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WESTERN WASHINGTON  
STATE COLLEGE  
GENERAL CATALOG 1971/1972

Western Washington State College Bulletin

WESTERN WASHINGTON STATE COLLEGE

Vol. 67

July, 1971

No. 1

Published in July, October, January and March. Entered as  
second class matter at the post office in Bellingham, Washington.  
Published by Western Washington State College, 516 High Street,  
Bellingham, Washington 98225.

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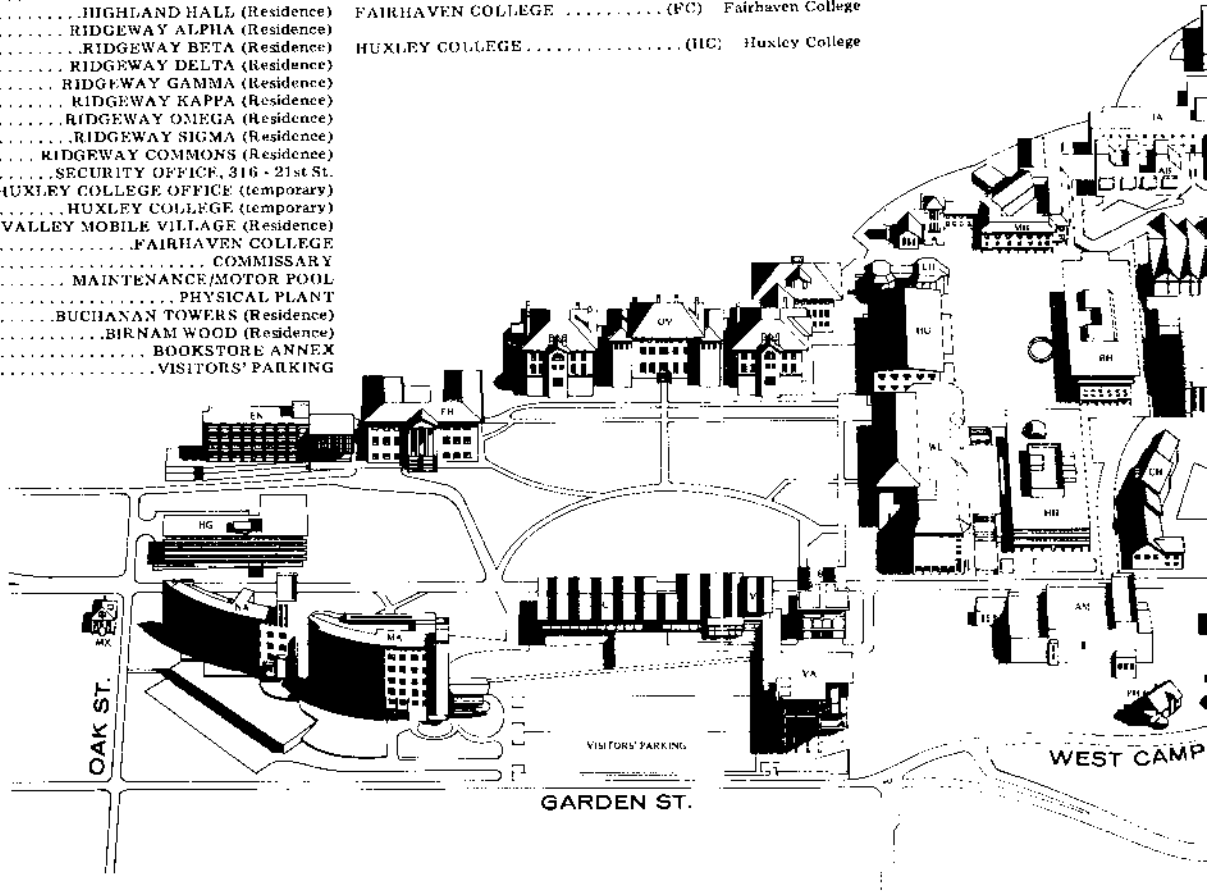
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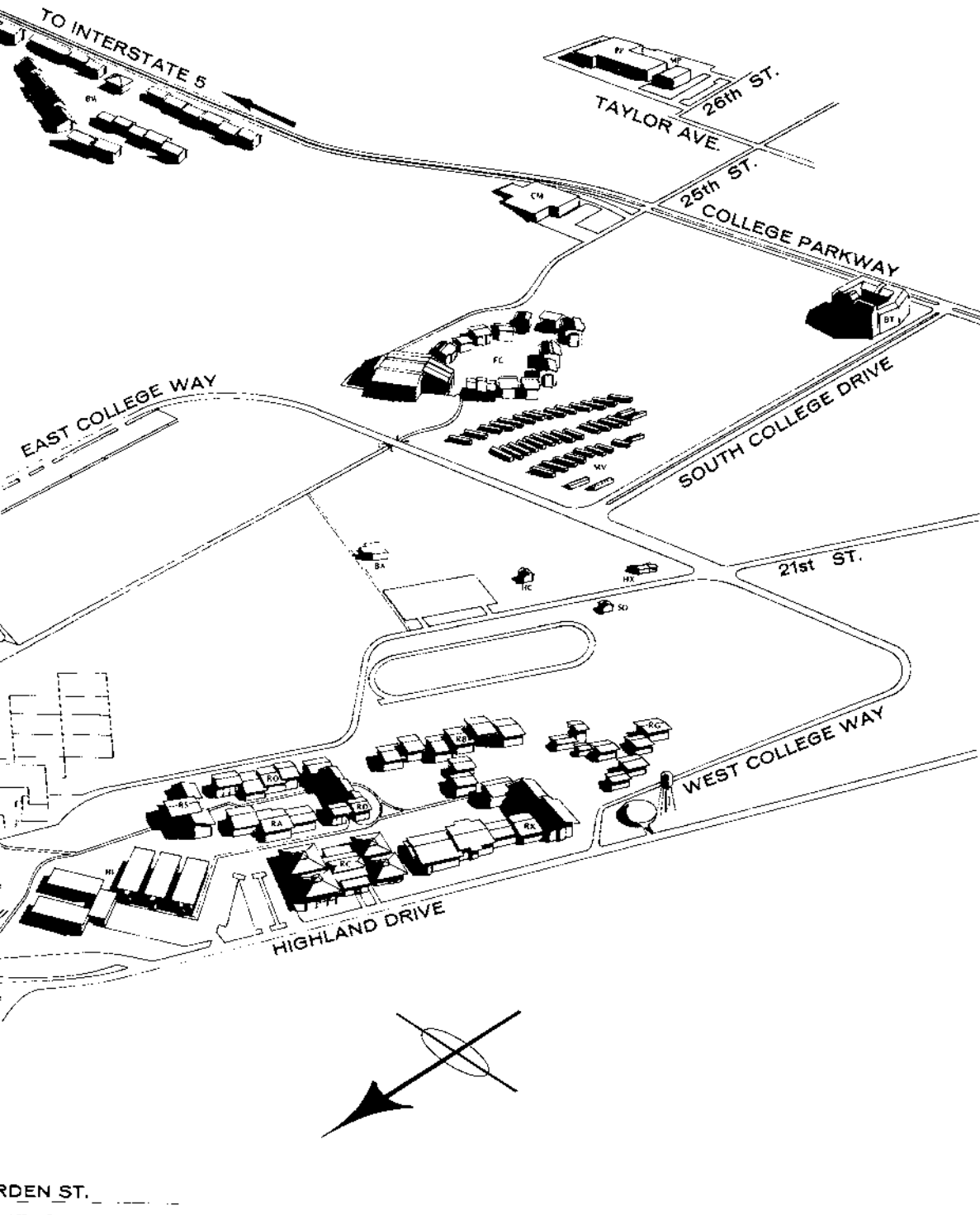
# Map Key

|    |  |
|----|--|
| NA | NASH HALL (Residence)                    |
| MA | MATHES HALL (Residence)                  |
| HG | HIGGINSON HALL (Residence)               |
| EH | Edens Hall                               |
| EN | EDENS HALL NORTH                         |
| VC | VIKING COMMONS                           |
| VU | VIKING UNION                             |
| VA | VIKING UNION ADDITION                    |
| BK | BOOKSTORE                                |
| OM | OLD MAIN                                 |
| LH | LECTURE HALLS                            |
| HU | HUMANITIES BUILDING                      |
| WL | WILSON LIBRARY                           |
| HH | HAGGARD HALL                             |
| AM | AUDITORIUM-MUSIC BUILDING                |
| PH | PRESIDENT'S HOUSE                        |
| FW | FRESH WATER INSTITUTE                    |
| HS | HIGH STREET HALL                         |
| CH | COLLEGE HALL                             |
| BH | BOND HALL                                |
| MH | MILLER HALL                              |
| AB | ART BUILDING ANNEX                       |
| IA | ARTS/INDUSTRIAL ARTS/TECHNOLOGY          |
| SP | STEAM PLANT                              |
| CV | CARVER GYMNASIUM                         |
| MX | MUSIC ANNEX                              |
| EA | EDUCATION ANNEX                          |
| HI | HIGHLAND HALL (Residence)                |
| RA | RIDGEWAY ALPHA (Residence)               |
| RB | RIDGEWAY BETA (Residence)                |
| RD | RIDGEWAY DELTA (Residence)               |
| RG | RIDGEWAY GAMMA (Residence)               |
| RK | RIDGEWAY KAPPA (Residence)               |
| RO | RIDGEWAY OMEGA (Residence)               |
| RS | RIDGEWAY SIGMA (Residence)               |
| RC | RIDGEWAY COMMONS (Residence)             |
| SO | SECURITY OFFICE, 316 - 21st St.          |
| HX | HUXLEY COLLEGE OFFICE (temporary)        |
| HC | HUXLEY COLLEGE (temporary)               |
| MV | HIDDEN VALLEY MOBILE VILLAGE (Residence) |
| FC | FAIRHAVEN COLLEGE                        |
| CM | COMMISSARY                               |
| MP | MAINTENANCE/MOTOR POOL                   |
| PP | PHYSICAL PLANT                           |
| BT | BUCHANAN TOWERS (Residence)              |
| BW | BIRNAM WOOD (Residence)                  |
| BA | BOOKSTORE ANNEX                          |
| VP | VISITORS' PARKING                        |

# Departments

|  |          |                                 |
|--|----------|---------------------------------|
| ART  | (AB, IA) | Art-Industrial Art              |
| BIOLOGY  | (HH)     | Haggard Hall                    |
| CHEMISTRY  | (HH)     | Haggard Hall                    |
| CONTINUING STUDIES                                     | (CH)     | College Hall                    |
| ECONOMICS AND BUSINESS                                 | (OM)     | Old Main                        |
| EDUCATION  | (MH)     | Miller Hall                     |
| ENGLISH  | (HU)     | Humanities Building             |
| FOREIGN LANGUAGES                                      | (HU)     | Humanities Building             |
| GEOGRAPHY  | (OM)     | Old Main                        |
| GEOLOGY  | (HU)     | Haggard Hall                    |
| HISTORY  | (HU)     | Humanities Building             |
| HOME ECONOMICS   | (OM)     | Old Main                        |
| LIBRARY SCIENCE  | (WL)     | Wilson Library                  |
| MATHEMATICS  | (BH)     | Bond Hall                       |
| MUSIC  | (AM)     | Auditorium-Music Building       |
| PHILOSOPHY   | (HU)     | Humanities Building             |
| PHYSICAL EDUCATION, HEALTH EDUCATION<br>AND RECREATION | (CV)     | Carver Gymnasium                |
| PHYSICS  | (BH)     | Bond Hall                       |
| POLITICAL SCIENCE                                      | (HS)     | High Street Hall                |
| PSYCHOLOGY   | (MH)     | Miller Hall                     |
| SOCIOLOGY-ANTHROPOLOGY                                 | (OM)     | Old Main                        |
| SPEECH   | (CH)     | College Hall                    |
| TECHNOLOGY   | (IA)     | Arts/Industrial Arts/Technology |
| COLLEGE OF ETHNIC STUDIES                              | (OM)     | Old Main                        |
| FAIRHAVEN COLLEGE                                      | (FC)     | Fairhaven College               |
| HUXLEY COLLEGE   | (HC)     | Huxley College                  |





# 1971 — 1972 College Calendar

## *Fall Quarter 1971*

August 1

Last day to apply for admission

September 26, 7:30 p.m.

Convocation for New Freshmen

September 27

Registration of returning students

September 29, 8:00 a.m.

Classes begin

October 11

Columbus Day Holiday

October 25

Veterans Day Holiday

November 24, noon-November 29,

8:00 a.m., Thanksgiving Recess

December 13-17

Final Examinations

## *Winter Quarter 1972*

January 3

Registration

January 4, 8:00 a.m.

Classes begin

February 21

Washington's Birthday Holiday

March 13-17

Final Examinations

*Spring Quarter 1972*

March 27  
Registration

March 28, 8:00 a.m.  
Classes begin

May 29  
Memorial Day Holiday

June 2-8  
Final Examinations

June 9  
Commencement

*Summer Quarter 1972*

June 19-July 28  
Six-Week Session

June 19-August 18  
Nine-Week Session

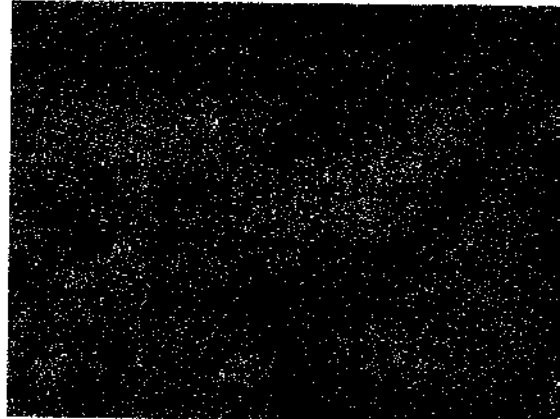
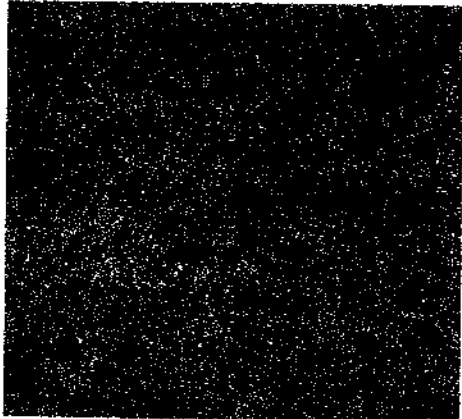
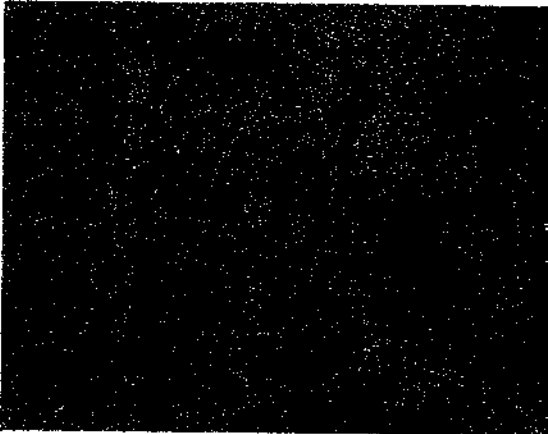
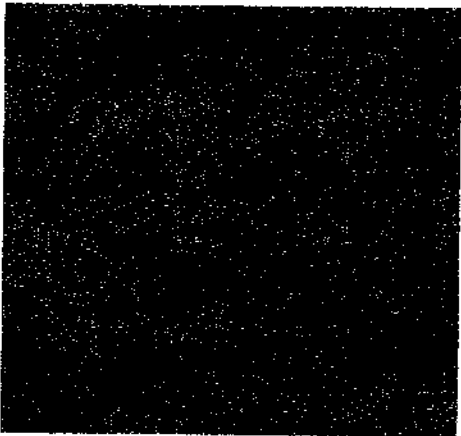
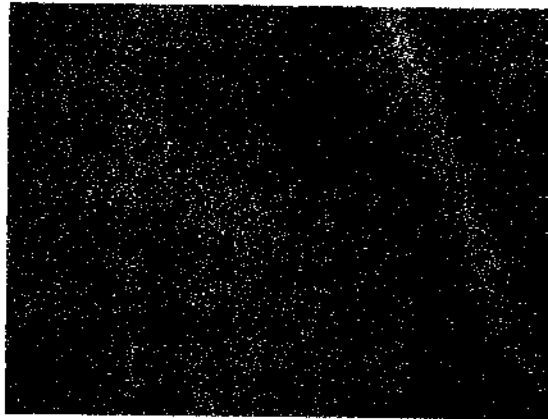
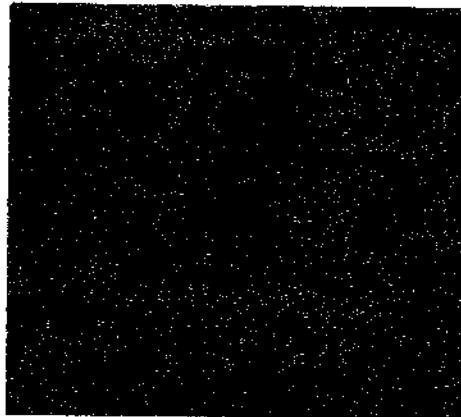
June 19  
Last day of registration

