Prereq: Chem 372.

WS526 Pharmaceutical Analysis and Control (3 cr). WSU Phar 526. Continuation of WS525. One lec and 6 hrs of lab per wk.

WS531 Chemical Structure and Drug Action (3 cr). WSU Phar 531. Theories of medicinal chem. Prereq: 10 hrs organic chem, and a course in pharmacology or biochem.

WS532 Chemical Structure and Drug Action (3 cr). WSU Phar 532. Effect of variation of structure on pharmacological properties of selected classes of medicinals. Prereq: WS531.

WS533 Adv Veterinary Diagnostic Bact (2 cr, max arr). WSU V Mic 533. Isolation and ident of bacterial and mycotic agents in diseased organs and tissues of animals. Two 3-hr labs per wk. Prereq: Bact 304.

WS534 Viral and Rickettsial Disease of Animals (3 cr). Alt/yrs 79-80. WSU V Mic 534. Pathogenesis of viral and rickettsial disease. Prereq: 481, Bact 409.

WS536 Diagnostic Microbiologic Conference (1 cr, max arr). WSU V Mic 536. Ident of animal pathogens in clinical material. One 3-hr lab per wk.

WS537 Diagnosis of Viral and Rickettsial Diseases of Domestic Animals (3 cr). WSU V Mic 537. Clinical, pathological, and lab diagnosis. One lec and two 3-hr labs per wk. Prereq: 481, Bact 304.

WS538 Veterinary Mycology (2 cr). WSU V Mic 538. Isolation and ident of fungi and mycotoxins important to vet med. Two 3-hr labs per wk. Prereq: Bact 304.

WS539 Avian Diseases (2 cr). WSU V Mic 539. Diagnosis and treatment of diseases in pet, wild, and zoo birds. One lec and one 3-hr lab per wk. Prereq: 512, Bact 304.

WS540 Diseases of Commercial Fowl (2 cr). WSU V Mic 540. Diagnosis, control, and treatment of diseases in domestic fowl. One lec and one 3-hr lab per wk. Prereq: 512, Bact 304.

WS542 Adv Diagnostic Pathology (3-4 cr, max 8). WSU V Pa 542. Microscopy, histopathology, and surgical pathology. Two lec and 3 or 6 hrs of lab per wk.

WS543 Diseases of Lab Animals (3 cr). WSU V Pa 543. Alt/yrs 79-80. Diseases of smaller lab animals. Prereq: DVM degree.

WS544 Immunopathology (3 cr). WSU V Pa 544. Alt/yrs 78-79. Role of immune processes in the genesis of disease. Two lec and one 3-hr lab per wk. Prereq: a course in general pathology or an adv course in immunology.

WS545 Mechanisms of Disease (4 cr). WSU V Pa 545. Biochem and immunological mechanisms involved in disease processes studied from the comparative standpoint.

WS546 Diseases of Wildlife (2 cr). WSU V Mic 542. Mgmt prin, epidemiology, pathology, treatment, and control of diseases in wild birds, fish, and mammals. Prereq: perm.

WS547 Adv Veterinary Parasitology (3 cr). WSU V Pa 547. Alt/yrs 78-79. Mechanisms involved in host-parasite relationship important to control of parasitic infections.

WS548 Seminar in Experimental Pathology (1 cr, max arr). WSU V Pa 548.

WS549 Adv Systemic Pathology I (4 cr). WSU V Pa 549. Alt/yrs 78-79. Pathology of selected organ systems and oncology. Two lec and 6 hrs of lab per wk. Prereq: DVM degree.

WS550 Adv Systemic Pathology II (4 cr). WSU V Pa 550. Alt/yrs 79-80. Selected organ systems. Two lec and 6 hrs of lab per wk. Prereq: DVM degree.

WS551 Pesticide Chem & Toxicology (4 cr). WSU V Ph 545. Alt/yrs 78-79. Mode of action at neural-membrane and molecular levels; mammalian toxicity; environmental aspects; mechanisms of selectivity of and resistance to poisons. Three lec and one 3-hr lab per wk. Prereq: Chem 372, and courses in enzyme chem and neurophysiology.

WS560 Molecular Genetics (3 cr). WSU Bact 460. Biochem description of genetic processes in microorganisms. Prereq: a course in genetics or microbiol.

WS561 Adv Pharmacology (4 cr). WSU Phar and V Ph 561. Lec and conferences on the most adv concepts and appl of drug action. Three lec and one 3-hr lab per wk. Prereq: a course in pharmacology.

WS563 General Biochem (3 cr). WSU BC/BP 563. Structure and function of proteins and nucleic acids; fundamental prin of enzymology; chem aspects of molecular biol. Prereq: one course each in analyt chem and organic chem. Note: Students on the Idaho campus enroll in Biochem 481 or Chem 481.

WS564 General Biochem (3 cr). WSU BC/BP 564. Carbohydrate and lipid metabolism and its control; biochemical energetics; photosynthesis. Prereq: Biochem 481 or Chem 481. Note: Students on the Idaho campus enroll in Biochem 482 or Chem 482.

WS565 Adv Pharmacology (4 cr). WSU Phar and V Ph 562. Continuation of WS561. Three lec and one 3-hr lab per wk. Prereq: WS561.

WS566 Biochemical Techniques (3 cr). WSU BC/BP 566. Adv research methods. One lec and 6 hrs of lab per wk. Prereq: Biochem 482 or Chem 482. Note: Students on the Idaho campus enroll in Biochem 483 or Chem 483.

WS570 Adv Immunology and Immunochem (4 cr). WSU Bact 570. Biol of the immune process; chem and function of immunoglobulins. Two lec and 6 hrs of lab per wk. Prereq: Biochem 481 or Chem 481, and a course in immunology.

WS571 Adv Immunology (3 cr). Alt/yrs 78-79. WSU V Mic 531. Analysis of the immune response. Prereq: Bact 409.

WS572 Virology (4 cr). Alt/yrs 79-80. WSU V Mic 532. Adv topics in basic virology. Three lec and one 3-hr lab per wk. Prereq: 481, Biochem 380.

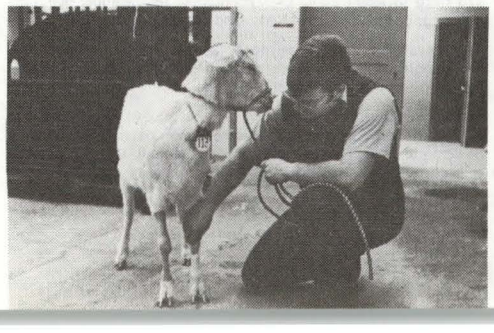
WS582 Seminar in Clinical Medicine (1 cr, max arr). WSU V MS 582. Prereq: DVM degree.

WS587 Hospital Rotation (3 cr). WSU V MS 587. Supervised practical experience in all service areas of the veterinary hospital. Nine hrs of lab per wk. Prereq: DVM degree.

597 (s) **Practicum** (cr arr). Prereq: perm.

598 (s) **Internship** (cr arr). Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.



Vocational Teacher Education—VocEd

James A. Bikkie, Director, Div. of Vocational Teacher Education (210 Educ. Bldg.). Faculty: William R. Biggam (Industrial Education), James A. Bikkie (Vocational Teacher Education), James L. Black (Adult Education), Thomas E. Hipple (Counselor Education), John P. Holup (Distributive Education), Jack J. Kaufman (Vocational Special Needs), Robert M. Kessel (Business Education), Shirley O. Kiehn (Home Economics), John A. Lawrence (Agricultural Education), Laura J. Miller (Home Economics), John L. Peterman (Trade and Industrial/Technical Education).