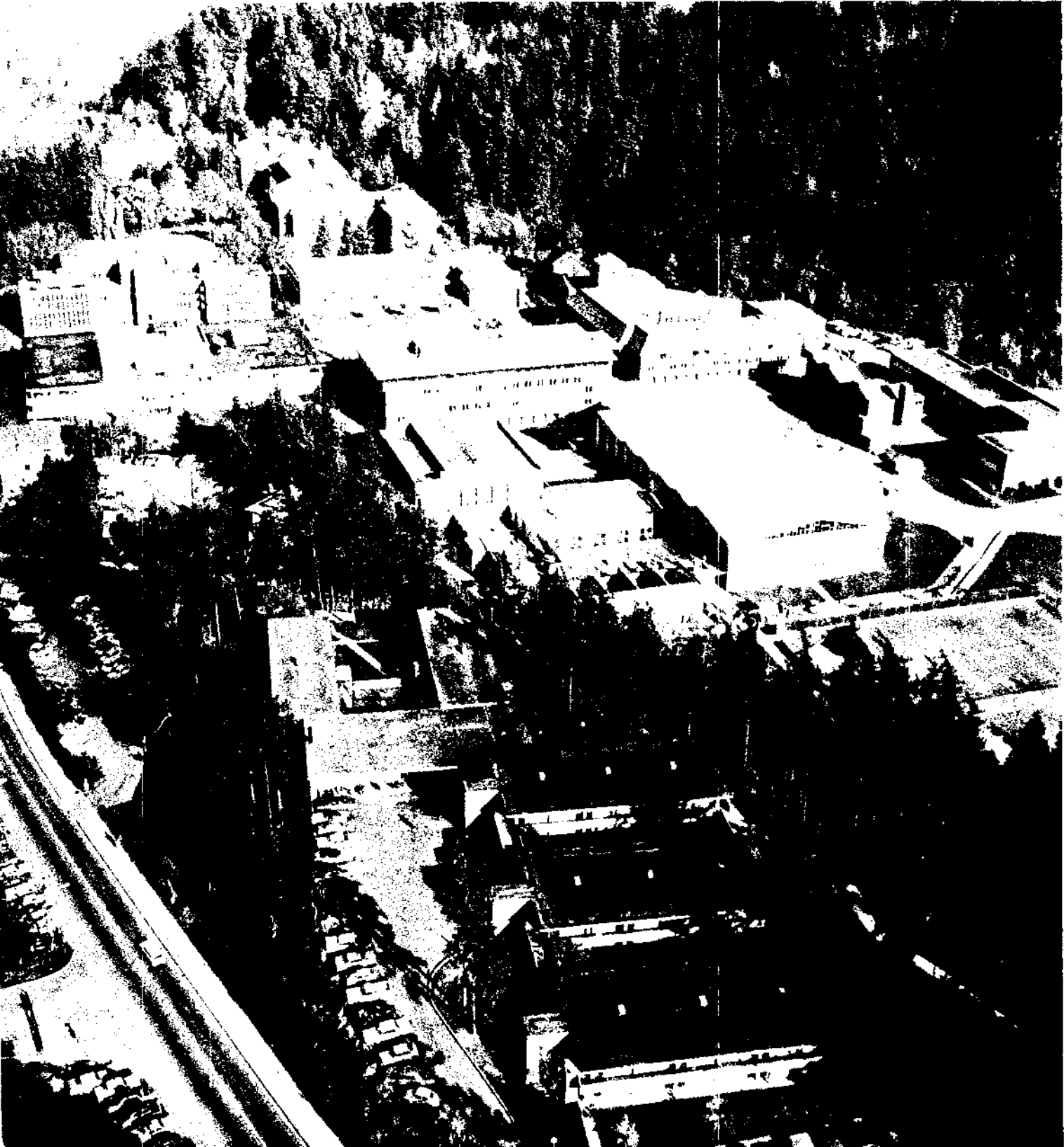
June 20, 8:00 a.m.  
Classes begin

July 4  
Independence Day Holiday

*Fall Quarter 1972*

September 25  
Quarter opens







# THE COLLEGE

Western Washington State College is one of four state colleges which, along with two universities and a score of community colleges, comprise the state-supported system of higher education in Washington. These institutions have individual governing boards but work together through voluntary associations, and the State Council on Higher Education to coordinate their planning and efforts to provide adequate higher education for the college population of the State.

Western Washington State College is located in Bellingham, a city of 40,000 in the northwestern corner of the State near the Canadian border. Its historical antecedent was the State Normal School established by act of the legislature in 1893, with actual operations commencing in the fall of 1899. From a normal school, the institution evolved into a degree granting institution in 1933, College of Education in 1937, and to State College in 1961.

The College is a multipurpose institution offering degree programs in the arts and the sciences and in professional education for teachers at both the undergraduate and graduate levels. These are:

- Bachelor of Arts
- Bachelor of Science
- Bachelor of Arts in Education
- Master of Arts
- Master of Science
- Master of Education

Preprofessional studies are available for transfer to universities and professional schools.

Administratively the College is organized into a Graduate School, and four semi-autonomous undergraduate colleges: The College of Ethnic Studies, Fairhaven College, Huxley College, and The College of Arts and Sciences.

## *Accreditation*

The College is fully accredited by the Northwest Association of Secondary and Higher Schools and by the National Council for the Accreditation of Teacher Education to offer work at the bachelor's and master's degree levels. The College holds membership in the Council of Graduate Schools in the United States.

## OBJECTIVES

Western Washington State College strives to provide its students with the opportunity and incentive for gaining a higher education which will develop their intellectual powers, enlarge their understanding and appreciation of man's heritage, and stimulate their abilities to create and to share ideas. This spirit of inquiry is appropriate to the development of citizens in a free society. It provides a sound basis for any vocational pursuit, and should continue long beyond the termination of formal college study.

The College provides a broad general education, intensive studies aimed at developing scholarly competence, and professional education for those who are preparing to teach in the public schools. Graduate studies leading to advanced degrees in education and in a variety of fields of the arts and sciences are offered.

The College recognizes its responsibility to extend man's knowledge through the active participation of faculty and students in research, and to contribute to the advancement of the humanities, the sciences, the social sciences, and the arts through creative endeavor. Its intellectual resources are made available as a service to the community—local, state, national.

## POLICY OF NONDISCRIMINATION

The policy of Western Washington State College does not permit discrimination among persons because of race, color or national origin. The College has given assurance to the Federal Government of compliance with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which provides that "no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programs or activity receiving Federal financial assistance."

## THE CAMPUS

Over the past decade the campus has been the scene of continuous growth and development to meet the changing demands and functions of a rapidly growing institution of higher education. To meet the needs of student enrollment during this period, construction has more than doubled the number of major academic buildings. The college community is housed in 44 buildings, which include 85 classrooms and 69 teaching laboratories. Currently under construction are major additions to the college Library and the Music-Auditorium Building. During the 1971-73 biennium campus expansion will include buildings for the Social Sciences and the Northwest Environmental Studies Center as well as development of a Marine Laboratory on Shannon Point near Anacortes.

In 1970 the College opened Birnam Wood, an apartment complex for 400 students and a second large apartment building will be ready for occupancy in Fall, 1971.

## THE LIBRARY

The Mabel Zoe Wilson Library houses 325,000 volumes and microforms; with the more than 150,000 additional holdings in federal and state documents, special collections of pamphlets and catalogs, education-curriculum materials, maps and the 3,500 current periodical subscriptions, the total collection numbers

more than 475,000. It provides reading and study areas, carrels, and seminar rooms easily accessible to open stacks. There are Reference, Periodical, and Reserve Book rooms, an Education-Curriculum Research Center, and a room for the collection and viewing of microfilm materials. Current construction will enlarge these areas and provide improved reader services.

## RESEARCH

Faculty research and the training of students in scientific and scholarly methods and techniques have received considerable impetus through recent foundation and government grants. Awards have been made by a wide range of institutions and agencies. Among them are the Atomic Energy Commission, the Office of Economic Opportunity, the Ford Foundation, the Rockefeller Foundation, the ESSO Foundation, the Department of the Interior, the Department of Commerce and Economic Development of the state of Washington and the city of Bellingham.

The Bureau for Faculty Research has been established to encourage and coordinate faculty research in all departments. The Dean for Research and Grants, who directs this Bureau, obtains funds for curricular development programs and for research, and administers these programs. A manuscript typing service, a staff artist and research assistants are on call at the Bureau. An IBM 360/40 computer provides research, as well as instructional, capability to many individuals and programs.



# ADMISSION, REGISTRATION, FINANCES

## ADMISSION

A student seeking admission to Western Washington State College must comply with certain requirements which are explained in some detail on the following pages. In summary these are:

### I. General Admission Requirements (all of these)

- Time of Application
- Confirmation of Application
- Health Examination
- Entrance Examinations
- Mutual Responsibility Agreement

### II. Specific Admission Requirements by Class (one or more of the following as applicable)

- Freshmen Students
- Transfer Students
- Graduate Students
- Foreign Students
- Special Students and Auditors
- Readmission Students

### III. Specific Admission Requirements by College (one only of the following)

- College of Arts and Sciences
- Fairhaven College
- Huxley College
- College of Ethnic Studies

### I. General Admission Requirements

The College makes every effort to provide an opportunity for higher education to all qualified applicants in areas in which it offers programs. Candidates are accepted, on the basis of criteria described below, as applications are received. Should enrollment capacity be reached at any time before the application deadlines, the College may be forced to defer admissions until a later term or to select from among remaining applicants those students most likely to succeed.

#### *Time of Application*

Applications and credentials for the Fall Quarter are accepted after December 1 and not later than August 1; application by April 1 is desirable. Completed applications must be on file by December 1 for Winter Quarter, March 1 for Spring Quarter, and June 1 for Summer Session.

Students may apply for admission while still enrolled in high school or other colleges. An offer of admission made on the basis of incomplete records is granted with the understanding that the student will later furnish completed records which indicate that he has satisfied all admission requirements as set forth below.

#### *Confirmation of Application*

Each undergraduate student who is admitted will be asked to confirm his intention to enroll by submitting a

nonrefundable payment on tuition and fees. This payment should not be made until requested by the College when notification of admission is sent. Additional procedural instructions are then sent to those students who confirm their intention to enroll by submitting the advanced payment. This payment is not required of graduate students.

### *Health Examination*

A health examination is required of all entering students prior to registration. Necessary forms are sent to each student who accepts an offer of admission. The form must be completed and returned to the College by a licensed physician. The report is to be based on an examination made within 90 days of enrollment.

The protection of immunization is strongly urged. A requirement of immunization at student expense may be instituted at the discretion of the Health Service.

### *Required Entrance Examinations*

The Washington Pre-College Test is required of all entering freshmen and it should be completed by all interested students during the junior year of high school when it is given throughout the State of Washington. Nonresidents of Washington and others unable to take the test while still enrolled in high school will do so during orientation.

*Nonresident* candidates for freshman admission must also take the Scholastic Aptitude Test of the College Entrance Examination Board. The results of this test must be received by the Admissions Office before the candidate's eligibility for admission can be determined.

All undergraduate transfer students must also present results on the Washington Pre-College Test or complete an alternate examination during orientation.

Test results are not normally used by the Admissions Committee to determine eligibility of students whose school or college records clearly satisfy the requirements listed below. They are needed, however, for advisement and to establish norms for the research that is needed for

continued improvement of the instructional program. Results are used to determine admission status only for students whose records do not satisfy the normal requirements and who seek exceptions to these standards.

### *Mutual Responsibility Agreement*

The acceptance of a student for admittance and enrollment at Western Washington State College constitutes an agreement of mutual responsibility. The student's part of this agreement is to accept established College rules and policies, to respect the laws of the city and the state, and to act in a responsible, mature manner appropriate to these laws, rules, and policies. The College's part is to fulfill its obligation for an appropriate atmosphere which will provide participation and representation for students in those matters with which they are directly concerned. The College recognizes that the majority of students accept and fulfill their part of the agreement. Disciplinary action on the part of the College must be taken when it has been established that a student has violated this agreement.

## **II. Specific Admission Requirements by Class**

### *Freshmen Students*

*Graduates of Washington State high schools* are ordinarily admitted if their high school records indicate: (a) a cumulative grade average of at least 2.50; or (b) rank in the upper half of the graduating class. Students who fail to satisfy either of these criteria may seek additional consideration from the Admissions Committee by submitting such additional evidence as requested by the director of Admissions. If space permits, the College may grant admission to a limited number of students who, in spite of inability to satisfy the normal standards, appear to have the ability and maturity to succeed in an academic program.

*Graduates of high schools in other states* are ordinarily admitted if they meet the minimum achievement standards for resident students described above,

provided they also submit satisfactory scores on the Scholastic Aptitude Test of the College Entrance Examination Board. The results of this test (normally taken in December of the senior year in high school) should be sent directly to the Admissions Office by the C.E.E.B.

*Non-graduates of high school* may be considered for admission if they are over 21 years of age. Such persons must contact the Director of Admissions for an interview and will normally be expected to complete appropriate examinations, such as the GED or SAT. Experience in other than formal educational institutions is also considered.

*The application for Admission to Washington Higher Institutions* is required of all freshmen candidates. It may be obtained from any Washington high school or college, or from the Admissions Office. Precise instructions for application are included on the form.

### *Transfer Students*

Students are granted advanced standing for college-level work (except sectarian religious study) completed at other accredited institutions. Students contemplating transfer are urged to study carefully the academic program of the college of their choice in the succeeding sections of this catalog in order to plan carefully for appropriate course selection. Guides to parallel courses or appropriate substitutions have been supplied to advisement officers at the community colleges in Washington.

Transfer credit is accepted within the limits of an institution's accreditation. College level credits earned at a junior-community college are acceptable until a student has earned 90 quarter hours, including any four-year college credits earned prior to or during the period of junior college attendance. (Rare exceptions to this limitation may be made upon petition to the Admissions Committee. Such petitions are to be filed with the Registrar after enrollment.) Transfer students should note degree requirements and recognize that such requirements, including minimum residence, must be met in order to obtain a degree, regardless of the amount of previous credit accepted at this College.



A transfer student who is in good standing at the last institution attended is ordinarily admitted if he: (a) satisfies requirements for freshman admission (above) and has attained a cumulative grade average of 2.00 (C) in college level study; or (b) does not satisfy freshman admission requirements but has achieved a cumulative grade average of 2.00 based upon at least 40 transferable credits, or 2.50 on at least 25 transferable credits. The grade average used for admissions purposes is struck by counting all grades earned in transferable courses.

Exceptions to these standards are made only when extenuating circumstances are the cause of low academic achievement, and when evidence of academic aptitude can be furnished. A personal interview may be required.

*The Application for Admission With Advanced Standing* is available from any Washington community college or from the Admissions Office. Candidates for admission as transfer students must submit this form in advance of the deadlines published above, under *Time of Application* and must also request that an official transcript be forwarded directly to the Admissions Office by each higher institution they have attended. A high school transcript is also required of candidates who have earned fewer than 40 transferable credits.

Transferring between undergraduate college divisions of Western Washington State College requires being admitted according to the procedure of the receiving division. Students may be a member of only one division at a time.

### *Graduate Students*

For admission to graduate standing as a candidate for a master's degree, see *Graduate Bulletin*. Candidates for fifth year study for a standard teaching certificate or for teacher certification through special programs for graduate students, will make application through the Office of Teacher Education Advisement and Certification.

### *Foreign Students*

Canadian students who qualify for admission to major universities in their home province are considered for admission under the same general procedures as are citizens of the United States.

A limited number of students are accepted from other countries. Such students, to be eligible, must have completed the university preparatory program in their own country and give evidence of ability to succeed in college study. They must also demonstrate competence in the use of the English language and be able to pay the cost of each year they plan to study at the College. Letters from sponsors, family members or banking officials are required in order to demonstrate that sufficient finances are available, as the College has no financial aid available for foreign students. The Test of English as a Foreign Language (TOEFL) is normally required of candidates from countries in which English is not the language in general use.

### *Special Students and Auditors*

A limited number of persons who have not been admitted to the College as degree candidates may be allowed to enroll as special students or auditors. Permission for such enrollment must be obtained from the Director of Admissions in advance of the application deadlines. Ordinarily, permission to enroll as a special student or auditor will be granted only to persons who satisfy normal admission requirements, but who do not plan programs leading to a degree. Only the Admissions Committee may authorize enrollment of persons who do not meet normal requirements.

Permission to enroll as a special student or auditor is granted for one term at a time; continued enrollment requires a new application. Permission to enroll as a special student or auditor implies no commitment, on the part of the College, regarding later admission to a degree program.

### *Readmission Students*

All students who leave the College for one or more quarters (except summer quarter) must apply for readmission well in advance of the "Time of Application" indicated under "General Admission Requirements." Application forms are available upon request from the Office of Admissions.

Acceptance of transfer credit earned subsequent to the student's initial admission to Western Washington State College is governed by regulations applicable to transfer students as outlined above.

A student who was eligible to continue at WWSC at the time of departure (in good standing or on academic probation) is eligible for readmission. If he has undertaken studies at other colleges or universities since leaving WWSC his cumulative grade average for all such study must be at least 2.00 (C) and he must be in good standing in the last institution attended. Exceptions to these standards can be made only by the Admissions Committee and petitions for this purpose are available in the Admissions Office. A student who was in "dropped" status at the time of departure from WWSC must be reinstated by the Academic Standing Committee. Petitions for this purpose are available in the Admissions Office.

## III. Specific Admission Requirements By College

There are four undergraduate divisions: College of Arts and Sciences, Fairhaven College, Huxley College and College of Ethnic Studies. The foregoing regulations apply to each. The latter three colleges, however, have additional regulations, for each selects from among candidates on an individual basis. Students interested in Fairhaven College, Huxley College or the College of

Ethnic Studies should consult chapters 5, 6, and 7, respectively, and bulletins published by these divisions concerning their specific admission requirements.

## REGISTRATION

The first day of each quarter is normally reserved to complete registration procedures. A special schedule for advisement and program planning is provided in the fall for entering students.

### *Registration During the College Year*

During the fall, winter, and spring quarters, students in attendance are given the opportunity to register for the following quarter. This customarily begins about mid-term. After registration, the student will be mailed a statement for the amount of his fees and tuition; payment must be received at a specified date prior to the opening of the quarter.

Reservations of class sections are held until the first day of classes, but are subject to cancellation if registration is not completed and Admit to Class cards are not presented to instructors at the first meeting of the class.

See *Academic Regulations* for rules pertaining to changes of registration and withdrawals.

### *Late Registration*

Students may not enter or register for classes after the first week of instruction. Students registering or paying late, or failing to meet a registration appointment at the scheduled time pay a penalty fee of \$10.

### *Changes in Registration*

Changes in registration, such as withdrawal from a course, or from the College, are covered in the chapter entitled "Academic Regulations."

## FINANCES

**NEW STUDENT NON-RESIDENT  
FEES NOW \$453.00 PER QUARTER**

### *\*Tuition and Fees*

Checks and money orders for fees or for living expenses should be made payable to Western Washington State College.

### *Quarterly Charges -- Full-time Students*

(Students registering for seven or more credits pay full fees)

\*\*Resident of the State of Washington . . . . . \$ 149.00  
Non-Resident of Washington . . . . . 240.00

These charges include a tuition fee of \$25.50 for residents and \$96.50 for non-residents.

Funds derived from the other fees, \$123.50 and \$145 respectively, are used to finance certain non-instructional aspects of the College program, including (a) student activities, such as athletics and publications, not to exceed \$14 per student; (b) a student health program; (c) bond redemption for student residences and the Union Building; (d) the student bookstore building; (e) the purchase of designated supplies and laboratory materials.

### *Quarterly Charges -- Part-time Students*

(Students enrolling for a maximum of six credits)

For each credit . . . . . \$ 21.00\*  
(The minimum fee is \$42.00\*)

*\*Fees listed here are subject to modification as a result of state legislative action.*

*\*\*Students who have been domiciled in the state of Washington at least one year immediately prior to the date of their registration are classified as residents for tuition purposes. Also included are children and spouses of federal employees residing within the state and children and spouses of staff members of the College. The domicile of a minor is ordinarily that of his father or legal guardian.*

*Auditors (without credit)*

One or more courses, per quarter ..... \$ 42.00\*

Full-time students may audit a course without an additional fee; part-time students may audit courses by paying the auditor's fee additionally.

*Continuing Studies*

Courses taken by extension or in home study, per credit ..... \$ 21.00\*

*Miscellaneous Service Charges*

*\*Parking (per quarter)*

On campus parking ..... \$ 18.00  
Peripheral parking ..... 8.00  
Motorcycle parking ..... 1.50

*Late Registration* A fee of \$10 is charged if a student fails to (a) advance register, (b) register after the appointed time, or (c) meet the payment deadline indicated on his fee billing notice.

*Test Service* A fee of \$7 is required of those who have not taken the entrance tests prior to enrollment.

*Special Examination Charge* Those who seek college credit through examination pay \$2 per credit.

*Graduation Fee* A fee of \$8 is payable for the receipt of a baccalaureate degree. This fee covers initial registration at the Placement Offices. There is a \$5 fee for the master's degree.

*Music Rentals* Pipe organ, other instrument, or practice space rental costs \$2 per quarter.

*Transcripts* A reasonable number of transcripts will be issued free of charge. Orders are requested one week in advance of need.

*\*Estimated at time of printing.*

*Parking and Traffic*

It is recommended that vehicles not be brought to the campus unless absolutely necessary. Due to the geographical location of the campus the parking currently available on and around the campus is not adequate to cover the desires of the college community.

Western Washington State College has established rules and regulations governing parking under Washington State Administrative Code 516-12. Although parking regulations are constantly under study and revision, all students who utilize parking facilities on campus are required to purchase a parking permit and register their car (or cars), motor bike, or motorcycle, at the time of official registration. The current parking permit fee is \$18 per quarter for the majority of the parking lots. Violators of parking regulations are towed away. For further information contact the campus Safety and Security Department.

*Off Campus Study* (a) Matriculated students doing part-time or independent study entirely off campus (6 credits or less during a quarter) will not be required to register or pay fees (other than those charged for Continuing Studies courses), but may receive credit for such study in a subsequent fall quarter. (b) Students who pursue off campus work and/or travel study with departmental or college approval involving 7 or more credits shall register for the quarter and pay appropriate fees. (c) College support for instructional cost of independent off campus study involving 7 or more credits per quarter shall not be available for recompensing cost of travel or living expenses off campus.

*Refund of Fees*

In ordinary circumstances, a student who withdraws prior to the sixth day of instruction in a quarter will receive a full refund of tuition and fees except that the initial registration deposit of new students is not refundable.

A refund of one-half of tuition and fees is made to a



student who withdraws on or after the sixth day of instruction, provided such withdrawal occurs within the first thirty calendar days following the first day of instruction. After the 30th day, no refunds are granted.

### *Change in Student Status*

Students who have paid part-time fees who add classes bringing their total to 7 or more credits will pay the balance between fees already paid and the full-time fee. A full-time student who drops classes so that his remaining total is 6 or fewer credits will receive a refund of (a) the difference between full and part-time fees if the change is made before the sixth day of instruction; (b) one half the difference if the change is made from the sixth day of instruction through the thirtieth calendar day following the first day of instruction.

### *Changes in Fees*

The College reserves the right to change the above charges moderately should conditions so require. The College will continue its policy of holding costs to a minimum commensurate with effective services.

### *Estimate of Total Costs*

The total estimated expense for three quarters, including tuition and fees and cost of books and supplies as well as a moderate allowance for incidentals, is as follows:

|  | <i>Minimum</i> | <i>Average</i> |
|--|----------------|----------------|
| If rooming and boarding                            | \$1,750.00     | \$1,950.00     |
| If housekeeping                                    | 1,600.00       | 1,800.00       |
| If living at home or working<br>for room and board | 800.00         | 1,000.00       |

## **FINANCIAL ASSISTANCE**

It is the position of the College that the limited funds available for student aid programs are mostly legitimately used, not as an inducement to attend this institution, but as an aid to assist needy students when their attendance seems to be an educationally sound course of action and when, for financial reasons, it would otherwise not be possible.

The College expects that every student will supply part of his own funds through savings from summer employment and that parents will contribute in proportion to their financial ability.

The College will make every effort to provide financial assistance to eligible applicants commensurate with indicated need. This assistance may take the form of loan, work, scholarship, or grant, or a combination thereof, designed to best meet the needs of the individual student.

### *Federal Programs*

Federal financial aid programs are designed specifically to benefit students from low income families. A student must demonstrate financial need to qualify.

In the utilization of Federally funded programs, the College adheres to policies and guidelines established by the Department of Health, Education and Welfare. The Parents' Confidential Statement prepared by the College Scholarship Service is used in assessing financial need.

### *National Defense Student Loan (NDSL)*

To be considered for a National Defense Student Loan, a student must be enrolled full-time (12 quarter hours or more). The size of the loan granted will depend on the student's financial need and on the funds available.

### *Educational Opportunity Grants (EOG)*

Grants are available to a limited number of students who demonstrate exceptional need as established by the Parents' Confidential Statement. Grants are awarded as "gift aid" with repayment not required. The individual grants range from \$200 to \$1,000 and may not exceed more than one-half of the total assistance given the student. Grants must be matched with institutionally administered loans, scholarships, or guaranteed employment. To be considered, a student must be enrolled on a full-time basis (12 quarter hours or more) and be making normal progress toward a degree.



### *College Work—Study Program (CWSP)*

Students, particularly those from low income families, who need a job to help pay for college expenses are potentially eligible for employment under the College Work—Study Program.

Part-time jobs are available both on and off campus. Earnings from these positions range from \$300 to \$800 for a school year.

Full-time summer positions are also available under the College Work—Study Program. To qualify for summer employment, the applicant must be enrolled at WWSC for the following academic year. Students working full-time during the summer are expected to save a substantial portion of their earnings to be applied toward meeting college expenses.

### *Law Enforcement Education Program (LEEP)*

The Department of Justice offers a financial aid program through WWSC to students who have career goals in the field of the administration of justice (courts), law enforcement (police) or correction (institutions) or for those who are currently enrolled in these fields and desire educational programs for professional develop-

ment. This aid is offered in the form of loans or grants.

*Loans* are available to full-time enrolled students to cover tuition and fees, books and other related educational expenses on a "need determined" basis. Loans may be cancelled at the rate of 25 per cent per year for each year of subsequent employment in the law enforcement field.

*Grants* are available to cover tuition and fee costs for currently employed law enforcement personnel.

### *Institutional Scholarships*

Each year a number of scholarships are made available through gifts, grants, and bequests from alumni and friends of the College to the Western Washington State College Foundation. Scholarships are one-year awards from \$100 to \$300 and are made in two categories: Academic Scholarships and Special Ability Awards. Special Ability Awards are given to students who demonstrate outstanding performance in art, athletics, speech-drama, or music.

Note: To be eligible for either of these Institutional Scholarships, students must also be able to demonstrate financial need, and be nominated by the sponsoring department.

### *Application Procedure*

To be considered for financial aid, all appropriate application forms must be on file in the College Student Financial Aids Office by March 1. Applications should cover the academic year, October 1–June 15, or any quarter thereof. A new, complete application is required for each academic year.

The application forms include a College Financial Aid Application and the Parents' Confidential Statement. The College application may be obtained by writing the Student Financial Aids Office. The Parents' Confidential Statement may be acquired from high school and community college counselors. Send the PCS directly to the College Scholarship Service in Berkeley, California. Return the College Financial Aid Application to the Student Financial Aids Office.

### *Other Financial Aid*

#### *Federally Insured Student Loan (FISL)*

All graduate and undergraduate students are eligible to borrow through this program, provided they are enrolled or have been accepted for enrollment at least half-time. Entering freshmen may also apply, contingent upon admission to WWSC.

Loans are made upon application *by the student* to participating banks or credit unions. Students may borrow up to \$1,500 per year, or a combined total of \$7,500 for all years, depending upon the amount of money available for such loans. Repayment does not begin until nine months after the borrower leaves school and may be deferred while the student is in graduate school, the Armed Forces, Vista, or the Peace Corps.

Application forms may be obtained from a participating bank or credit union or from the WWSC Financial Aids Office. This loan program differs from the National Defense Student Loan (NDSL) in that it is not administered by the College. Application for this loan is made by the student to the lending institution of his choice.

### *Part-Time Employment*

All students who are in good academic standing and carrying 12 quarter hours of credit are eligible to work on campus. There are job openings in many college departments and offices throughout the year. Employment is usually obtained through direct contact with these campus agencies.

### *Private Scholarships*

A limited number of private scholarships in specified areas of study are awarded to students. For specific information consult the Student Financial Aids Office. Entering freshmen are urged to explore scholarship opportunities from hometown organizations with the aid of their high school counselors.

### *Departmental and Graduate Assistantships*

Each department has funds available for assistantships to qualified undergraduates. Recipients are awarded a quarterly stipend of \$262.50. For information and application, see department chairmen.

A limited number of graduate assistantships in departments of the College are available to qualified students. Stipends range from \$2,250 to \$2,700 yearly, depending upon the nature of the duties assigned. Upon re-application, a graduate assistantship may be extended to a total of two years. Graduate assistants may not be enrolled for more than 12 quarter hour credits but must be registered for at least one three credit course. Inquiries should be addressed to the Dean of the Graduate School.

Further information concerning financial aid may be obtained from:

Director, Student Financial Aids  
Western Washington State College

# HOUSING AND STUDENT SERVICES

## STUDENT LIVING

The College considers group living an important phase in the total college experience and is therefore directly concerned in maintaining high standards in its housing accommodations. A wide variety of housing accommodations are provided by the college. There are residence halls for single men, single women and coed living accommodations. The College also has apartments for single students and for married students. Assignments to on campus housing and listings of off campus housing accommodations are made without reference to race, creed or national origin.