MAJORS: Trade and industrial/technical ed, and vo-tech ed majors fulfill their major requirements from the courses listed in this section.

RELATED FIELDS: For those course offerings in voc teacher ed, see ag ed, bus ed (office occupations and distributive ed), guidance and counseling, and home ec.

200 (s) **Seminar** (cr arr). Prereq: perm.

203 (s) **Workshop** (cr arr). Prereq: perm.

204 (s) **Special Topics** (cr arr).

270 Technical Competence I (1-10 cr, max 10). Cr may be awarded to students who are recommended by the State Dept of Voc Ed, in cooperation with UI, as qualified to teach in the tech phase of a voc subject matter. Cr for tech competency will not qualify toward fulfilling sr residency requirements. Grades for successful completion of 270, 370, and 470 will be entered as P (pass). Prereq: 9 cr in residence in voc teacher ed.

299 (s) **Directed Study** (cr arr). Prereq: perm.

322 Voc Guidance (3 cr). See Guid 322.

351 Prin of Voc Ed (2 cr). See AgEd 351.

370 Technical Competence II (1-10 cr, max 10). See 270. Prereq: completion of jr yr in voc teacher ed.

400 (s) **Seminar** (cr arr). Prereq: perm.

403 (s) **Workshop** (cr arr). Graded P/F. Prereq: perm.

404 (s) **Special Topics** (cr arr).

420 Eval in Voc Ed (3 cr). See IEd 420.

443 Intro to Special-Needs Ed (1 cr). History, background, and concept of special needs.

444 Identifying Special-Needs Students (2 cr). Emphasis on methods of assessment and eval. Prereq or coreq: 443.

445 Special-Needs Methods (3 cr). Modifying voc programs for students with special needs.

450 Industrial Safety (3 cr). See IEd 450.

451 School Shop Planning and Admin (3 cr). See IEd 451.

461 Occupational and Job Analysis (3 cr). Methods, tech, and procedures in analyzing occupations and jobs into their basic elements.

462 Voc Ed Curriculum (3 cr). See IEd 462. Prereq: 461 or perm.

470 Technical Competence III (1-10 cr, max 10). See 270. Prereq: enrollment in the final semester of the degree prog in voc teacher ed.

472 Voc Ed Methods (3 cr). See IEd 472.

473 Intro to Adult Ed (3 cr). Orientation; importance, historical dev, org, curriculum, problems, and trends.

474 Psych of Adult Learners (3 cr). Psych, social, and physiological characteristics of adult learners; relationships to family, friends, and fellow citizens.

480 Adv Technical Competency (1-6 cr, max 6). Experiences to enable the indiv to gain depth in tech competency beyond the basic certification requirements, and to maintain skills in harmony with current industrial practice. Prereq: perm.

481 Foundations of Voc Ed (2 cr). Business-industry and indiv needs related to various approaches to voc ed.

493 Teaching Distributive Ed (3 cr). See BusEd 493.

494 Distributive Ed Materials (2 cr). See BusEd 494.

495 Supervising DECA Programs (2 cr). See BusEd 495.

496 Directed Work Experience (2 cr). See BusEd 496.

497 Coordination Techniques (3 cr). See BusEd 497.

498 Practicum in Tutoring (1 cr, max 2). Tutorial services performed by adv students under faculty supervision. Graded P/F. Prereq: perm.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 (s) **Special Topics** (cr arr).

513 Org of Voc Ed (2 cr). Federal, state, and local org of the support and conduct of voc programs.

524 Issues in Distributive Ed (3 cr). See BusEd 524.

540 Occupational Orientation Programs (3 cr). Design of programs for occupational orientation and experimentation.

570 Development of Voc Ed (3 cr). Voc ed prog from ancient apprenticeship to current practices.

597 (s) **Practicum** (cr arr). Appl of theories and tech; supervised field experiences in selected settings. Graded P/F. Prereq: perm.

598 (s) **Internship** (cr arr). Supervised experience in teacher ed, amin, supervision, or ancillary services in voc ed. Graded P/F. Prereq: perm.

599 (s) **Research** (cr arr). Prereq: perm.

Zoology—Zool

Kenneth A. Laurence, Head, Dept. of Biological Sciences (115 Life Sc. Bldg.). Faculty: Joseph G. Cloud, Victor P. Eroschenko, J. Homer Ferguson, O. Clifford Forbes, Donald R. Johnson, Earl J. Larrison, Kenneth A. Laurence, Thomas A. McKean, Rodney A. Mead, Fred W. Rabe, Arthur W. Rourke, Richard L. Wallace.

119 Human Anatomy and Physiology (5 cr). Three lec and two 2-hr recitation-labs per wk.

323 Comparative Vertebrate Embryology (4 cr). Organogeny, ovulation, fertilization, cleavages, hormonal control, experimental methods; frog, chick, and pig dev. Two lec and two 3-hr labs per wk. Prereq: Biol 202.

324 Comparative Vertebrate Anatomy (4 cr). General vertebrate anatomy and evolutionary changes in organ systems. Two lec and two 3-hr labs per wk. Prereq: Biol 202.

366 Histological Technique (2 cr). Methods of fixing, sectioning, staining, and mounting. Two 3-hr labs per wk. Prereq: Biol 202.

384 Bird Ident (2 cr). Field and lab ident of birds. One 3-hr lec-lab per wk for second 8 wks; six 1-day field trips. Prereq: course in biol.

411 Comparative Vertebrate Reproduction (3 cr). Physiology of major events in reproductive cycles of vertebrates with emphasis on mammals. Prereq: Biol 202.

412 Comparative Vertebrate Reproduction Lab (2 cr). Lab study of the estrous cycle, pregnancy, and hormonal control of these events in rats. One 3-hr lab per wk. Prereq or coreq: 411 or AnSc 452.

414 Cell Physiology (3 cr). Experimental investigations of cells. Prereq: organic chem, Chem 380, and Biol 201; Biol 202 recommended.

415 Cell Physiology Lab (2 cr). Current methodology to in-

vestigate a variety of functions in several eukaryotic cell types. One 3-hr lab per wk.

416 Mammalian Physiology (4 cr). Organs and organ systems of vertebrates; emphasis on mammals. Three lec and one 3-hr lab per wk. Prereq: Biol 202 and organic chem.

417 Endocrine Physiology (3 cr). See AnSc 451.

427 Vertebrate Histology and Organology (4 cr). Microscopic anatomy of tissues and major mammalian organs. Two lec and two 3-hr labs per wk. Prereq: Biol 202.

WS431 Population Dynamics (3 cr). Math approach to the study of natural animal populations. Prereq: 4 courses in biol, one course in calculus, and perm.

435 Limnology (3 cr). See FWR 415.

436 Limnology Lab (1 cr). See FWR 416.

478 Ethology (2 cr). Intro to the natural behavior of wild animals. Three 1-day field trips. Prereq: upper-div natural hist course.

481 Ichthyology (4 cr). Same as FWR 411. Anatomy, taxonomy, physiology, distribution, and ecological relationships of fishes. Three lec and one 3-hr lab per wk; two 1-day field trips; field labs. Prereq: Biol 202.

482 Natural History of Birds (3 cr). Two lec and one 3-hr lab per wk; two 1-day field trips. Prereq: Biol 202 or perm.

483 Natural History of Mammals (3 cr). Two lec and one 3-hr lab per wk. Prereq: Biol 202 or perm.

484 Invertebrate Zoology (5 cr). Morphology of freshwater, marine, and terrestrial invertebrates and phylogeny of major groups. Three lec and two 3-hr labs per wk; one 5-day field trip. Prereq: Biol 202 or perm.

487 Protozoology (3 cr). Classification, morphology, physiology, and ecology of protozoa. Two lec and one 3-hr lab per wk. Prereq: Biol 202.