The College does not list off campus housing accommodations unless the operators agree to the policy on non-discrimination.

Fairhaven College requires residence on its own campus. The student should consult the Fairhaven section (chapter 5) for special housing information.

Other than Fairhaven, the College does not maintain regulations as to where students must live. However, students are encouraged to investigate housing accommodations thoroughly to assure themselves against conditions which would interfere with their academic and personal development.

### *College Residence Halls*

Rooms are furnished with a single bed, mattress and pad, desk, desk lamp, and a wardrobe or closet. The occupant furnishes pillow, sheets, pillow cases, blankets, towels,

alarm clocks and other personal necessities. Rooms are generally for double occupancy. Kitchenette and laundry facilities are provided in central areas. Electric open-element appliances are not permitted in student rooms. A recreation room, a reception area, small area lounge, special study rooms, vending machines, and extra storage space for trunks are provided in each hall.

Three dining halls are located close to the residences. Students living in residence halls must also take their meals in the dining halls. All dining halls are co-educational and serve twenty-one meals per week.

*Reservations* for accommodations in the residence halls are made by sending a completed application to the Director of Housing, Western Washington State College, Bellingham, Washington 98225. *No deposit is required with the application.* Applications will be accepted only if the student meets one of the following conditions:

1. He has been admitted to the College as a new student and has prepaid the advance registration fee.
2. He is presently enrolled or has previously been enrolled at Western Washington State College.

Space in the residence halls is assigned according to the date of receipt of the application for room in a hall. The room assignment is made when the student moves in. Official assignments are made by June 1st for fall quarter and one month prior to the beginning of other quarters. Students making application and later deciding they do not want accommodations must cancel reservations by notifying the Director of Housing prior to acceptance of a residence hall assignment.

In accepting an assignment to a residence hall each assignee must agree to the Conditions of Occupancy and make a deposit of \$50. Deadlines for the payments are July 1st for fall quarter, or two weeks after the assignment is made. The \$50 deposit will be retained by the College as a damage and/or reservation deposit.

Once the payment of deposit is made, cancellation of a reservation cannot be made without penalty. Cancellations received after the payment is made, but prior to August 1st for fall quarter, December 1st for winter quarter, and February 15th for spring quarter will result in a forfeiture of \$20. Cancellations made between August 1st and September 15th for fall quarter, between December 1st and December 20th for winter quarter or between February 15th and March 5th for spring quarter will result in a forfeiture of \$40. Cancellations made after the above stated deadlines will result in forfeiture of the entire \$50 deposit unless, due to unusual circumstances, a refund is granted by the Director of Housing.

Charges for damage or loss of residence hall property in the custody of the student or for damage to the hall premises will be billed to the student or withheld from any refund due him.

If a student is found ineligible for admission to the College, his entire deposit will be refunded.

Residence halls are closed during vacation periods.

### *Apartments for Single Students*

*Hidden Valley Village* is located on a three-acre site on the south end of the campus. The Village accommodates 42 mobile homes for 168 women students. All basic furniture and utilities are provided including telephone. Occupants may prepare their own meals or take them in the dining halls.

Each mobile home has a living room, kitchen-dining-study area, bathroom, two bedrooms, wall-to-wall carpeting and drapes.

*Birnam Wood* consists of 132 apartments for 532 students on a seven acre site at 2901 College Parkway. Each apartment has a living room, dining room, kitchen, two compartment bath, storage room and two bedrooms, furnished for four students with the usual furnishings, drapes and wall-to-wall carpeting. Utilities are provided as well as telephone service.

Assignments to the single apartments are made by date of application, preference is given to older students, those with advanced class standing, those who are presently living on campus and groups of four persons. A \$50 deposit is required from each student when assignments are made.

*Housing '71* (presently unnamed) will be an eight-floor apartment building which will house 404 students in one- and two-bedroom apartments at 2401 College Parkway. Each standard unit will have a kitchen, living-dining area, bath, and two large bedrooms. The lower floor of the building will have a coffee shop and recreation area. Furnishings, utilities, telephone service and extra storage areas will also be provided.

### *Married Student Housing*

Sehome Manor, three blocks from the College at 255 N. Forest, is leased by the College to provide housing for married students. Sixty-two apartments include 4 efficiency units, 45 one-bedroom, and 13 two-bedroom apartments, and a recreation room. All have wall-to-wall carpeting, drapes, ranges and refrigerators. Laundry facilities and parking are provided. A \$50 deposit is required when a student accepts an assignment. Written notice must be given 30 days prior to termination of occupancy.

### *Residence for Foreign Language Study*

One of the dormitories has been set aside for the use of students desiring to live in an environment in which foreign languages are spoken. Please inquire at the Housing Office.

## STUDENT ACTIVITIES

The program of student activities at the College is designed to provide maximum opportunity for student participation in a wide range of co-curricular experiences. Student activities are in no sense incidental in the plans of the College; rather, they are an integral and highly important phase of the total range of experiences aimed at helping students become well integrated, effective persons.

Student activities and organizations are administered by the students themselves with faculty and staff advisement. The student handbook, *The Navigator*, outlines in detail the frame of reference within which student organizations and activities operate.

The Viking Union is the community center of the College. Offices for many student activities, including the Associated Student Body, certain services, publications, and the activities staff are located in the Union. Meeting rooms, lounges, offices, shops and work areas, together with the organization and program, represent a well considered plan for co-curricular activities of the College.

Living group organizations provide an important opportunity for personal growth. The residence halls are semi-autonomous, organized for self-government and sponsoring activities within their individual buildings.

Student interest groups provide an educational and social experience not always available to students in the ordinary classroom situation. These organizations sponsor programs and activities common to the interests of the membership. Although a few student organizations are open only to students with a particular departmental affiliation or skill, most are open to any interested student. Students are encouraged to become involved in some aspect of the out-of-class activity program. A list of all student organizations and their purposes is published in *The Navigator*. Publications include a bi-weekly newspaper—*The Western Front*, a college yearbook—the *Klipsun*, and certain minor publications.

Intercollegiate athletics play an important part in the College's program. Students interested, either as

spectators or participants, in intercollegiate sports can choose from football, basketball, baseball, track, cross country, swimming, tennis, golf, wrestling and crew. The College is a member of the Evergreen Conference.

The comprehensive intramural schedule includes practically all group and individual sports. Students are encouraged to participate and reap the benefits of healthful recreation, co-operative group effort, and increased skills for leisure-time activities.

The Club Sports Program of the Associated Students, located in the Viking Union Outdoor Program Center, provides an opportunity for all members of the community to compete in intercollegiate soccer, rugby, skiing, sailing, and parachuting. The number of teams competing in each sport is determined by the number of people interested in participating. Instruction is offered in most sports. Persons interested in organizing intercollegiate competition in sports not yet enjoyed by members of the community are encouraged to do so within the Club Sports Program.

The Outdoor Program is an unorganized group of people involved in a variety of outdoor experiences. Activities include mountaineering, canoeing, ski-touring, hiking, kayaking, sailing, scuba diving, conservation, learning and enjoyment. It enables people of varying degrees of outdoor experience to come together for the mutual benefit and enjoyment of all concerned. The Outdoor Program Center in the Viking Union is a focal point where Western outdoorsmen can find others with whom to enjoy the Pacific Northwest outdoors.

Debate and drama offer broad opportunities for the development of new interests and skills. Debate is a field in which opportunities exist for frequent participation in tournament competition. With the facilities of a theater-size stage, students have an excellent opportunity for both acting and production.

Music organizations include band, orchestra, choir, various quartets, string ensembles, and other performance groups.

Recreational facilities operated by the College include Viqueen Lodge, a thirteen-acre tract on Sinclair Island maintained by the Women's Recreational Association,

and Lakewood, a nine-acre tract on Lake Whatcom owned by the Associated Students. Kulshan Cabin, a lodge at Mt. Baker, is maintained jointly by the College and the Mt. Baker Club of Bellingham.

### *Living Costs*

Rates for the 1971-72 academic year have not yet been established. It is anticipated that the rate increase will be between 5 and 10 per cent. The following were the rates for 1970-71 for multiple room and board:

|                      |           |
|----------------------|-----------|
| Fall Quarter .....   | \$ 343.00 |
| Winter Quarter ..... | 297.00    |
| Spring Quarter ..... | 260.00    |

Apartment rates for 1970-71 were:

### *Single Apartments*

Rent per student ..... \$ 50 per month

### *Sehome Manor Rentals*

|                             |               |
|-----------------------------|---------------|
| Efficiency Unit .....       | \$ 70 - \$ 75 |
| One Bedroom Apartment ..... | 90 - 120      |
| Two Bedroom Apartment ..... | 124 - 145     |

### *Off-Campus Housing*

A number of privately owned houses, apartments, rooms and duplexes are available for rent in the city. These facilities will accommodate single or married students, faculty and staff. The properties are listed as the owner describes them; the College assumes no responsibility for their condition or suitability.

Cost of rentals depends upon the number of bedrooms, location, facilities and furnishings provided.

A rental service is operated by the Associated Students in the Viking Union, Room 305. Lists are not published for mail distribution because of the constant change of availability. Since the office does not make individual rental agreements, it will be to the student's advantage to arrive in Bellingham prior to the beginning of the

quarter to locate suitable housing. Available rentals are always in great demand.

### *For Information*

Further information concerning all types of housing, together with application forms, may be obtained from:

Director of Housing  
Western Washington State College  
Bellingham, Washington 98225

## STUDENT PERSONNEL SERVICES

Each student is recognized as a unique individual with his own pattern of abilities, circumstances, and needs. Through a broad spectrum of individual and group guidance and activities, the College endeavors to assist students toward better self-understanding and maximum self-realization. The College does not consider that its responsibility to students ceases with the provision of good instruction and instructional facilities. There is a keen awareness that all aspects of the student's college experience relate to his development as an increasingly effective person.

The Dean of Students has responsibility for coordinating the varied student services and extracurricular learning programs as well as developing an effective relationship between these services and programs. In addition, the Dean communicates students' needs and concerns to other college administrators, to various representative bodies and to the Board of Trustees.

### *Counseling and Advising Services*

Recognizing that people are subject to a wide variety of life problems and pressures, the personnel staff provides students with both informal and clinical counseling resources.

## *Academic Advisement*

Each of the colleges (Arts and Sciences, Fairhaven, Huxley and Ethnic Studies) has special services for orientation of new students, freshman counseling and academic advisement. Students should read the chapter of this catalog dealing with the college of their choice, and contact that college's offices for specific academic concerns. Students should also be aware that an Academic Information Center is provided in Old Main, where a trained student staff is available to answer specific academic questions, to make referrals to offices or agencies with complete information, and to assist students generally in selecting a major, utilizing special academic opportunities, exploring career fields and making course selections.

*The Associate and Assistant Deans of Students* function as ombudsmen, attending to the general welfare of the College community. They provide academic counseling including administration of scholastic standing procedures, coordinate recruitment and support services for the educationally disadvantaged, counsel students with individualized problems, and facilitate college judicial procedures. Students are urged to see one of the Associate or Assistant Deans if they need specific information or are unsure about procedures for resolving a particular problem.

*The Student Counseling Center* aids students to become more effective and productive persons so that they might attain greater benefit from their college careers. Comprised of professionally trained clinical and counseling psychologists, the staff provides services to improve decision-making when social, educational, vocational, personal and marital conflicts arise. While it is usually necessary to make an appointment a few days in advance, a student will be seen without delay in instances of an emergency.

*The Office of Residence Hall Programs* co-ordinates the selection and training of a staff to assist resident students with their community and individual problems. Undergraduate Resident Aides team with a Resident Director in each hall to comprise an active resource living with students. In larger buildings there may be an Assistant Director, and college apartments have a resident manager. These people are an important source

of information about housing and other college matters in addition to assisting in case of personal problems or crises.

## HEALTH SERVICES

Good health for Western students is the goal of the Health Service. Such a program of health protection aims to give students the best opportunity for scholastic success while enrolled here.

The Health Service is located in Edens Hall-South, ground floor. The staff includes physicians, registered nurses and receptionists with a medical doctor as director. The physicians and nurses are qualified to diagnose and treat office-type problems. Any severe or more complicated conditions will be referred for more definitive care to physicians in Bellingham or the student's home community. The College maintains an infirmary on campus in Edens Hall-South, ground floor, to accommodate students with certain medical problems requiring observation but not hospitalization, for a limited time. The infirmary is in operation 24 hours a day while classes are in session.

Any student requiring verification of absence from class because of illness must be seen at the Health Service at the time of the illness. If a Leave-of-Absence becomes necessary for health reasons, the student must report to the Health Service *before resuming* his class attendance.

*The College strongly encourages* students to have some form of *health and accident insurance* to provide financial support for medical care beyond the problems usually treated at the Health Service. Western sponsors an optional group health-and-accident insurance plan for students. This policy, underwritten by a national company, provides broad benefits and coverage for a modest premium. Those who do not already carry an adequate health-and-accident insurance are urged to take advantage of this plan.

Emergencies occurring after closing hours of the Health Service should be seen at the Emergency Room of St. Luke's Hospital. Physician coverage, on a 24-hour basis, is available at this hospital. Students who use this service



must plan to provide private or health insurance funds to cover the expense incurred. *The College assumes no financial responsibility* for care given at the Emergency Room.

## PLACEMENT SERVICES

The Placement Office assists students in identifying and evaluating career possibilities and assists prospective graduates and graduates in contacting potential employers.

All students, regardless of the degree being earned, are urged to use the services of the Placement Office early in their college career.

### *Services Available to All Students*

The Placement Office maintains a comprehensive library of career information.

The library contains general career planning information, information relating academic majors to occupational areas, as well as labor market trends and needs. In addition, members of the Placement Office staff are available to assist the student in exploring his interests and abilities as these relate to academic training and the world of work.

### *Services Available to Graduates and Prospective Graduates*

Prospective graduates are encouraged to initiate credentials with the Placement Office during the first quarter of their senior year. It is each individual's responsibility to start his own file and to keep it up to date.

Students seeking degrees in Education *must* register with the Placement Office in order to receive their teaching certificate.

When credentials are on file in the Placement Office, the student is eligible to participate in on-campus interviews,

to review job notifications, and to use special aids in contacting potential employers. Credentials may also be used to facilitate an individual's entry into a graduate school.

### *Alumni of Western and Graduates of Other Institutions*

Alumni may also obtain placement services when they wish to register for promotion or change of position. Graduates of other institutions working toward an advanced degree or certificate, and students registered with other Placement Offices outside of Washington State who find themselves located in this area may also participate. In addition, graduates of other schools who have thirty or more credits are also entitled to placement services.

The Placement Office subscribes to an open door recruitment policy, and operates under Federal and State non-discrimination statutes.



# ACADEMIC REGULATIONS

## GENERAL REQUIREMENTS FOR BACHELOR'S DEGREES

The following requirements are common to all undergraduate divisions of Western Washington State College.

- 180 quarter hours of credit; not less than 60 credits in upper division study
- Residence study: one full year (45 credit minimum) including the final quarter before issuance of a degree; Study Abroad programs (Center for Continuing Studies) are acceptable as resident credit to a maximum of 45 credits

*Correspondence and extension credit earned through a fully accredited college or university may be accepted toward the bachelor's degree up to a maximum of one-fourth of the credits required. Students in residence may not register for these courses except by special permission from the Registrar.*

## CREDITS AND LOAD

The "*quarter hour credit*" represents one class hour per week through a term (quarter) of eleven or twelve weeks. Laboratory courses normally meet for additional hours. Courses generally carry credit ranging from one to five units or "hours" according to the number of class meetings per week. Fifteen credits on this basis constitute the work of a quarter, and forty-five credits that of the regular academic year of three quarters.