488 Parasitology (3 cr). Animal parasites, emphasis on those of man, ident and preservation of local forms. Two lec and one 3-hr lab per wk. Prereq: Biol 202 or perm.

489 Herpetology (3 cr). Evolution, taxonomy, and biol of amphibians and reptiles. Two lec and one 3-hr lab per wk; one 4-day field trip and field labs. Prereq: Biol 202.

499 (s) **Directed Study** (cr arr). Prereq: perm.

500 Master's Research and Thesis (cr arr).

501 (s) **Seminar** (cr arr). Prereq: perm.

502 (s) **Directed Study** (cr arr). Prereq: perm.

503 (s) **Workshop** (cr arr). Prereq: perm.

504 Special Topics (cr arr). Graded P/F. Prereq: perm.

513 Comparative Animal Physiology (3 cr). Alt/yrs 79-80. Physiology, morphology, evolution, and ecology of various animal groups. Prereq: 415 or 416.

WS514 Neurophysiology (3 cr). Alt/yrs 79-80. WSU 562. Structure and function of nervous tissues; org of nervous systems; variations in nervous systems relating to plasticity of behavior. Prereq: 416.

WS515 Adv Vertebrate Physiology (4 cr). Alt/yrs 79-80. WSU 557. Principles of vertebrate physiology illustrated through contemporary analyt and instrumental procedures. Prereq: 416.

536 Hydrobiology (4 cr). Alt/yrs 79-80. Freshwater ecology; water chem, primary and secondary production, microinvertebrates, investigation of nearby lotic and lentic environments. Three lec and one 3-hr lab per wk; field labs. Prereq: perm.

538 Zoogeography (2 cr). Same as Geog 526. Dynamics and causes of distribution of animals in time and space. Prereq: perm.

600 Doctoral Research and Dissertation (cr arr).

Agricultural Experiment Station

Raymond J. Miller, Director (51 Iddings Wing, Ag. Sc. Bldg.).

The Idaho Agricultural Experiment Station was established in 1892 as a division of the College of Agriculture and has the responsibility to conduct research in all areas of food production and related businesses. The experiment station is the research division of the college and is administratively coordinated with the teaching and extension divisions of the college.

The Agricultural Experiment Station is composed of all departments of the college with the exception of the Department of Agricultural Education. Thus, most of the teaching faculty in the college also have part-time appointments in the experiment station. A few individuals have dual appointments between teaching and extension; selected individuals have a three-way appointment among teaching, research, and extension; several staff members on campus are assigned to full-time research.

The Idaho agricultural research program is statewide. Research activities are conducted with all major agricultural commodities and resources and in all major livestock- and crop-producing areas. The headquarters for the research program is on the campus of the University of Idaho. In addition, there are seven research and extension centers in strategic agricultural areas around the state where resident research personnel are located.

The Idaho Agricultural Experiment Station shares the responsibility of developing and training future scientists through graduate fellowship programs. Currently there are approximately one hundred graduate students enrolled in the College of Agriculture of which about one-half hold graduate assistantships. These appointments are for an average of two years, during which time the students conduct research as a part of their graduate training.

Bureau of Educational Research and Service

Everett V. Samuelson, Director (301 Educ. Bldg.).

The Bureau of Educational Research and Service was established to conduct research, to facilitate research among 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 bureau. The Upward-Bound Program, designed to help youths from low-income families achieve a college education, is housed in the bureau.

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

The Bureau of Educational Research and Service is financed in part through cost-reimbursement funds from state and federal sources.

Bureau of Public Affairs Research

H. Sydney Duncombe, Director (207 Admin. Bldg.); Roger F. Snider, Assistant Director.

The Bureau of Public Affairs Research is an integral part of the Department of Political Science and Public Affairs Research. Since its founding, the bureau has completed many research projects concerned with a broad spectrum of state and local government activities in Idaho, such as city and county government, state legislature, state and local politics, election statistics, and special taxing districts.

In addition to its research function, the bureau offers training services on a large scale. Since 1968, the bureau has conducted statewide seminars for both state and local governmental officials. These include training institutes for elected city and county officials, city clerks and treasurers, special taxing district officials, state legislators, and state agency fiscal officers. The bureau has conducted a series of workshops for secondary teachers of Idaho state and local government, and has developed a high school text and a supplementary reader on Idaho state and local government and politics. The bureau also provides consulting services to state and local agencies. Bureau personnel have assisted personnel of the Idaho Budget Division, the Idaho Fiscal Budget Committee, the Idaho Committee on Accounting and Data Processing, the Idaho Constitutional Revision Commission, and the Idaho Citizens Committee on the State Legislature.

In its training and research activities, the bureau has maintained close cooperative relationships with similar agencies within other institutions of higher learning in the state. The bureau has sponsored a number of training programs in cooperation with the Government Research Institute at Idaho State University, and has also worked closely with the Departments of Political Science at Boise State University, the College of Idaho, Ricks College, and Northwest Nazarene College.

Inquiries from public and private sources are continually directed to the bureau. Bureau staff members respond to all inquiries and provide information in response to specific questions when the information is available. The bureau has developed a current library of publications from Idaho and other states which it maintains through reciprocal exchange agreements with other bureaus and state agencies throughout the nation.

Center for Business Development and Research

Dean, College of Business and Economics (211B Admin. Bldg.).

The College of Business and Economics' Center for Business Development and Research is dedicated to providing publications, research data, and continuing management education programs that are helpful to the Idaho business and management community.

Center publications include *Centerpoint,* which contains articles of interest to the Idaho business community on research or public policy in business, or management, and has a quarterly distribution of about 7,000 copies; the *Manufacturing Directory of Idaho* with about 1,000 firms listed; the Journal Paper Series on various topics relevant to business and economics; and the *Idaho Statistical Abstract.*

Support of faculty research activities is another important focus of the center. Over the past years center funding and support services have been used to help complete a wide variety of projects, and administrative assistance has been provided to faculty who have received research funding from sources outside the college. In addition, the center administers several contracted research projects.

The center's continuing management education efforts are focused on four main areas: local workshops dealing with practical problems facing the small business community, specially designed programs for larger organizations, supervisory and management training programs for UI personnel, and an annual Inland Empire Business Outlook Conference held in December.

Computer Services

William V. Accola, Director (127 Admin. Bldg.).

Computer Services provides facilities for instructional, research, and computational needs of members of the university community, for federal, state, and other governmental agencies, and for other groups and individuals when this service appears to be in the best interests of the university and the state of Idaho.

The center is equipped with an IBM 370 model 145 with tape, disk, card, and printer, and other subsidiary equipment. It maintains a library of computer programs and provides consulting assistance in programming and in the use of the library and other computer facilities. A key-punch and verification service is also available.

Short courses in computer languages, job control, and related subjects are offered periodically. Formal courses in programming and computer science are offered by the Departments of Business, Electrical Engineering, General Engineering, and Mathematics.

Cooperative Extension Service

James L. Graves, Director (54 Iddings Wing, Ag. Sc. Bldg.).

The Cooperative Extension Service was first financed by the Smith-Lever Act of Congress, approved May 8, 1914, to help people of the United States improve their farms, homes, and communities. The Idaho legislature approved the cooperative extension service concept in 1915. In 1917, additional state legislation brought county commissioner boards into the three-way partnership of financing and cooperation.

The headquarters of the Cooperative Extension Service is at Moscow. District offices are located at Boise, Twin Falls, Pocatello, and Moscow.

Agricultural agents and home economists work in forty-two of Idaho's forty-four counties and on the Fort Hall Indian Reservation. Area agents and/or specialists, those who work in several adjoining counties with farmers and ranchers who produce specific crops and livestock, are headquartered in Blackfoot, Idaho Falls, Caldwell, Soda Springs, Twin Falls, Coeur d'Alene, and St. Anthony.