The standard load for undergraduates is fifteen credits

and during the first quarter of residence loads must not exceed seventeen credits. Students should seek the advice of their advisers before registering for more than 15 credits. After the first quarter of residence, the maximum allowable load is twenty credits per quarter. See the Summer Bulletin for load limits during the Summer Sessions.

A student doing extensive outside work is expected to reduce his scholastic program accordingly.

*Full-time and part-time* status are determined by the number of credit hours which a student is taking.

*Full-time* status for undergraduates required for on-campus employment, eligibility for student offices, and appointment to college committees, is defined as enrollment in twelve or more quarter hours. However, veterans or students deferred by the Selective Service System are expected to carry loads adequate to constitute normal progress toward a degree. (Graduate students should consult the Dean of the Graduate School for a definition of "normal progress.") *Full-time* status in terms of fee payment is defined as enrollment for seven or more credits. *Part-time* students in terms of fee payment are those carrying not more than six credits in a given quarter. They pay a lesser fee but do not share in certain student body privileges, such as participation in recognized activities; drama, forensics, student publications, musical organizations and performing groups.

*Auditors* are those mature persons desiring to attend classes without credit. Admission to a class as an auditor requires prior approval of the instructor as well as



official registration. A fee of \$42 per quarter entitles a student to audit any number of courses. Regularly enrolled full-time students do not pay an additional fee for auditing.

*Class attendance* is required at the discretion of the instructor. Excuses may also be granted by the Health Service, the Registrar, or other authorized college personnel.

## SCHOLARSHIP STANDARDS

The following scholarship standards apply to each college division of Western Washington State College, except Fairhaven. Students should note that transfer between academic divisions is restricted in cases of low scholarship.

*Enrollment is terminated* at the end of the third quarter of college attendance (including quarters at any other colleges) or any subsequent quarter

- (a) if a student's cumulative grade average and his grade average for the quarter just completed both fall below 2.0;
- (b) if a freshman student receives grades of NP in two courses amounting to at least 5 credits;
- (c) if after the freshman year, a student receives NP grades in two courses in any one term.

Students whose enrollment is terminated may normally petition the Scholastic Standing Committee of their college for reinstatement unless they are on final probation (see below). Students dropped for low scholarship from one of the colleges and who wish admission to another of the divisions, must follow normal procedures for admission.

In computing grade point average, only work taken at Western Washington State College (with the exception of courses in which grades of P, NP, or S are received) is taken into account.

*Warning is given* to students who are not dropped under the above regulations but who receive less than a 2.0 grade average during any given quarter, or to freshman students who receive an NP grade in either of their first

two quarters; they are notified of the faculty's concern and encouraged to take advantage of all available assistance. Such warning becomes a matter of permanent record.

*Academic probation* is the status assigned to (1) a freshman who fails to achieve a grade average of 2.0 in each of his first two quarters (at the end of his first quarter he is sent a warning notice if his average is below 2.0 and he is required to consult his faculty sponsor during the first week of the ensuing quarter); (2) students other than first or second quarter freshmen when subject to scholastic warning for two consecutive quarters or when admitted or readmitted to the College by action of the Scholastic Standing Committee.

A student placed on *final probation* by the Scholastic Standing Committee must thereafter meet minimum scholarship standards and may not petition for reinstatement if he fails to do so.

*Certain restrictions govern students on academic probation.* They are not eligible for remunerative employment on campus; they may not hold an elective or appointive office in any student organization nor appear in any performance before the student body at any conference or as a member of any team or organization.

Probationary status is terminated when a cumulative grade point average of 2.0 has been attained. This applies also to those on final academic probation, except that in the event of subsequent failure to maintain this standard the student may not petition for reinstatement.

## MATHEMATICS PROFICIENCY

Proficiency in mathematics is expected of entering students. It is prerequisite to all college level mathematics courses. They must meet certain minimum requirements as measured by the Washington Pre-College Test. Those who enter with a deficiency are required to remove that deficiency prior to enrollment in a fourth college quarter.

Students failing to meet minimum mathematics

standards on the Washington Pre-College Test may remove their deficiency by obtaining a satisfactory score on a re-test offered prior to fall quarter and at the close of each quarter. The Center for Continuing Studies offers a non-credit review course in mathematics for those who need additional preparation for a re-test.

Transfer students with credit in any college level mathematics course are considered to have satisfied this entrance requirement.

## GRADING AND GRADE REPORTING

*The system of grading is as follows:*

|   |             |    |                |
|---|-------------|----|----------------|
| A | Superior    | S  | Satisfactory   |
| B | High        | P  | Passing        |
| C | Average     | NP | Not Passing    |
| D | Low Passing | K  | Incomplete     |
| F | Failure     | U  | Unsatisfactory |
|   |             | W  | Withdrawn      |

Credit is given in courses graded A, B, C, D, S and P. However, the grade of D represents poor work which is not acceptable in the major, minor, English composition, professional education and educational psychology courses required for a degree or certificate nor for Fifth Year courses. Work of D caliber is not acceptable as passing in the pass-fail grading system.

The grade of S is used in student teaching courses, and at the option of the department in course challenge examinations.

The grades of P and NP are used in "Pass-Fail" courses (see below). A course in which a student failed must be repeated if credit is desired. See "Scholarship Standards" regarding the receipt of more than one NP grade.

A grade of F is assigned if a student fails to carry out the prescribed procedures when withdrawing from a course or from the College or if he fails to clear a grade of K in the prescribed time.

The grade of K indicates that work is satisfactory as far as completed. It permits the student after consultation with the Registrar to complete the work within a reasonable period in the way prescribed by the

instructor. The grade of K is given only in cases of illness or other extenuating circumstances which make it impossible to complete all work by the close of the quarter.

If the student remains in college, the incomplete must be cleared during the quarter immediately following receipt of the grade; otherwise a grade of F is assigned automatically. In special circumstances, the Registrar may extend the period for removal of the incomplete. The privilege of clearing an incomplete lapses after five years whether or not the student is continuously enrolled.

*Grade reports* are mailed to all students at the close of each quarter to the address supplied by the student at the time of registration.

*Mid-term deficiency reports*, although not recorded, are sent directly to the student and his adviser in the event of unsatisfactory class work (evaluated at less than "C").

*Grade points* serve as a means of objectively stating a given level of scholarship. A point value is assigned for each grade: A, 4 points; B, 3; C, 2; D, 1; F, 0. The number of grade points earned in each course is computed by multiplying the number of credits by the grade point value of the letter indicated. Thus, a 3 credit course with a grade of B is assigned 9 points. The grade point average is the result of dividing the total number of grade points by the total number of registered hours. A grade average of 2.0 represents a letter standard of C. Grades of S, P, and NP, and the credit involved in such courses do not enter into the computation of grade point average.

For most purposes, e.g., application of scholastic standards, honors, admission to teacher education, student teaching, and graduation, the grade average takes into account only work completed at Western Washington State College.

*Students may repeat courses* in which a failing or low passing (D) grade has been received. When courses are repeated, the original grade and credit hours are ignored in computing grade averages and total credits. This regulation became effective in fall quarter 1969; it is not retroactive to courses repeated prior to that quarter.

If a transfer student, in order to progress in his major or minor, is required to enroll in a course that may be a repeat of work transferred, he will be allowed credit for both courses.

*Pass-Fail grading* is available on an optional basis to students:

- (a) n courses taken to fulfill general education requirements;
- (b) n electives not required for the major, minor or supporting courses, or undergraduate professional requirements.

Regulations pertaining to pass-fail courses are as follows:

1. The student at the time of registration must designate the courses for which he wishes to receive a pass-fail grade; he may change this designation by the regular change of registration procedure through the fifth day of instruction.
2. Prerequisites, work required, and credit allowed are not affected by election of the pass-fail option.
3. In computing grade averages, neither the P nor NP grade in pass-fail courses will be counted.
4. A student's enrollment is terminated for low scholarship if, as a freshman, he receives grades of NP in two courses amounting to at least 5 credits, or, after the freshman year, he receives NP grades in two courses in any one term.
5. Courses applying to a major (including supporting courses) or minor normally must be taken on the standard grade system. Should a student change his major or minor, the academic departments involved will be the sole judges of the acceptability of any pass-fail courses already completed in the newly chosen concentrations.

If given, final examinations must be given during the last week of each quarter. As a matter of College policy, individual students are not permitted to take early examinations. Failure to take the final examination in any course normally results in a grade of "F." When, for

emergency reasons, a student is unable to appear at a final examination at the scheduled time, he may arrange in advance with the instructor to receive a grade of "K" (incomplete). This privilege is extended only to students whose achievement in the course is satisfactory. Removal of the "K" grade is to be achieved early in the following quarter.

## CHANGES IN REGISTRATION

Students may not enter new classes after the first week of instruction.

*Formal withdrawal from any course* must be made in the Registrar's office. Students leaving a class without formal withdrawal will receive a failing grade. Students may withdraw from a course during the first six weeks of instruction in any quarter with no penalty attached other than the loss of credit. After the sixth week of instruction withdrawal from a course will normally result in a grade of "F" (failure). Exceptions to this regulation may be made if such withdrawal is requested by the College, in cases of serious illness, or other highly extenuating circumstances.

*Formal withdrawal from the College* may be made at any time prior to the final two weeks of a quarter. Students who leave the College without official withdrawal will receive failing grades. After the sixth week of instruction withdrawal from the College will normally result in grades of "F" as provided above.

### *Military Withdrawal*

A student who has been called to extended active military duty and is required to withdraw from the college may be considered for credit as follows:

1. Withdrawal during the first third of the quarter- no credit; full refund.
2. Withdrawal during the second third of the quarter-- one-half credit, to the nearest whole credit, if course work is satisfactory, without letter grade and with course unspecified; one-half refund. Applicability of such credit to meet requirements will be determined by the department concerned.

3. Withdrawal during the last third of the quarter--full credit if course work is satisfactory with or without letter grade at the discretion of the instructor; courses specified.
  4. A student required to withdraw during his final quarter before obtaining the baccalaureate degree may be granted the degree if approved by the Dean of his college, his major department, and, if in Teacher Education, the Department of Education.
4. If any of the above steps do not result in a decision being rendered within two weeks of the date the complaint is made at that step, the student shall be free to initiate the next step without prejudicing his appeal.

Academic complaints not resolved by the departmental procedures outline above may in rare instances be referred to the Dean of the college concerned for final decision.

## ACADEMIC COMPLAINTS

It is the policy of the College that a student should be heard when he has what he considers a legitimate complaint about grades, a course, or instructional procedures. Often a frank discussion of his problem can clear up what may be a misunderstanding and improve the learning process in his case. The student normally discusses his complaint with the instructor concerned. Failing satisfaction at this level, he then takes it to the department chairman. Complaints related to grades will follow these steps to the extent necessary to achieve agreement:

1. The student appeals to the instructor presenting any relative evidence.
2. Appeal is made to the department arbiter, a faculty member appointed for the case at hand by the department chairman, who attempts reconciliation and reports his decision in writing to the instructor, the student, and the department chairman.
3. Either party may appeal the decision to a committee composed of the department chairman, one other faculty member in the department chosen by the instructor involved, and a third person chosen by the student involved. This third member may be a student who is a major in the department, or another faculty member. This committee should review the evidence and if necessary, hold a hearing. The decision is reported in writing to the concerned parties.

## ADVANCED PLACEMENT AND COURSE CHALLENGE

A regularly enrolled full-fee paying student may apply to challenge any college course (except conferences, special projects, and physical education activities courses) and if achievement commensurate with the expectations of a given course is demonstrated, receive credit for the courses. Such achievement may be demonstrated by:

*College Entrance Examination Board Advance Placement Examinations* in certain subjects. (The department concerned will determine the minimum acceptable score.)

*One quarter of successful performance in an advanced course* in a sequence which is developmental in nature can, upon departmental recommendation, qualify the student for credit for the preceding course; admission to the advanced course is subject to permission of the department.

*Challenge examination or procedures* prepared by the department concerned.

The following regulations govern course challenges:

1. Students desiring to challenge a course should apply to the College Examiner by the fourth week of the quarter. A fee of \$2 per credit is charged. The time and procedure to be followed in completing the evaluative process will be announced by the Examiner.

2. The results of the challenge shall be recorded as "Satisfactory" or "Unsatisfactory" on the student's permanent record; the results will not be used in computing grade point averages.
3. The challenge application will normally be denied:
  - (a) if the student is currently enrolled in the course;
  - (b) if the student has previously established credit for a similar course at this or another college;
  - (c) if the student has previously failed the course;
  - (d) if the student has previously challenged the course and failed;
  - (e) if, in the judgment of the College Examiner, in consultation with the department concerned, the challenge procedure is inappropriate.

## GENERAL REQUIREMENTS FOR MASTER'S DEGREES

For complete information regarding admission, program and requirements, and graduate assistantships, consult the *Graduate Bulletin*, a copy of which may be obtained upon request from the Dean of the Graduate School.

### *Master of Education*

Western Washington State College has since 1947 granted the Master of Education degree with concentrations in subject areas or in programs in preparation for school services.

### *Master of Arts and Master of Science*

In 1963 the State Legislature authorized the College to grant the Master of Arts and Master of Science degrees. Degree programs serve those who wish to bring advanced subject preparation to their teaching or other professional assignments or who wish to develop a background for doctoral study. Master of Arts programs have been approved in economics, English, geography, history, mathematics, music, political science, psychology, sociology and speech. Master of Science programs have been approved in biology, chemistry,

geography, geology, mathematics, physics and psychology.

### *Doctor of Philosophy in Education*

The 1969 Legislature authorized the College to begin to offer programs leading to the Ph.D. in education. Plans are moving forward for the implementation of this authorization.

## GENERAL REQUIREMENTS FOR TEACHER CERTIFICATION

For complete information regarding admission, programs and special requirements for teacher certification and "Fifth Year" programs, students are directed to the section on "Education" in the chapter "College of Arts and Sciences." Under advisement, these programs may be integrated with those of other divisions of Western Washington State College.

## CONTINUING STUDIES PROGRAMS

The College, through the Center for Continuing Studies, offers its resources to adults who recognize that learning is a lifelong process. Individuals, community organizations, social service agencies, and businesses are invited to contact the College for assistance in providing staff training aid, leadership development, or other special programs. The role of the College is to stimulate and assist individuals and organizations by offering a wide range of educational programs on call and in response to need or interest.

### *Credit Courses*

Students on campus and adults in the community may earn college credit in a wide variety of evening study courses available both on and off campus. A number of courses are also offered for independent home study. Most classes are taught by regular members of the teaching faculty and are open to the general public who may wish to work toward a degree or toward specialized professional development. Most credit courses are open on an auditing basis.



### *Non-Credit Offerings*

The College offers a wide variety of non-credit programs including classes, art films, concerts, lectures, and discussion seminars. Subject matter ranges over such fields as arts and crafts, music, literature, languages, and public affairs. These activities are open to all interested adults regardless of educational background or age.

Brochures describing each of these various activities are available upon request from the Center for Continuing Studies.

### *Study Abroad*

In cooperation with the Northwest Interinstitutional Council on Study Abroad, the College sponsors academic programs in Europe. Professors and students from state colleges and universities in Washington and Oregon participate in year around language and liberal arts programs. Information on these programs may be obtained from the Center for Continuing Studies.

## **REGULATIONS OF CONCERN TO VETERANS**

Each veteran enrolling at this College for the first time on the G.I. Bill must make application for education benefits with the Veterans Administration or transfer his authorization from the last college attended. This should be done well in advance of the quarter for which he wishes to attend, to insure that all allowances will be received on time.