Agents live and work in the areas to which they are assigned by mutual agreement of the university and the counties involved. They are backed by a corps of resource people. They receive training in subject matter from state extension specialists located in Moscow, Boise, Caldwell, and Twin Falls. These specialists, in turn, are kept up to date by research scientists of the College of Agriculture and the U.S. Department of Agriculture.

The primary objective of the Idaho Cooperative Extension Service is to make Idaho a satisfying and desirable state in which to live, work, raise families, and enjoy a high quality of life. To accomplish this objective, the extension service works under the basic philosophy that programs planned with people will achieve greater success than those planned for them.

Educational programs in cooperative extension work are conducted in four broad areas. These are: (1) agriculture and natural resources,

(2) community resource development, (3) family living, and (4) 4-H, youth development.

Engineering Experiment Station

Robert R. Furgason, Director (125 Janssen Engr. Bldg.).

The function of the Engineering Experiment Station is to encourage and coordinate the College of Engineering's research and extension programs which 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 no separate research facility or a separate research staff. The College of Engineering requires that any research it undertakes have academic significance. This precludes work that is limited to applying already available knowledge or methods to given problems in previously demonstrated ways. However, a large part of the college's research program deals with developing new knowledge needed to attack Idaho's problems 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 university 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 and technicians. Staff members also endeavor to provide information to the entire population of Idaho that may contribute to the successful solving of societal problems.

Forest, Wildlife and Range Experiment Station

John H. Ehrenreich, Director (202 FWR Bldg.); Ali A. Moslemi, Associate Director; Maurice G. Hornocker, Leader, Cooperative Wildlife Research Unit; Theodore C. Bjornn, Leader, Cooperative Fishery Unit.

All members of the faculty of the College of Forestry, Wildlife and Range Sciences are also on the staff of the experiment station, on joint teaching-research appointments. 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. Most of the graduate students currently enrolled in the college are on assistantships provided through station projects.

The station staff conducts research on a wide variety of problems in the areas of forest management, wood technology, range management, recreation, wildlife, and fisheries. A sizable number of projects are also interdisciplinary in nature, dealing with environmental and other problems related to renewable natural resources. Funds for the station are provided by the university, by several state departments, and by grants from federal and other outside sources. Currently about sixty percent of these funds come from outside sources.

Idaho Bureau of Mines and Geology

Maynard M. Miller, Chief (206 Mines Bldg.); Carleton N. Savage, Associate Chief (340 Morrill Hall); Business Office (332 Morrill Hall).

The Idaho Bureau of Mines and Geology, functioning under the Idaho State Department of Lands and cooperating with the College of Mines, performs applied field and laboratory research related to the geology, mineral resources, and mineral engineering problems of the state. The bureau 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 bureau and the educational programs of the College of Mines 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 bureau. The bureau staff and that of the College of Mines share equipment, as well as the specialized expertise of both groups. Bureau personnel, who are experienced in both applied and academic areas, are available to any department of the university for advice, consultation, and lecturing. Most professional scientists in the bureau are also regular members of the university faculty. Whenever possible, students in the College of Mines are offered part-time or summer work as assistants to bureau professionals, frequently on projects that are funded by grant monies available for some bureau programs. High quality graduate student dissertations, when in accord with the bureau's mission and with proper permission, are often published in one of the several bureau formats.

Although equipment used by the bureau is housed both in the College of Mines Building and Morrill Hall, the principal business office of the bureau and most bureau personnel are located in Morrill Hall. Here, also, the bureau 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 University Library is a repository for the many valuable American and worldwide publications received through the bureau's publication exchange program.

Idaho Mining Research Bureau

Maynard M. Miller, Director (206 Mines Bldg.).

Staff members of the Idaho Mining Research Bureau conduct applied research and perform specialized teaching in both undergraduate and graduate courses in the College of Mines. Industry problems that require special capabilities and interdisciplinary study not usually available in most industrial organizations are referred to this bureau for investigation. Facilities, such as detailed ventilation and environmental laboratories, are provided for special research projects; these later become available for graduate student research and for teaching. Funds and projects are derived from government and private sources that wish to promote work on specific problems.

Idaho Research Foundation and Related Programs

Robert N. Coonrod, Acting Coordinator of Research (111 Morrill Hall); Elizabeth E. Stevenson, Assistant Coordinator of Research.

The Idaho Research Foundation is a statewide, nonprofit corporation that (a) facilitates and expedites research management; (b) functions as an agent of education; (c) encourages, fosters, aids, and conducts scientific and industrial investigations and research; (d) disseminates scientific knowledge and technical information; (e) administers the excess/surplus property program; (f) reviews all inventions owned by the university and submitted to the foundation, and initiates patent-licensing arrangements on those accepted by the foundation; and (g) reviews written works owned by the university and publishes those accepted by the foundation.

The Short-Term Applied Research program (STAR), administered by the foundation, involves researchers from institutions of higher education throughout the state. The goal of the program is to stimulate research on projects that show promise of concrete economic return to the state in the short term. STAR has also provided the "seed" funds for several projects that might not have been started otherwise and that have subsequently generated greater support from external sources.

The Research Council is the faculty's standing committee that oversees the implementation of research policies and resolves disagreements about the interpretation and implementation of those policies.

Idaho Water Resources Research Institute

John S. Gladwell, Director (B-40 Janssen Engr. Bldg.); E. F. Trihey, Assistant Director.

In an effort to ensure coordinated research and provide leadership to the state, the regents created the Idaho Water Resources Research Institute at the University of Idaho on October 24, 1963. Subsequently, the institute was designated by the Office of Water Resources Research of the U.S. Department of the Interior to stimulate, sponsor, provide for, and supplement research programs in the field of water resources. Since then the institute has served the state by formulating and coordinating research programs intended to assure the state, region, and nation of a water supply sufficient in both quantity and quality.

Water resources planning, development, and management is a composite of many disciplines. Consequently, the Idaho Water Resources Research Institute believes that educational needs are met best not necessarily by "water resources engineers" or "water resources scientists," per se, but by individuals with strong basic education in a traditional academic department tempered by a program of directed study in water resources problems and professional practice. The university has developed procedures that encourage existing schools and departments to strengthen their programs in the light of the special needs of 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.

Specifically, the objectives of the institute are: (1) to increase, improve, and coordinate the efforts of the various university divisions and departments involved in water resources research; (2) to strengthen and coordinate undergraduate programs and course offerings so that the university can supply well-trained teachers and leaders; and (3) to gather, disseminate, and coordinate ideas and research findings between the university and various federal, state, local, and civic organizations interested in water resources.

Institute of Human Behavior

Boyd A. Martin, Director (401 Faculty Office Complex West).

The two major objectives of the Institute of Human Behavior are: (1) to engage in research to

gain more knowledge concerning man's behavior, whether economic, political, social, psychological, or physiological, for the purpose of gaining a deeper understanding of violence and war, hoping that the causes of behavior are subject to social control; and (2) to disseminate and make available to students by publications, conferences, and courses knowledge that man now possesses that will enable the student to gain an introduction to, and a deeper understanding of, current problems of violence and war. Both of these objectives are based on the assumption that violence and war represent major threats to the continuation of organized society.

Laboratory of Anthropology

Roderick Sprague, Director (101 Faculty Office Complex West); Ruthann Knudson, Resource Management Archaeologist.