All veterans should make certain that the objective they are planning to pursue is the one for which they are specifically authorized by the Veterans Administration. For instance, if the authorization is for the master's degree, the veteran must enroll in courses acceptable toward that degree. Any necessary changes in objective should be made in advance of registration.

The veteran should be prepared to pay his own expenses for at least two months.

### *Military Credit*

Credit for military service to a maximum of 30 undergraduate quarter hours is allowed for service schools attended as recommended by the American Council on Education publication—"A Guide to the Evaluation of Educational Experiences in the Armed Services."



# FAIRHAVEN COLLEGE

## A Division of Western Washington State College

Fairhaven College represents an innovative approach to higher education. It is a concept intended to ease the pressures on today's students, pressures that are inherent in large institutions.

### PURPOSES OF FAIRHAVEN

Fairhaven has been established to:

- Provide the climate of a small residence college while making full use of the facilities of a much larger institution.
- Provide a liberal education, integrating learning and living.
- Create an atmosphere conducive to experimentation with curricula, teaching strategies, staffing arrangements, group and individual independent study off campus as well as on, and the new educational technology. Imagination and innovation are high-priority qualities at Fairhaven.
- Enable students to make a greater contribution to their educational planning and to give them an opportunity to participate responsibly in the governance of the College.

## ORGANIZATION OF FAIRHAVEN

Fairhaven College operates under a charter approved by the Board of Trustees. Fairhaven establishes its curriculum and degree programs, selects its students from those admitted to WWSC, and forms its own standards for the academic performance of its students. It also sets forth its own criteria for faculty appointment and tenure. The internal governance of Fairhaven is the shared responsibility of students and faculty. Fairhaven students are members of the Western student organization and may participate in the activities of that body. Graduates receive their degrees from Fairhaven College.

The maximum enrollment of Fairhaven will be approximately 600 students. The College has its own campus, a cluster of small residence halls and an academic-commons building, located in Hidden Valley near the main campus.

Fairhaven students receive instruction from both the Fairhaven faculty and the faculty of the other undergraduate colleges of WWSC. The former work closely with the students throughout their undergraduate years and are responsible for advising students and teaching a sequence of studies via conferences, seminars, field work, and independent study. From the faculty of the other undergraduate colleges, Fairhaven students receive instruction in the



## *Fairhaven College*

major discipline or area of concentration of their choice. Fairhaven students have access to the library, the laboratories, and the recreational facilities of WWSC.

The small size of Fairhaven enables students and teachers to become much better acquainted than is possible in a large institution and makes the faculty more responsive to student opinion. Students participate in planning and revising the program, in formulating college policy and in evaluating the results. This participation is accomplished through committees of students and faculty working together.

The Fairhaven residential requirements encourage an educational environment bringing together beginning and advanced students from many walks of life. A central feature of the program is living and learning together; students have primary responsibility for the governance of residence hall living.

## ACADEMIC PROGRAM

### *Faculty-Student Contact*

A basic assumption of Fairhaven College is that faculty and students can construct courses, seminars, field trips and other educational experiences that hold more relevance and interest to both than do conventional courses.

A second assumption is that maximum flexibility must be allowed in the planning and execution of such activities. Only with such flexibility can the talents, skills and capacities of students and teachers be most effectively utilized. Motivated students learn more effectively; interested teachers teach more effectively. Learning is not confined to lecture halls, laboratories and 50-minute periods. Whenever it is clear to both the student and his instructor that a normally required course is not appropriate for that student, the course will be waived or some other activity or course substituted.

The student's close contact with his faculty tutor allows the latter to work with the student in planning activities

of the Fairhaven elective Program. These may include discussions following special lecture and cultural events, involvement in creative activity, travel, work, participation in political activities, student government, and individual research projects. The tutor is responsible both for the evaluation of the student's activities in these areas and the amount of work and time involved in them. The quarter-hour credit system, described elsewhere in the Catalog, is appropriate for courses the student takes at the other undergraduate colleges of WWSC. Work at Fairhaven is equated to quarter-hour credit, and grades, if necessary, for the student's admission to graduate school or to another institution.

When it has been successfully completed, the student's Fairhaven course work is recorded on his official academic record at the close of the academic year. Traditional grades (A,B,C, etc.) are not used. Progress in course work at the other colleges is recorded quarterly.

### *The Curriculum*

Liberal education is that education which is truly relevant to an understanding of the human condition. It is designed to liberate the individual from the restrictions imposed upon him by ignorance, prejudice, and provincialism. It helps the individual to understand himself, the people around him, the world around him, and to see it all in historical perspective. Liberal education is not directly concerned with making a living or with adjusting the individual to the world as it is—it is preparation for living in a changing world.

To insure that students have an experience of sufficient depth, Fairhaven proposes course offerings that reflect the culture imperative of our heritage, raise questions universal to mankind in general, and acquaint them with the common language of a liberal education. Instead of requiring specific courses Fairhaven makes general area requirements: humanities, sciences and social sciences (including education). The curriculum in these areas consists of courses that reflect our commitment to interdisciplinary study and many Fairhaven courses will cover material in more than one area.

Because Fairhaven offers no set courses year after year, this catalog can only suggest what kind of courses *might*

be offered for area credit in a particular quarter. For instance, a course on Mexican Society and Culture might be offered for those interested in spending a quarter in Mexico; the instructor would perhaps offer the course for five credits and give students the option to apply those credits either to social sciences or humanities. A course on Deviant Behavior might be given for social sciences credit, one on Shakespeare's tragedies for humanities, and one of Ecology and Pollution for science credit. A course on the Renaissance might approach that period from many vantage points—the arts, politics, literature, economics, science—but might be given for Humanities credit only. Or, if the same course focused more on the dynamics of social interrelationships during the Renaissance, it could be given solely for social sciences credit.

### *Elective Seminar Program and Independent Study*

As much as one-third of a student's program at Fairhaven may consist of independent study and elective seminars. The latter are determined each quarter when students and faculty submit course proposals to an elective seminar committee.

The ability to create freely and spontaneously new courses within, between, and beyond the traditional disciplines has been one of the most popular characteristics of Fairhaven and was an important factor in the revision of the original curriculum.

Equally important in a Fairhaven liberal education are the opportunities for widely varied, student-designed programs of independent study. Students have used the independent study program to become engaged with concerns of mankind and his environment—field work in environmental problems, race relations, education and with research and reading on special topics. Students this year have carried out such programs of study in England, Greece, Japan, and Mexico. A number of students are engaged in a depth study of their major field of interest, both on and away from campus.

### *Area Credit Requirements*

|  |            |
|--|------------|
| Sciences .....   | 12 credits |
| Social Sciences* .....   | 12 credits |
| Humanities .....   | 20 credits |
| Composition .....  | 3 credits  |
| Fairhaven Elective Seminars,<br>Independent Study Program<br>and/or further study in an area ..... | 27 credits |

The three credits of composition will be assigned by the individual's tutor, upon written evidence from faculty members concerned. Of the twelve credits in the sciences, four credits in the history of physical sciences are required.

### *Area of Concentration*

In addition to the Fairhaven studies, the student's undergraduate degree program includes studies in depth in a subject or theme area. In many instances, this will be comprised of a major and minor taken at Western. Programs are similar to those pursued by Western students. Hence, Fairhaven students enjoy the advantages of a large institution with its many specialized scholars. Alternatively, the Fairhaven student with the advisement of his tutor may design an interdisciplinary concentration composed of selected groups of courses offered by Western's departments. The full range of majors and minors is available for the bachelor of arts, the bachelor of arts in education, or the bachelor of science degrees.

### *Three-Year Bachelor's Degree Program*

The Fairhaven student should consider the advantages of taking his bachelor's degree in three rather than four years. The flexibility of the Fairhaven Program makes such a plan feasible for most areas of concentration. The possibility of a work-study quarter off campus will allow a student to use one summer for credited travel and work away from the campus. With an additional one or two summers spent on campus, the degree requirements

*\*including Education*

## *Fairhaven College*

can be fulfilled. A student contemplating a three-year program should seek consultation soon after being admitted.

### *Professional Education*

Fairhaven, being primarily a liberal arts-general education institution, relies on the Department of Education of The College of Arts and Sciences to teach and administer the program which has been developed jointly by Fairhaven and other Western faculty and students.

It is possible to fulfill the Professional Education courses in a variety of ways. Five options are now in existence and others are being developed. Those students who are interested in working out an individualized program which would better meet their needs are encouraged to do so. The Fairhaven Education Committee exists to help advise students, provide a channel of communication between the Department of Education and Fairhaven in education matters, and to develop courses and experiences aimed at improving the Education program.

### *Cultural and Recreational Activities*

The goal of the Visitors Program is to expose students to many more diverse viewpoints and personalities than exist on the campus and to do this in a way which is personal and direct. These guests meet with classes, join students for informal discussions and meals, live in the dormitories, and offer courses.

The assumptions behind the Visitors Program are that it benefits students to meet diverse individuals beyond the faculty and that this meeting should occur in a direct, personal, and relaxed setting. Fairhaven visitors seldom lecture from a podium; instead they spend much time conversing, listening, and answering questions.

Fairhaven students are eligible to participate in all activities of the total college, including plays, concerts, athletics, clubs, organizations, and a variety of recreational activities.

## *ADMISSION*

Fairhaven students not only must meet the standards of Western Washington State College but they must possess certain other qualities as well. Primary among these is evidence of initiative and self-discipline required for independent study and participation in new and different educational activities. They also include a willingness to contribute, actively and continuously, to the overall Fairhaven program.

Only those students are admitted whose ideals, attitudes, and perspectives reflect the nature of the College itself. This does not mean that all Fairhaven students will be cast from the same mold; on the contrary, the student body will be comprised of young men and women with a wide variety of interests and backgrounds. It does mean, however, that admission will be selective and it will be based on many other factors besides high school achievement.

Candidates for admission to Fairhaven College should submit a regular freshman or transfer application form to the Admissions Office of Western Washington State College. On the application should appear the clear notation "Fairhaven College of Western Washington State College." This will cause the Admissions Office, after determining the candidate's status at Western Washington State College, to forward other materials which are needed by the Admissions Committee of Fairhaven College. These materials include forms on which the candidate will be asked to have letters of recommendation provided and a form on which the candidate is to write his own statement to the Admissions Committee. Other materials, such as descriptions of science projects, literary works, artistic works, and other evidence of creative capacity, will be welcomed by the Fairhaven Admissions Committee. In some cases, an interview may be required.

Candidates for admissions to Fairhaven should send all admissions materials directly to the Office of Admissions, Western Washington State College. Fairhaven College officials maintain liaison with that office.

## THE STUDENT AND THE COLLEGE

Fairhaven is an educational institution in which students must play an active part in designing their study programs, must assume the responsibility for initiating and sustaining their academic pursuits, and must discipline themselves in a manner to make fullest use of the great amount of personal freedom that the College provides them.

Fairhaven is a residential college and so is not a good place for those who prefer to live at home and off-campus during their college years.

### *Academic Standards*

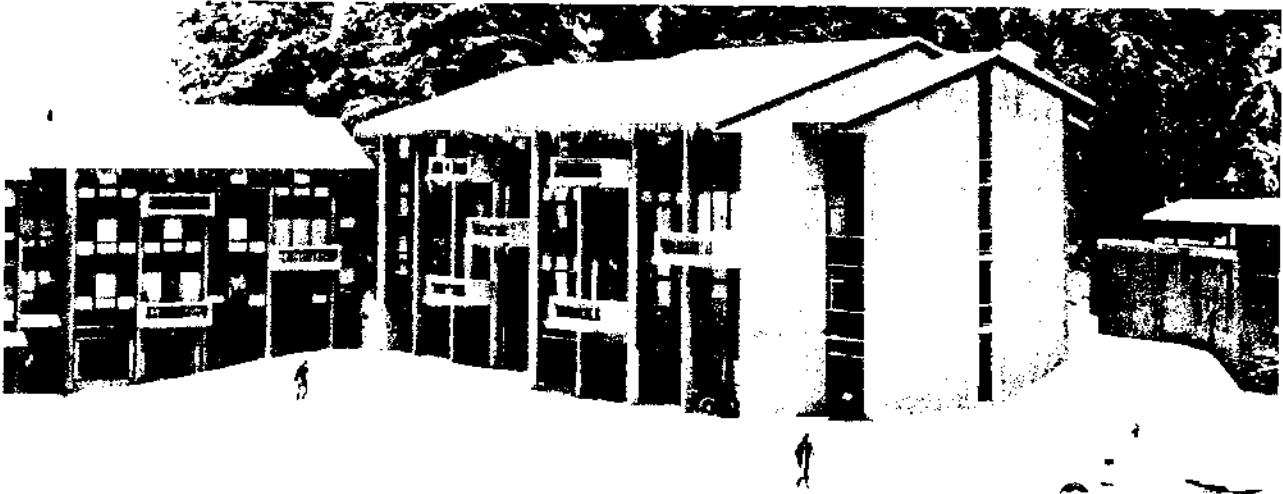
Minimal expectation at Fairhaven is 12 credits per quarter; normal load is 16 credits.

Any student who has not achieved 24 credits by the end of the second quarter of his first academic year—normally winter quarter—will be given an academic warning. Academic warning means that the student must accomplish at least 12 credits during spring quarter to continue in college. Exceptions to this rule may be made by *prior* arrangements with one's tutor or by appeal to the faculty.

Subsequent to their first academic year at Fairhaven, students not having completed a minimum of twenty-four credits during the first two quarters of each year—normally the fall and winter quarters of each year—may be considered as not making adequate academic progress and will be expected to confer with their tutors regarding their continued enrollment in the College. Early in the spring (or third) quarter the faculty will examine the records of students with low credit achievement (less than 24 hours) and will request an explanation from the student and/or his tutor. The faculty may decide that a student making inadequate progress should not continue beyond the end of the quarter. A student may request a full review before the faculty of the decision regarding his academic status at Fairhaven.

Fairhaven students shall not be subject to termination at Fairhaven College on the basis *only* of unsatisfactory performance at other colleges or universities (including other college subdivisions of Western Washington State College). However, such information may be fairly considered in proceedings involving those students who do not meet the Fairhaven academic standards.

For a more extensive description of Fairhaven College, write to Office of the Dean, Fairhaven College, Bellingham, Washington 98225, and request a copy of our separate brochure.



# HUXLEY COLLEGE OF ENVIRONMENTAL STUDIES

## A Division of Western Washington State College

Huxley College is one of the three cluster colleges of Western Washington State College. The concept of cluster colleges grew out of the pressures that accompany the rapid growth which has occurred at the state-supported colleges and universities of Washington and from the concern that the intimacy in student-faculty relationships possible in a smaller institution would be lost in the effort to provide educational opportunities for increasing numbers of students. Western Washington State College is determined that students and faculty may work together as a community of scholars and that the advantages of a smaller institution be preserved.

The Board of Trustees of Western Washington State College approved the formation of Huxley as a cluster college in 1968, with the charge to focus on man's environment. Environmental studies are broadly defined, recognizing that man's environment includes physical and biological entities, social structures and cultural heritages that mold his responses. The focal point of environmental studies at Huxley is ecology—the study of the interactions of man and his environment.

Huxley was formed recognizing the very special educational advantages inherent in the location of Western in Bellingham, an expanding city of some 40,000 population. Within a 100-mile radius lies an unrivaled variety of environmental conditions: salt water, estuarine and fresh water habitats; lakes and rivers, mainland and islands; farmland and forest; alpine meadows and glaciers. Situated almost midway between

Seattle and Vancouver, B.C., the two great metropolitan areas of the Northwest, Huxley College has the opportunity to view the effects of expanding urban, industrial, agricultural, and recreational demands on a region wherein natural systems are rapidly being modified.

## PHILOSOPHY OF HUXLEY COLLEGE

The college was named for Thomas Henry Huxley of the eminent British family of scientists and writers. The following quotation gives a philosophical cornerstone:

Sooner rather than later we will be forced to get away from a system based on artificially increasing the number of human wants, and set about constructing one aimed at the qualitative satisfaction of real human needs, spiritual and mental as well as material and physiological.

Sir Julian Huxley, *The Humanist Frame*

With this long-range goal in mind, the educational objectives of Huxley College are at least threefold: to enable concerned students to obtain the information essential to making responsible decisions and predictions concerning environmental problems; to identify alternatives open to society and define the common elements of the kind of life to which society aspires; and to provide, in certain areas, intensive instruction that may be incorporated into the student's vocational plans.



## COLLEGE ORGANIZATION

As a cluster college, Huxley operates under the jurisdiction of the Board of Trustees and the President of Western Washington State College. For legal purposes it is a division of WWSC. Huxley students participate in the academic, administrative and social activities of Huxley College; they receive their degrees from Huxley College. They are also members of the Western student body, may take part in all student activities, and have access to all library, computer, academic, athletic and recreational facilities of Western.

## ADMISSIONS PROCEDURE AND REQUIREMENTS

Students will normally transfer to Huxley as juniors and should have completed most of Western's General Education requirements. Students already attending Western should apply directly to the Huxley College office for application materials. Students transferring from other institutions must first be accepted by Western; applications directed to WWSC should be designated "Huxley College" in order to be properly processed.

In satisfying the General Education natural science requirements, either Option I or Option II as listed in the WWSC catalog is acceptable. Courses taken above the 101 level are highly desirable (see individual concentration recommendations).

## GRADUATION REQUIREMENTS

Students must meet the WWSC requirement of 180 hours of credit for the bachelor's degree. 96 credit hours are necessary to meet the Huxley College requirements. These 96 hours include: core courses (20 hours), problem series (12 hours), seminars (6 hours), a concentration (50 hours), and electives (8 hours). When a course is successfully challenged, both credit and credit hours are received. A program requirement may be waived if an equivalent course has been successfully completed. Credit and credit hours for the course waived are received. Concentration requirements other than

Huxley courses are generally upper-division courses, although electives and some program requirements may be lower division courses.

At least one full year (45 credits minimum) including the final quarter before issuance of a degree must be completed in residence.

An accumulative grade average of 2.0 (C) or better is required for good standing in Huxley College. No grade less than C is acceptable in a concentration.

## COSTS AND FINANCIAL ASSISTANCE

Tuition, fees, and on-campus housing rates are the same for all divisions of Western.

Some financial assistance is available through Huxley College. In addition, the Financial Aids Office assists students in finding employment and administers a variety of loans, work-study programs, and student scholarships. For more detailed information on financial assistance, consult the appropriate section of the catalog or apply to the Director of Financial Aids.

## ACADEMIC ORGANIZATION

As presently constituted, Huxley is a two-year, upper division college offering interdisciplinary concentrations in Environmental Studies. Students normally enter as juniors. Freshmen and sophomores are encouraged to prepare themselves for admittance to Huxley by incorporating natural sciences and other tool subjects into their lower division work. Advisement and coordination of the programs of potential Huxley students will be provided by Huxley staff in cooperation with community colleges and other institutions of higher learning. About 100 students will be admitted in 1971.

Though not available in 1971-72, a graduate program will be initiated in the future through the Graduate School of WWSC. Huxley, which is now operating in temporary quarters, will move into a new building in 1972. In addition, facilities of the Freshwater Institute, the Marine Center at Shannon Point near Anacortes, and various outdoor laboratories will be available for

## *Huxley College of Environmental Studies*

teaching and research. The programs of some of these units will be coordinated with the overall Huxley program. The total Huxley enrollment when fully developed is set near 700 with a faculty of about 40.

Understanding man's ecological relations demands study in many disciplines. Huxley College, consequently, offers multidisciplinary study, encompassing all of the physical, biological, and social dimensions of environmental problems. The contemporary demand for educational relevance requires that Huxley graduates understand not only the workings of our environment but also ways in which environmental order may be maintained. Problem-oriented study is stressed at Huxley, and concepts from the classroom are applied to specific situations.

Huxley's curriculum is based upon general areas of study called concentrations. A concentration focuses on a general problem area that may involve studies in a number of disciplines. The areas are broad enough to allow natural or social science programs within a single concentration. In addition to the concentration areas already available, Huxley students may develop individual academic programs to meet their particular needs and interests.

### **WHO COMES TO HUXLEY?**

The multidisciplinary concern of Huxley College is reflected in the diversity of its students and faculty. Of the sixty or so students in the first junior class in the fall of 1970, there were representatives from most undergraduate majors, and there were many who saw in Huxley's integrative approach to learning the opportunity to avoid the limiting aspect of academic specialization. Some entered as third year students; others had been in and out of various colleges; several possessed bachelor's degrees in fields as diverse as business, art, and engineering.

The faculty reflects this same diversity of background. Several have part-time appointments at Huxley in conjunction with their normal teaching duties at Western. Professional disciplines represented include medicine, chemistry, ecology, marine biology, economics, engineering, and architecture.



What brings these diverse elements together into one college? An answer lies in the very nature of environmental studies, for ecology is an integrative discipline which deals with whole systems. Realization of this complexity allows persons of various specialized backgrounds and varying degrees of expertise to learn and work together toward positive solutions to current ecological problems.

## REQUIRED COURSES

Whether a student follows an established concentration or elects to devise his own, a number of courses are required of all Huxley students. These include the core courses, problem series, seminars, and tool subjects.

### *Required Courses* (38 credits)

- Core courses (20 credits)
- Problem series (12 credits)
- Seminars (6 credits)
- Tool subjects

### *Core Courses* (20 credits)

These courses are designed to give all students a common background in environmental concepts essential for comprehension of man, his natural and social environment, and his reliance and influence on the environment. The core courses in biology and chemistry are recommended as prerequisites to these core courses:

- Hux 301 Introduction to Environmental Science (4)
- Hux 302 Ecological Awareness (4)
- Hux 303 Man, Evolution and Ecology (4)
- Hux 304 Man, Environment and Resources (4)
- Hux 401 Environmental Law and Political Action (4)

### *Problem Series* (12 credits)

Students at Huxley College are expected to be motivated to carry out independent study pertaining to their educational objectives. The problem series is undertaken together with one or more tutors from the Huxley faculty; it may be several individual problem investigations or a series of steps in a major investigation. It may take the form of a library, laboratory, or community experience. The student must demonstrate ability to describe the experience, portray it in some fashion, and interpret it in a defensible manner. This investigation, observation, and interpretation must be followed by the student's recorded statement (written,

taped, filmed, or graphically portrayed) demonstrating his process of situation analysis and interpretation, his prognosis and his proposed steps to action.

### *Seminars* (6 credits)

The seminars serve as meeting grounds for faculty and students. Students and faculty determine subject matter to allow free exchange of information and discussion. Seminars allow detailed study of particular topics and serve to increase rapport between students of different disciplines.

Students normally participate in one seminar each quarter. Seminars offered to date have included:

Man's Use of Energy; The Philosophy of the Huxleys; the Puget Sound Coalition; Naturalist Philosophy; Mathematics for Biologists; Pollution and Toxicology; Effects of 2-4-D-T on Man and the Environment; Feasibility of the Bellingham Transit System.

### *Tool Subjects*

To satisfy the tool subject requirements, the student shall take (or have taken) at least one college course in each of the following disciplines: biology, chemistry, physics, and geology or physical geography. In addition, courses in economics, cost-benefit analysis, statistics and computer science are recommended.

## CONCENTRATIONS

The concentrations are broad problem-oriented areas that allow students considerable flexibility in their academic programs. In addition to selecting a concentration (in general, not later than one quarter after entering and preferably at time of entry), students are encouraged to select an option in a specific discipline, such as biology or sociology. Students may develop their programs emphasizing natural or social sciences within a particular concentration. At present the following concentrations are available:

## *Huxley College of Environmental Studies*

- I. Ecological Systems Analysis
- II. Environmental Control
- III. Environmental Planning
- IV. Hunger, Food, and Malnutrition
- V. Marine Resources
- VI. Population Dynamics

### *I. Ecological Systems Analysis*

For man to survive and manage his environment in the world today, he must understand the dynamic nature of ecosystems. He must be able to see and understand the unity in which the various biotic and abiotic components of ecosystems interact. In particular man must understand the dynamic flux of energy through ecosystems. He must gain knowledge of the processes which regulate the types and number of organisms within communities. Man's regulating and shaping ecosystems for agriculture, industry and settlement involves the use of pesticides, weather modification, cultivation and other processes which stress the environment. These interventions, unless undertaken with an understanding of the dynamics of ecosystems, will prove disastrous and outweigh the benefits. Students in this concentration will gain a qualitative and quantitative understanding of ecosystems through the emphasis of relevant relationships, nature's optimizing of vital processes and the use of systems analysis.

Recommended preparations: one year of biology; Chemistry 115; statistics.

In addition to the general Huxley course requirements, the concentration "Ecological Systems Analysis" involves 58 credits distributed as follows: concentration requirements, 24 credits; concentration electives, 18 credits; and electives, 16 credits.

#### *Concentration Requirements (24)*

- Hux 303 (a or b) Population Dynamics (4)
- Hux 331 Ecological Energetics (4)
- Hux 340 Environmental Biochemistry (4)
- Hux 380 Resource Economics (4)
- Ecosystem Analysis—computer programming and model building (8)

#### *Concentration Electives (18)*

The student will elect, under the advisement of his tutor, 18 credits from the areas of emphasis within this concentration. These are: biological areas, physical areas, social sciences and humanities, and mathematics (systems ecology)

#### *Electives (16)*

Advisement recommended

### *II. Environmental Control*

In the Huxley curriculum Environmental Control refers to those technological activities which are available to modify man's impact on the environment.

Courses emphasize the preservation and enhancement of the environment by controlling the quality and quantity of domestic, industrial, and agricultural wastes. The modification of waste impact is viewed conceptually by understanding the principles and pragmatics of waste treatment, recycling, and by-product recovery. Courses are specifically oriented toward air, water, or solid waste disposal.

Although the curriculum is heavily weighted in developing an understanding of natural phenomena and its modification by the technological application of chemical, biological, and physical principles, it also emphasizes relevant social, governmental, and economic constraints which bear on the abatement of environmental destruction.

Recommended preparation: one year of chemistry, physics, and biology or microbiology. An understanding of elementary calculus is also suggested. Exceptions to prerequisites can be obtained by permission

In addition to the general Huxley course requirements, the concentration "Environmental Control" involves 58 credits distributed as follows: concentration requirements, 24 credits; and electives, 34 credits.

#### *Concentration Requirements (Water Pollution) (24)*

- Hux 365 Introduction to Water Pollution (4)

## Huxley College of Environmental Studies

- Hux 366 Fundamentals of Waste Treatment (4)
- Hux 367 Industrial Waste Treatment (4)
- Hux 466 Sanitary Chemistry I (4)
- Hux 467 Sanitary Chemistry II (4)
- Hux 468 Applied Microbiology (4)

### □ Electives (34)

The large number of electives is the vehicle used to allow the student to develop a program commensurate with his interests. Electives may be selected under advisement from a variety of areas related to environmental control.

A program is being developed in air pollution at the present time.

### III. Environmental Planning

All organisms, directly or indirectly, modify their environment. In Darwin's view, the surviving organism is the one which achieves the best fit of itself and its environment. We must bear in mind that achieving this best fit may require the modification of individual and group habits as well as the physical milieu in which human endeavor takes place. Bringing the natural scientist's understanding of environmental systems to bear on problems of human organization is the role of the ecologically based planner.

The integration of natural and social systems in time and space is the goal of the environmental planner. In addition to understanding these systems, the planner must also understand the ways in which decisions are made and implemented, by both groups and individuals. He must understand the tools and techniques of gathering, analyzing and presenting information, and equally important, he must possess an aesthetic sense leading to harmony and unity in his surroundings.

Recommended preparations: Physics 101; Chemistry 115; Biology 101; Geology 211 or Geography 203; Mathematics 121, 240; Geography 201; Technology 214 or Home Economics 101 or Art 102.

In addition to the general Huxley course requirements,

the concentration "Environmental Planning" involves 58 credits distributed as follows: concentration requirements, 50 credits; and electives, 8 credits.

### □ Concentration Requirements (50)

Environmental Planning Area (18)

Hux 311, 312, 313 Collaborative Studio in Environmental Design (9)

Hux 411, 412, 413 Collaborative Studio in Environmental Design (9)

Environmental Structure Area (14)

Fourteen credits selected under advisement

Social Structure Area (9)

Nine credits selected under advisement

Decision Making Process Area (9)

Nine credits selected under advisement

### □ Electives (8)

Selected from: literature, statistics, programming, design, graphics, visual communications, recreation, music or other area designated by the student.

### IV. Hunger, Food, and Malnutrition

Adequate food is basic to man's survival. Methods for developing the full energy potential of our planet and understanding the nutritional chain in the ecosystem are necessary. There exists a lack of awareness of the gravity, magnitude, and nature of the current world food crisis.

The concentration in Hunger, Food, and Malnutrition emphasizes the principles of food and nutrition. The problems associated with the food issue of the U.S. and the world, and the possible ways by which these problems may be solved, will be considered.

Students interested in this area may have their option in biology, chemistry, economics, geography, home economics, psychology, or sociology.

Recommended preparations: one year of chemistry, Chemistry 251, Biology 101, Home Economics 150, Economics 202.

## Huxley College of Environmental Studies

In addition to the general Huxley course requirements, the concentration "Hunger, Food, and Malnutrition" involves 58 credits distributed as follows: concentration requirements, 14 credits; concentration electives, 30-35 credits; and electives, 9-14 credits.

### □ *Concentration Requirements* (14)

|          |  |
|----------|--|
| Hux 330  | Population Dynamics (4)                            |
| Hux 350  | Introduction to Food, Hunger, and Malnutrition (4) |
| H Ec 150 | Human Nutrition (3)                                |
| Math 240 | Introduction to Statistics (3)                     |

### □ *Concentration Electives* (30-35)

Students will select, under advisement, courses totaling 30-35 credits from biology, chemistry, economics, geography, psychology and sociology.

### □ *Electives* (9-14)

Advisement recommended.

## V. *Marine Resources*

Although the oceans are not an infinitely large source of food for man's increasing population, they do provide an important protein source that is presently being inefficiently utilized. World demand necessitates a more effective use of this food resource. Marine organisms are also important in yielding products used as resources for medicine and industry. These biotic resources are jeopardized by over-harvesting, by use of the ocean as a waste disposal medium and by the development of offshore oil production. The living resources, although not the only resource man uses from the sea, are the most important to man's present and probably future needs. To protect the potential of the oceans to produce biotic resources, it is essential to understand the ocean's physical environment, the oceanic biota, and the ecological interrelations of marine organisms. A use of the biotic potential of the sea that is consistent with an understanding of the dimensions of the marine ecosystem is the theme of this concentration of study.

Recommended preparations: one year of biology, Chemistry 121, Chemistry 251.

In addition to the general Huxley course requirements, the concentration "Marine Resources" involves 58 credits distributed as follows: concentration requirements, 40-46 credits; and electives, 12-18 credits.