The Laboratory of Anthropology, established in 1968, serves as the research arm of the Department of Sociology/Anthropology for investigations in archaeology, ethnology, linguistics, and physical anthropology. Major contractual research has been concentrated in historical and prehistoric archaeology for the National Park Service and the U.S. Corps of Engineers, burial relocation for several Northwest American Indian tribes, and archaeological survey for the U.S. Forest Service and the Bureau of Land Management. The Laboratory serves as the main clearinghouse and repository for all north 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 ecological impact statements for industry and government.

Modern and well equipped facilities for the cleaning, perservation, casting, and analysis of both historic and prehistoric artifacts are contained in the laboratory. The metal artifact cleaning facilities are the largest and best equipped in the country. The laboratory also provides space and facilities for research associates, graduate student research, and teaching and comparative collections.

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 prior to reburial, the project must have the approval of the tribal authorities concerned.

General Faculty

Richard D. Gibb, President; Robert W. Coonrod, Academic Vice President; Elizabeth E. Stevenson, Chairman of the Faculty Council (1977-78); R. Bruce Bray, Secretary of the University Faculty.

The general faculty includes all active and emeritus members of the university faculty, cooperative extension faculty, and affiliate faculty. The university faculty—one segment of the general faculty—is the faculty's highest legislative body and is responsible, under the university's charter and article IX, section 10, of the state constitution, for the immediate government of the university. Membership in the university faculty is limited to the following: president, vice presidents, deans, professors, associate professors, assistant professors, senior instructors, instructors (including those whose academic ranks have research and visiting designations), and such administrative and service officers as the president may designate each year.

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 academic or extension rank shown.

The following list was compiled December, 1, 1977, and includes the members of the general faculty with the exception of the affiliate professors at INEL, Idaho Falls, who are listed in the separate bulletin of the INEL Education Program.

*FAY C. AANERUD, 1977, Extension Instructor and Franklin County Extension Home Economist, Preston; B.S., 1974, North Dakota State; M.S., 1976, Texas Womens.

M. AUDREY AARON, 1971 (1976), Professor of Foreign Languages and Literatures (Spanish); A.B., 1934, Mount St. Scholastica; A.M., 1950, Ph.D., 1952, Johns Hopkins.

ERNEST D. ABLES, 1974, Professor of Wildlife Resources, Associate Dean, College of Forestry, Wildlife and Range Sciences, 1974-; B.S., 1961, Oklahoma State; M.S., 1964, Ph.D., 1967, Wisconsin.

BARBARA B. ABO, 1976, Extension Instructor and Minidoka County Extension Home Economist, Rupert; B.S., 1972, Wisconsin; M.S., 1975, Iowa State.

WILLIAM V. ACCOLA, 1973, Director, Computer Services, 1973-; B.S., 1965, Oklahoma State; M.A., 1968, Missouri.

DAVID L. ADAMS, 1971 (1975), Professor and Chairman of Forest Resources; B.S., 1959, Oklahoma State; M.F., 1961, Idaho; Ph.D., 1969, Colorado State.

*DONALD E. ADAMS, 1975, Affiliate Clinical Professor of Medical Science, Moscow; B.A., 1949, Wyoming; M.D., 1953, St. Louis.

DOUGLAS Q. ADAMS, 1972 (1976), Associate Professor of English; B.A., 1968, M.A., 1971, Ph.D., 1972, Chicago.

*RICHARD M. ALFORD, 1975, Affiliate Clinical Professor of Medical Science, Lewiston; B.S., 1945, Ursinus; M.D., 1949, Michigan.

*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 (1971), Associate Extension Professor and Caribou County Extension Agricultural Agent, Soda Springs; B.S.Ag., 1950, Idaho.

*ALVIN R. ALLER, 1958 (1972), Professor Emeritus of Botany; B.S., 1931, Bethany; M.S., 1932, Kansas State; Ph.D., 1949, Oregon State. Emeritus since 1972 (now residing in Moscow).

*FLORENCE D. ALLER, 1962 (1971), Professor of Home Economics and Department Head Emerita (Head, Department of Home Economics, 1971-1974); A.B., 1930, Bethany-Peniel; M.S., 1947, Oregon State; Ed.D., 1962, Idaho. Emerita since 1974 (now residing in Moscow).

HENRY M. ALLEY, 1975, Assistant Professor of English; B.A., 1967, Stanford; M.F.A., 1969, Ph.D., 1971, Cornell.

*SHARON E. ALLRED, 1970 (1974), Assistant Extension Professor and Jerome County Extension Home Economist, Jerome; B.A., 1970, Idaho State.

JEANNETTE ALLYN, 1974, Affiliate Professor of Dance (Codirector, Ballet Folk of Moscow); B.A., 1965, San Francisco State.

DON A. AMOS, 1963, Business and Real Estate Manager, 1974-; B.S.Bus., 1952, Idaho.

DOYLE E. ANDEREGG, 1967, Professor of Biology and Fiscal and Personnel Assistant to the Dean, College of Letters and Science (Head, Department of Biological Sciences, 1967-1975); B.S., 1952, M.S., 1957, Ph.D., 1959, Ohio State.

CLIFTON E. ANDERSON, 1972 (1977), Associate Professor of Agricultural Information; Associate Extension Professor; Associate Agricultural and Extension Editor; B.S., 1947, Wisconsin; M.A., 1956, California (Berkeley).

GEORGE A. ANDERSON, 1961-1974, 1977 (1977), Visiting Assistant Professor of Accounting (Controller, 1971-1974); B.S., 1958, M.Acctg., 1966, Idaho.

GUY R. ANDERSON, 1946 (1968), Professor of Bacteriology; Bacteriologist; Adviser, Pre-Medical Studies; Director, WAMI Medical Program, 1972-; B.S.Ag., 1942, M.S.Ag., 1947, Idaho; Ph.D., 1956, Washington State.

*JOANNE K. ANDERSON, 1968 (1973), Assistant Extension Professor and Latah County Extension Home Economist, Moscow; B.S.Ed., 1968, Idaho.

*RUTH ANDERSON, 1946 (1970), Professor Emerita of Office Administration; B.A., 1926, M.S.Ed., 1941, Idaho. Emerita since 1970 (now residing in Moscow).

*ALLAN S. ANDREW, 1975, Assistant Extension Professor and District Extension 4-H Specialist, Twin Falls; B.S., 1970, M.S., 1975, Utah State.

AHMED A. ARAJI, 1968 (1977), Professor of Agricultural Economics (Production Economics); Agricultural Economist; B.S., 1962, M.Sc., 1964, Nebraska; Ph.D., 1968, Missouri.

ELDON D. ARCHAMBAULT, 1971, Professor of Education; B.A., 1945, Northern Iowa; M.A., 1948, Ph.D., 1967, Iowa.

BENEDICT G. ARCHER, 1977, Assistant Professor of Veterinary Medicine; Physical Chemist; B.S., 1964, D.V.M., 1966, California (Davis); Ph.D., 1975, Washington State.

*WILLIAM B. ARDREY, 1939 (1945), Professor of Veterinary Science and Veterinary Microbiologist Emeritus; B.S., 1934, Monmouth; M.S., 1936, Ph.D., 1939, Michigan State. Emeritus since 1974 (now residing in Bandon, Oreg.).

TERRY R. ARMSTRONG, 1969 (1975), Professor of Education; B.S., 1959, Southern Mississippi; M.Nat.Sc., 1963, Ed.D., 1969, Idaho.

*NANCY I. ATKINSON, 1943 (1972), Catalog Librarian Emerita with rank of Professor (Head, Catalog Department, 1943-1972); A.B., 1935, A.B.L.S., 1936, Michigan. Emerita since 1972 (now residing in Moscow).

JORG A. L. AUGUSTIN, 1968 (1978), Research Professor of Food Science and Biochemistry; Diplomierter Ingenieur Agronom, 1955, Eidgenoessische Technische Hochschule, Zurich; M.S., 1957, Illinois; Ph.D., 1964, Michigan State.

DICK L. AULD, 1976, Assistant Professor of Plant Science; B.S., 1970, M.S., 1974, New Mexico State; Ph.D., 1976, Montana State.

JASPER R. AVERY, 1959 (1962), Assistant Professor of Mechanical Engineering; B.S.M.E., 1957, Idaho.

*JOHN M. AYERS, 1975, Affiliate Clinical Professor of Medical Science, Moscow; B.S., 1940, Idaho; M.D., 1942, Rush.

*JOHN M. AYERS, JR., 1977, Affiliate Clinical Professor of Medical Science, Moscow; B.A., 1966, Idaho; M.D., 1970, Washington (Seattle).

DANIEL P. BABB, 1969-1970, 1977 (1977), Visiting Associate Professor of Chemistry; B.A., 1963, Mankato State; Ph.D., 1967, Idaho.

*JAMES W. BAILEY, 1953 (1972), Professor Emeritus of Veterinary Science; B.Ed., 1935, Western Illinois State Teachers; D.V.M., 1943, Texas A&M. Emeritus since 1972 (now residing in Moscow).

*CRAIG R. BAIRD, 1974, Assistant Extension Professor and Area Extension Entomologist, Caldwell; B.S., 1967, M.S., 1967, Utah State; Ph.D., 1973, Washington State.

DENNIS W. BAIRD, 1974 (1978), Social Science Librarian with rank of Associate Professor; B.A., 1966, Hawaii; M.A., 1970, Michigan State; M.L.S., 1970, Michigan.

LYNN C. BAIRD, 1974, (1977), Assistant Social Science and Catalog Librarian with rank of Assistant Professor; B.A., 1972, Pacific (Stockton, Calif.); M.L.S., 1974, Oregon.

*THOMAS D. BAIRD, 1975, Affiliate Clinical Professor of Medical Science, Moscow; B.S., 1932, Western Reserve; M.D., 1941, Syracuse.

*G. ORIEN BAKER, 1935 (1946), Professor Emeritus of Soils; B.S., 1923, M.S., 1924, Washington State. Emeritus since 1966 (now residing in Moscow).

*WILLIAM H. BAKER, 1948 (1958), Professor Emeritus of Botany (Head, Department of Biological Sciences, 1956-1967); B.S., 1935, M.S., 1942, Ph.D., 1949, Oregon State. Emeritus since 1972 (now residing in Eugene, Oreg.).

DONALD C. BALDRIDGE, 1969 (1974), Associate Professor of History (Latin American History); B.A., 1960, Idaho; Ph.D., 1971, Arizona.

JO ANN BALDRIDGE, 1972 (1974), Associate Registrar; B.A., 1968, Southern State (Arkansas); M.A., 1972, Idaho.

JERRY A. BANCROFT, 1973 (1978), Associate Professor of Architecture; B.Arch., 1968, Southern California; M.Arch., 1971, Washington.

DAVID S. BARBER, 1968 (1974), Associate Professor of English; A.B., 1962, Hamilton; M.A., 1963, Ph.D., 1968, Michigan.

*J. WARREN BARBER, 1920 (1955), Extension Professor Emeritus (Extension 4-H Club Agent for Cassia County, 1920-21; Extension Agricultural Agent for Cassia County, 1921-1927; District Extension Agent, 1927-1939; County Agent Leader, 1940-1950; Extension Study Specialist, 1950-1955); B.S.Ag., M.S.Ag., Idaho. Emeritus since 1955 (now residing in Boise).

EROL BARBUT, 1967 (1976), Associate Professor of Mathematics; B.A., 1963, California (Berkeley); M.A., 1965, Ph.D., 1967, California (Riverside).

DOROTHY T. BARNES, 1969 (1977), Associate Professor of Music (Voice); B.Mus., 1948, M.Mus., 1964, Idaho.

WILLARD BARNES, 1965 (1970), Associate Professor of History (American History); B.S.Ed., 1949, M.S.Ed., 1950, Idaho; Ph.D., 1968, Washington State.

WILLIAM P. BARNES, 1957 (1963), Professor of Mechanical Engineering; Department Chairman, 1974-; B.S.M.E., 1947, Idaho; M.M.E., 1949, Yale; Ph.D., 1973, Illinois; P.E.

*JOHN L. BARNHART, 1934-1935, 1956 (1974), Professor Emeritus of Food Science; B.S., 1930, Pennsylvania State; M.S., 1932, West Virginia; Ph.D., 1940, Pennsylvania State. Emeritus since 1974 (now residing in Moscow).

ROBERT M. BARON, 1974, Assistant Professor of Architecture; B.Arch., 1972, Oregon; M.Arch., 1973, Washington (Seattle).

WILLIAM F. BARR, 1947 (1958), Professor of Entomology; Entomologist; B.S., 1945, M.S., 1947, Ph.D., 1950, California (Berkeley).

JAMES L. BARRUS, 1949 (1978), Associate Professor of Chemistry; Director, General Chemistry Laboratories; B.S., 1949, Wyoming; M.S., 1956, Idaho.

*CHARLES G. BARTELL, 1950 (1968), Professor Emeritus of Architecture; B.Arch., 1949, Washington (Seattle); M.S.Arch., 1950, Columbia. Emeritus since 1973 (now residing in Moscow).

*MARY J. BARTLETT, 1977, Affiliate Professor of Special Education; B.S., 1971, M.S.P.A., 1975, Washington (Seattle).

LeROY O. BAUER, 1956 (1961), Professor of Music (Viola, Chamber Music); B.S.Mus.Ed., 1941, Wisconsin (Milwaukee); M.Mus., 1946, Northwestern.

*MABEL R. BEATTIE, 1925 (1965), Professor Emerita of Foreign Languages (Latin, French); B.A., 1923, Idaho; M.A., 1925, Radcliffe, Emerita since 1967 (now residing in Moscow).

MICHAEL L. BEATTY, 1974 (1977), Professor of Law; A.B., 1969, California (Berkeley); J.D., 1972, Harvard.

*CLARENCE D. BECHTOLT, 1944 (1965), Extension Professor Emeritus (Extension Agricultural Agent for Canyon County, 1944-1965); B.S.Ag., 1924, Colorado State. Emeritus since 1965 (now residing in Caldwell).

RICHARD J. BECK, 1957 (1971), Associate Director of Libraries with rank of Professor; B.A., 1949, St. Thomas; B.S.L.S., 1950, M.A., 1955, Minnesota.

SIDNEY M. BECK, 1951 (1972), Professor of Bacteriology; Bacteriologist; A.B., 1941, M.A., 1948, Brigham Young; Ph.D., 1951, Pennsylvania State.

RICHARD W. BEESON, 1972, Assistant Professor of Sociology; B.A., 1960, M.A., 1962, Ph.D., 1971, New Mexico.

GEORGE M. BELL, 1949 (1955), Professor of Law; B.S., 1935, Utah State; J.D., 1940, George Washington.

*ROY A. BELL, 1950 (1972), Professor Emeritus of Photography; B.A., 1938, M.A., 1954, Idaho. Emeritus since 1972 (now residing in Moscow).

*T. DONALD BELL, 1957, Professor of Animal Sciences and Department Head Emeritus (Head, Department of Animal Science, 1957-1970); B.S.Ag., 1932, M.S.Ag., 1936, Idaho; Ph.D., 1939, Wisconsin. Emeritus since 1975 (now residing in Moscow).

THOMAS O. BELL, 1966-1970, 1971 (1971), Professor of Education; Director, Division of Teacher Education, 1971-; Associate Dean, College of Education, 1974-; B.A., 1953, M.A., 1958, Idaho State; Ed.D., 1966, Utah State.

WAYNE S. BELLES, 1976, Assistant Professor of Weed Science and Weed Scientist; B.S., 1959, M.S., 1962, Washington State; Ph.D., 1970, Arizona.

GLADYS I. BELLINGER, 1960, Professor of Home Economics (Child Development) (Department Head, 1960-1967); B.S., 1933, Kansas State (Emporia); M.S., 1948, Ph.D., 1950, Cornell.

GEORGE H. BELT, JR., 1965 (1978), Professor of Forest Resources (Watershed Management); Chairman, Faculty Council, 1972-1973; B.S., 1960, North Carolina State; M.F., 1962, Yale; D.F., 1968, Duke.

DAVID H. BENNETT, 1975, Assistant Professor of Fishery Resources; B.S., 1964, M.S., 1968, Connecticut.

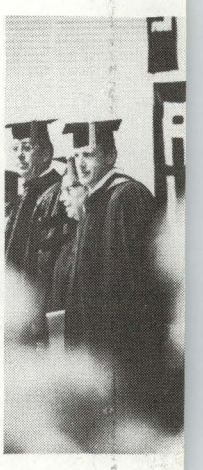
*EARL H. BENNETT II, 1977, Affiliate Professor of Geology, Walla Walla; B.A., 1968, Delaware; M.S., 1970, North Carolina State (Raleigh); Ph.D., 1973, Idaho.

*ROBERT D. BENTLEY, 1977, Affiliate Professor of Geology, Ellensburg, Wash.; B.A., 1955, Oregon State; Ph.D., 1969, Columbia.

*JOS M. BENTVELZEN, 1974, Affiliate Professor of Chemical Engineering, Seattle, Wash.; B.S., 1964, Academic Minerva (Netherlands); M.S., 1971, Ph.D., 1972, North Carolina State.

*HERBERT A. BERMAN, 1952 (1957), Professor Emeritus of Law; A.B., 1924, J.D., 1927, Harvard. Emeritus since 1967 (now residing in Moscow).

*RAY M. BERRY, 1947, Professor Emeritus of Education; A.B.,



1917, Illinois College; M.A., 1932, Columbia; Ed.D., 1942, Stanford. Emeritus since 1966 (now residing in Moscow).

EDITH BETTS, 1951 (1968), Professor of Physical Education; Chairman, Physical Education for Women; B.S., 1943, Wisconsin; M.S., 1951, Smith; Ph.D., 1968, Oregon.

*JANE D. BETTS, 1967 (1978), Associate Extension Professor and Washington County Extension Home Economist, Weiser; B.S.H.Ec., 1967, Idaho.

RONALD D. BEVANS, 1970 (1977). Professor of Architecture; B.Arch., 1964, Nebraska; M.Arch., 1965, Washington (Seattle).

MARY K. BIAGGIO, 1977, Assistant Professor of Psychology; B.S., 1973, Northern Michigan; M.S., 1975, Ph.D., 1977, Utah State.

WILLIAM R. BIGGAM, 1959 (1966), Professor of Industrial Education; Chairman, Industrial Education; B.S., 1947, Minnesota (Duluth); M.A., 1948, Minnesota (Minneapolis); Ed.D., 1957, Bradley.

NORRIS A. BIGGERSTAFF, 1977, Affiliate Clinical Professor of Medical Science, Potlatch; B.S., 1956, Berea; M.D., 1960, Bowman Gray.

JAMES A. BIKKIE, 1973 (1976), Professor of Vocational Teacher Education; Division Director, 1973-; B.S., 1956, St. Cloud State; M.A., 1957, Ph.D., 1973, Minnesota.

WILLIAM A. BILLINGSLEY, 1954 (1967), Professor of Music (Theory, Composition); Director, School of Music, 1977-; B.Mus.Ed., 1952, M.Mus., 1953, Drake.

*MAURINE BINGHAM, 1975, Extension Instructor and Oneida County Extension Home Economist, Malad; B.S., 1974, Brigham Young; M.S., 1975, Utah State.

*GUY W. BISHOP, 1957 (1970), Professor of Entomology; Entomologist, Parma; B.S., 1951, M.S., 1953, Oregon State; Ph.D., 1958, Washington State.

ELWOOD G. BIZEAU, 1967 (1977), Professor of Wildlife Resources; Assistant Leader, Idaho Cooperative Wildlife Research Unit; B.S., 1948, Oregon State; M.S.For., 1951, Idaho.

THEODORE C. BJORNN, 1966 (1972), Professor of Fishery Resources; Leader, Idaho Cooperative Fishery Unit; B.S., 1956, Utah State; M.S., 1957, Idaho; Ph.D., 1966, Utah State.

*CHRISTINE M. BJORNSTAD, 1975, Affiliate Clinical Professor of Medical Science, Lewiston; B.S., 1968, Vassar; M.D., 1972, Michigan.

JAMES L. BLACK, 1966 (1976), Associate Professor of Adult Education; B.A., 1949, M.S., 1953, Idaho; Ed.D., 1969, Washington State.

ROBERT E. BLACK, 1954 (1974), Extension Professor and District Extension Supervisor, Moscow; B.S.Ag., 1950, Arkansas; M.S.Ag., 1964, Idaho.

ROBERT H. BLANK, 1971 (1975), Associate Professor of Political Science; Chairman, Department of Political Science and Public Affairs Research, 1977-; B.A., 1965, Purdue; M.A., 1969, Ph.D., 1971, Maryland.

PAUL L. BLANTON, 1958 (1972), Professor of Archtecture; Head, Department of Art/Architecture, 1971-; B.S., 1957, Idaho; M.Arch., 1963, California (Berkeley).

*CARL C. BLICKENSTAFF, 1974, Affiliate Professor of Entomology, Twin Falls; B.S., 1943, Purdue; M.S., 1956, Ph.D., 1956, Iowa State.

GEORGE L. BLOOMSBURG, 1961 (1969), Professor of Agricultural Engineering and Engineering Science; Agricultural Engineer; B.S.Ag.E., 1957, M.S.Ag.E., 1959, Idaho; Ph.D., 1964, Colorado State; P.E.

RAINER BLUM, 1976, Assistant Professor of Geophysics; Diploma, 1970, Hamburg; Doctorate, 1975, Karlsruhe.

*EDWARD L. BOAS, 1975, Affiliate Clinical Professor of Medical Science, Moscow; B.A., 1960, Idaho; M.D., 1964, George Washington.

*RUTH H. BOAS, 1958 (1968), Professor Emerita of English; B.A., 1925, M.A., 1928, Idaho. Emerita since 1968 (now residing in Moscow).

GENE E. BOBECK, 1967 (1972), Associate Professor of Metallurgy; B.A., 1952, Knox; M.S., 1956, Iowa State; Ph.D., 1970, Denver.

LARRY E. BOBISUD, 1967 (1974), Professor of Mathematics; B.S., 1961, College of Idaho; M.S., 1963, Ph.D., 1966, New Mexico.

*GLENN L. BODILY, 1946 (1976), Extension Professor and Owyhee County Extension Agricultural Agent, Marsing; B.S.Ag., 1939, M.S.Ag., 1939, Idaho.

ARTHUR A. BOE, 1967 (1976), Professor of Plant Science; Plant Physiologist; B.S., 1962, Ph.D., 1966, Utah State.

*DARRELL G. BOLZ, 1971 (1976), Associate Extension Professor and Canyon County Extension Agricultural Agent, Caldwell; B.S.Ag., 1966, M.S., 1970, Idaho.

ISABEL E. BOND, 1971 (1974), Instructor in Secondary Education; Director, Upward Bound Program; B.S., 1954, Idaho.

JOHN G. BOND, 1968, Professor of Geology, Senior Geologist; B.S., 1954, Idaho; M.S., 1959, Ph.D., 1962, Washington (Seattle).

CECIL W. BONDURANT, 1962 (1974), Senior Instructor in Radio/Television; B.S., 1952, American Television Institute of Technology.

*JAMES A. BONDURANT, 1969, Affiliate Professor of Agricultural Engineering, Snake River Conservation Research Center, USDA, Kimberly; B.S., 1949, Kansas State; M.S., 1951, Nebraska.

*BILL BONNICHSEN, 1977, Affiliate Professor of Geology, Walla Walla, Wash.; B.S. 1960, Idaho; M.S., 1962, New Mexico Institute of Mining and Technology; Ph.D., 1968, Minnesota.

*LALIA P. BOONE, 1965, Professor Emerita of English (Linguistics); B.A., 1938, East Texas State; M.A., 1947, Oklahoma; Ph.D., 1951, Florida. Emerita since 1972 (now residing in Moscow).

BERNARD C. BORNING, 1949 (1962), Professor of Political Science; B.A., 1936, Ph.D., 1951, Minnesota.

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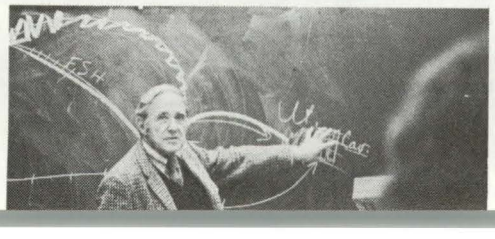

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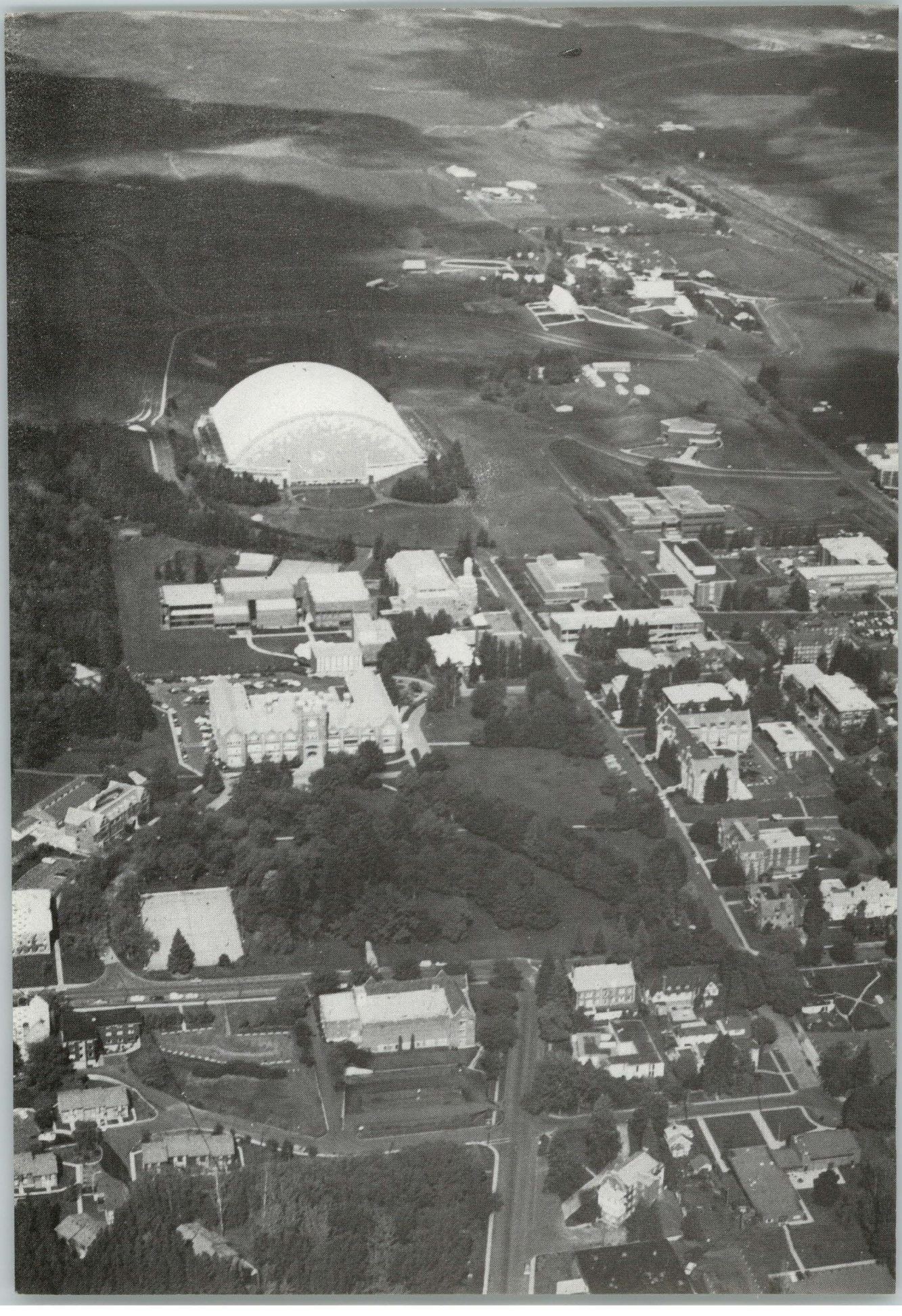

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University of Idaho, Moscow, Idaho 83843
Telephone: (208) 885-6111

Further information may be obtained from the following officers. On campus, dial the number listed. Off campus, dial the prefix 885 and the number listed.

Academic matters	Dean of the college in which the student plans to major	——
Admissions	Director of Admissions (104 Ad. Office Bldg.)	6326
Adult education	Director of Continuing Education (112 Continuing Education Bldg.)	6486
Associated students (student govt)	Student Union Bldg.	6331
Career placement	Director of the Career Planning and Placement Ctr. (Faculty Office Complex East—Lobby)	6121
Continuing education	Director of Continuing Education (112 Continuing Education Bldg.)	6486
Correspondence study	State Coordinator of Correspondence Study (105 Continuing Education Bldg.)	6641
Counseling and testing	Director of the Student Counseling Ctr. (309 Univ. Classroom Ctr.)	6716
Employment (on-campus)		
Full time	Director of Personnel Services (Personnel & Purchasing Bldg.)	6496
Part time	Director of Student Financial Aid (228 Univ. Classroom Ctr.)	6312
Financial aid (scholarships, loans, work/study)	Director of Student Financial Aid (228 Univ. Classroom Ctr.)	6312
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Graduate assistantships/financial aid	Chairman of the department in which the student plans to major	——
Graduate School	Dean of the Graduate School (111 Morrill Hall)	6243
Housing (single & married students)	Director of Housing (Wallace Residence Ctr.)	6571
Information Center		6111
International students	Foreign Student Adviser (241 Univ. Classroom Ctr.)	6757
Registration, academic regulations, and procedures	Registrar (104 Ad. Office Bldg.)	6731
Resident/nonresident status	Director of Admissions (104 Ad. Office Bldg.)	6326
Student activities	ASUI Program Coordinator (Student Union Bldg.)	6484
Study abroad	Student Abroad Adviser (114 Continuing Education Bldg.)	6486
Summer sessions	Director of Summer Sessions (114 Continuing Education Bldg.)	6486
Tutorial services	Director of Learning Resource Ctr. (301 Faculty Office Complex West)	6520
Veterans' affairs	Veterans' Adviser (241 Univ. Classroom Ctr.)	7979

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