### □ *Concentration Requirements* (40-46)

Workshop in Marine Resources I-VI (see below)

|         |   |
|---------|---|
| Hux 321 | Man and the Marine Ecosystem (3)                        |
| Hux 322 | Marine Resources (3)                                    |
| Hux 323 | Pollution and Marine Ecology (3)                        |
| Hux 421 | Physical Characteristics of the Oceans, Man's Use (3)   |
| Hux 422 | Biological Characteristics of the Oceans, Man's Use (3) |
| Hux 423 | Problems in Marine Science (3)                          |
| Hux 481 | Law of the Sea (4)                                      |

Electives—18-24 credits in concentration (see below for areas)

### □ *Electives* (12-18) advisement recommended

#### 1. *Purpose of Marine Resources Workshops I-VI*

Each quarter all students interested in marine resources will have an opportunity to study together those features and problems common to the marine environment (physical environment, living organisms, basic interrelations, resources, pollution, pollution control, etc). The course of study will be problem oriented and take the form of a teaching laboratory.

#### 2. *Problem Series (Huxley core)*

In the first year the accent will be on interaction between students interested in marine resources. In the second year the students will be encouraged to collaborate with students in other concentrations.

#### 3. *Concentration Electives (18-24)*

Electives will reflect the particular interest of the student and may be in the general area of: biology, ecology, chemistry, geology, economics, natural resources.

## VI. Population Dynamics

Many environmental crises face mankind and threaten his very survival. Problems in hunger, food, malnutrition, pollution, city riots, urban sprawl, etc., may be directly related to our population increase. Stabilization of our population is necessary if environmental problems are to be solved. No technical solution can rescue us from the misery of overpopulation. The solution is one of education of all mankind to the problem confronting us. Individuals trained in the social, biological and behavioral sciences would be prepared to work toward solution of this problem.

Recommended preparations: one year of biology; zoology or botany; statistics.

The concentration in Population Dynamics should give students background in four areas:

1. Environmental requirements of populations
2. Inter- and intrapopulation interaction
3. Evolution of populations
4. Techniques, measurement, characterization, and analysis of populations

These areas would also allow for individual emphasis in biology, mathematics, sociology, anthropology, psychology and economics.

In addition to the general Huxley course requirements, the concentration "Population Dynamics" involves 58 credits distributed as follows: concentration requirements, 19 credits; concentration electives, 24 credits, and electives, 15 credits.

*Concentration Requirements (19)*

- Hux 330 (I, II) Population Dynamics (8)
- Hux 331 Ecological Energetics (4) or Hux 350
- Hux 332 Environmental Adaptation (3)
- Methods of Population Analysis (4)

*Recommended Concentration Electives (24)* others under advisement

- Hux 350 Introduction to Food, Hunger and Malnutrition (4)
- or
- Hux 331 Population Dynamics I (4)
- Hux 320 Challenge of Survival (3)
- or
- S/A 310 The Rise of Civilizations (5)
- Hux 380 Resource Economics (4)
- or
- Biol 307 Human Populations and Natural Resources (3)
- S/A 366 Community Organization (5)
- or
- Geog 341 Urban Geography (5)
- Biol 503
- S/A 311 World Demography (5)

*Electives (15)*

Advisement recommended

### *Environmental Education (proposed)*

Teacher education in the environmental sciences will be a program coordinated between Huxley College and Western's Department of Education. Programs in elementary and secondary education are being formulated. The Northwest Environmental Education Center is a unit of Huxley College providing the students with learning opportunities within the school districts. Students interested in this area are encouraged to inquire for further information.

*The programs and the following course listings are current at the time of catalog publication but changes may occur during the academic year.*

## COURSE DESCRIPTIONS

### 300 INDEPENDENT STUDY (1-6)

Prerequisite: permission of instructor. Conference course permit required. May be repeated for credit.

## *Huxley College of Environmental Studies*

- 301 INTRODUCTION TO ENVIRONMENTAL SCIENCE (4)  
Description of components of the ecosystem; their structure, functions and interrelationship; analysis, measurement and management of the environment.
- 302 ECOLOGICAL AWARENESS (4)  
Prerequisite: Biology 101. A basic survey of major ecological principles. Consideration is given to man as a factor in the ecosystem and to examples of delicate interactions in the environment and man's influence on natural systems.
- 303 MAN, EVOLUTION AND ECOLOGY (4)  
Introduction to evolutionary and genetic mechanisms as they relate to man. Discussion of the components and problems of the human ecosystem.
- 304 MAN, ENVIRONMENT AND RESOURCES (4)  
Prerequisites: one of the following: BA 101, Econ 201, Econ 202, GS 200. Economic aspects of environmental problems. Costs and efficient decision making.
- 311, 312, 313 COLLABORATIVE STUDIO IN ENVIRONMENTAL DESIGN (3 ea)  
Prerequisite: Tech 214 or equivalent course in design. Courses will normally be taken in sequence. Relationships between design and ecology; subjective and objective analysis; design solutions to hypothetical and actual problems. Uses and sources of maps and other reference tools; graphic presentation of data; readings from major contemporary planners.
- 320 CHALLENGE OF SURVIVAL (3)  
Historical background to the environmental crisis. Nature of science and the relationship of science and technology to social problems. Positive solutions to current problems.
- 321 WORKSHOP IN MARINE RESOURCES I: MAN AND THE MARINE ENVIRONMENT (3)  
General characteristics of the oceans. Physical and biological resources. Technological uses of the oceans.
- 322 WORKSHOP IN MARINE RESOURCES II: RESOURCE POTENTIAL OF THE OCEANS (3)  
Analysis of the potential for biotic and mineral resources from the sea. Methods of exploitation and regulation problems.
- 323 WORKSHOP IN MARINE RESOURCES III: POLLUTION AND MARINE ECOLOGY (3)  
Effects of resource utilization on the marine ecosystem. Includes pollutional effects and effects of harvesting the biota. Discussion of biological indicators as tools to monitor water quality.
- 331 POPULATION DYNAMICS I (4)  
Prerequisites: Biol 301, Hux 302, or Psych 341. The ecological foundations of animal population dynamics.
- 333 ECOLOGICAL ENERGETICS (4)  
Concepts of the energy forms, flow and transfer in the ecosystem, and their effects on the environment.
- 334 ENVIRONMENTAL ADAPTATIONS OF POPULATIONS AND ECOSYSTEMS (3)  
Analysis of the strategies, accommodations, and adaptation of populations and ecosystems to environmental change.
- 336 HUMAN GENETICS AND EVOLUTION (4)  
Human evolution and genetic change. Genetic basis of social behavior. Eugenics.
- 340 ENVIRONMENTAL BIOCHEMISTRY (4)  
Prerequisites: Biol 101; Chem 251 or equivalent. Transformation of carbon nitrogen, phosphorus, sulfur and certain trace elements in soil-water-atmosphere systems; beneficial and toxic effects on plant and animal life.
- 341 CHEMICAL RESIDUES (4)  
Prerequisites: Biol 101; Chem 251 or equivalent. Chemistry of herbicides, pesticides, and insecticides and their biological effects; the problems involved in their use.
- 350 INTRODUCTION TO FOOD, HUNGER AND MALNUTRITION (4)  
Prerequisites: Biol 101, Chem 251 or equivalent. Principles of food and nutrition, nature and effect of malnutrition, the world food issue.
- 361 INTRODUCTION TO AIR POLLUTION (4)  
Prerequisites: Biol 101, Chem 251 or equivalent. Concept of the atmosphere; particulate and gaseous pollutants in the air and their biological and physio-chemical effects; sources of air pollution and control.
- 365 INTRODUCTION TO WATER POLLUTION (4)  
Toxicological and ecological considerations, heavy metals, oil, pesticides, eutrophication, pulp and paper wastes, thermal pollution.
- 366 INTRODUCTION TO WASTE TREATMENT (4)  
Water quality parameters, physical treatment processes, chemical treatment processes, dissolved oxygen problem.
- 367 INDUSTRIAL WASTE TREATMENT (4)  
Unit operations of treatment processes— aeration and mass transfer, flotation, coagulation, ion exchange, adsorption, principles of biological oxidation.



*Huxley College of Environmental Studies*

- 380 RESOURCE ECONOMICS (4)  
Prerequisite: Econ 202. Analysing alternative programs using resources by comparing benefits and costs, Special application to water resources and pollution control.
- 397 WORKSHOP IN ENVIRONMENTAL EDUCATION (3)  
An introduction to perception of environment and of the educational environment in particular for teachers. The relationship between operative values, the environmental "crisis," and education are discussed. Analysis of educational implications of environmental change.
- 398 PROBLEM SERIES (2)  
Conference course permit required. Problem-solving experience in environmental problems. Required each quarter in residence. May be repeated for credit.
- 399 SEMINAR (1)  
Student-faculty interaction on topics of general interest. Required each quarter in residence. May be repeated for credit.
- 400 INDEPENDENT STUDY (1-6)  
Prerequisite: permission of instructor. Conference course permit required. May be repeated for credit.
- 401 ENVIRONMENTAL LAW AND POLITICAL ACTION (4)  
Consideration of recent developments in environmental law involving pollution, conservation, etc. Methods for achieving appropriate political action in correcting environmental problems.
- 411, 412, 413 COLLABORATIVE STUDIO IN ENVIRONMENTAL DESIGN (3 ea)  
Prerequisite: Hux 313. Courses will normally be taken in sequence. Philosophy and history of planning; planning theory, law, and administration; decision-making processes; comprehensive planning. Design solutions to hypothetical and actual problems.
- 421 WORKSHOP IN MARINE RESOURCES IV (3)  
Physical characteristics of the oceans and resource use.
- 422 WORKSHOP IN MARINE RESOURCES V (3)  
Biological characteristics of the oceans and resource use.
- 423 WORKSHOP IN MARINE RESOURCES VI (3)  
Problems in marine science.
- 430 BEHAVIORAL ECOLOGY (4)  
Prerequisite: Hux 331. Project oriented study of the behavioral aspects of ecology.
- 431 POPULATION DYNAMICS II (4)  
The social, cultural, and anthropological aspects of human population dynamics.
- 435 ECOSYSTEMS ANALYSIS (4)  
Prerequisites: Hux 302 and a course in computer programming. An integrated course on the dynamic interactions within and between ecosystems.
- 440 FOOD CHEMISTRY (4)  
Prerequisites: Chem 251 or equivalent. Structure and properties of proteins, carbohydrates, and lipids; enzymology in relation to their metabolism.
- 461 BIOLOGICAL EFFECTS OF AIR POLLUTION (3)  
Discussion of experimental work on biological aspects of air pollutants; mechanism of action of individual air pollutants or combinations.
- 462 METEOROLOGY AND AIR POLLUTION (3)  
Discussion of meteorological processes such as diffusion and stirring; removal of pollutants by fallout, washout, and atmospheric reactions; the promotion of photo-chemical reactions by solar radiation.
- 466 SANITARY CHEMISTRY I (4)  
Engineering fundamentals of general, qualitative, quantitative, organic, physical and colloid chemistry; basic concepts of biochemistry and radio-chemistry and instrumental methods of analysis.
- 467 SANITARY CHEMISTRY II: WATER AND WASTE WATER ANALYSIS (4)  
Laboratory course involving significance and determination of turbidity, color, alkalinity, hardness, dissolved oxygen, BOD, COD, solids, fluorides, and volatile acids.
- 468 APPLIED MICROBIOLOGY (4)  
Microbiology reviewed, stream pollution, trickling filters, oxidation ponds, anerobic digestion, refuse disposal, radioactivity, air microbiology.
- 481 LAW OF THE SEA (4)
- 498 PROBLEM SERIES (2)  
Problem-solving experience in environmental problems. Required each quarter in residence. May be repeated for credit.
- 499 SEMINAR (1)  
Student-faculty interaction on topics of general interest. Required each quarter in residence. May be repeated for credit. Conference course permit required.
- The descriptions of concentrations and courses represent current planning. Some changes may be made for Fall 1971.*

# COLLEGE OF ETHNIC STUDIES

The College of Ethnic Studies (CES), established by the Board of Trustees of Western Washington State College on October 9, 1969, has two major goals: to provide an academic setting in which minority cultures and histories are studied and to create instructional procedures that enable the student to assume a greater responsibility for the direction of his studies and the ultimate shaping of his educational experience.

The College of Ethnic Studies seeks to create an intellectual discipline which centers upon the political, religious, social and cultural experiences of Mexican-Americans, American Indians and Afro-Americans.

While the program's emphasis will be on the American experience as the shaping force, historical and cultural forces which may not be American or even Western will be traced and explored.

## BASIC ASSUMPTIONS OF THE PROGRAM

American education needs an intellectual discipline which seeks to explore the act of self-definition as it has taken place in America. Ethnic Studies is that discipline. It embraces the cultural and racial pluralism of this country and seeks to re-define the American experience.

Administrative and instructional decentralization in higher education will help to humanize learning for all students.

Minority studies programs must not be established along traditional or narrow lines but rather within a structure that will encourage students to know and to come to terms with the inclusive nature of their worlds and their society, including its conflicts, tensions and possible resolutions.

Higher education must eliminate the kind of competition that puts the student at a disadvantage.

## ETHNIC STUDIES OBJECTIVES

- To provide a learning situation which encourages direct contact between students and faculty.
- To give students primary responsibility for the emphasis and direction of their learning.
- To build maximum opportunity for incidental learning into the formal and informal learning situation.
- To make appraisal of the student's learning a continuing process; to reduce confusions and misunderstandings that accompany all learning; and to provide supportive instruction in weak skill areas.
- To give undergraduates those educational experiences that create a critical and imaginative intellect, such as presenting public lectures and publishing papers and lectures in the College bourse journal. Activities of this kind will also teach the rigors and responsibilities of scholarship.

- To provide students with work-related experiences on Indian reservations, with state and federal agencies, and with business and industry. These experiences will balance the theoretical with the practical.

## **ADMISSION**

A student seeking admission to the College of Ethnic Studies must first be admitted to Western Washington State College. While making application for admission to Western, the candidate should let it be known by appropriately marking his application that he desires to apply for admission to the College of Ethnic Studies. Having been accepted by Western, the candidate will be supplied a very brief application form, which when completed, will enable him to be interviewed by the Committee on Admission, consisting of three faculty members and three students. The Committee on Admission is interested in those students who desire to study in and to contribute to a new discipline, who are willing to assume an active role in directing their studies, and who want to participate in the on-going development of an instructional program.

## **THE PROGRAM**

The instructional program within the College of Ethnic Studies makes up one-half of the student's course work; the other half of his studies is taken at Western. The student is expected to play the central role in giving direction to his studies and developing and following his interests within the field of ethnic studies. Since each student will spend approximately fifty percent of his time in ethnic studies, he will have a concentration of academic experiences within the discipline. Consequently, he will have enough credit hours to arrange a traditional major or minor to satisfy those institutions that require such designations. Students are strongly encouraged to acquire a concentration of study outside of the CES, which will provide them with a broader understanding of the American experience thereby enhancing their appreciation of the role played by minority groups in shaping it.

The College of Ethnic Studies structures the first year of study around a theme. The general theme for 1971-72 is "Making the New American."

The faculty is interdisciplinary, representing the fields of American history, English literature, sociolinguistics, anthropology, and Indian history.

Each instructor meets each day with two or three students for a two-hour tutorial. During these tutorial sessions, assigned and recommended readings are discussed and short critical papers are assigned. All students registered for the theme within a given program meet for a seminar once a week. The tutorial sessions, papers and seminars provide excellent opportunities for assessment of the student's progress by both student and instructor.

Following the first year, the student, with his adviser's assistance, will select seminars and design independent study programs to be taken within the CES and work out a tentative program of study at Western. Upon approval of the adviser, the student's program of study is submitted to the Committee on Academic Affairs for approval. Once approved, the program of study becomes the student's official program and the one he is expected to follow during his stay in the CES. The student may revise his program as he desires; each revision must be approved by the Committee.

## **GENERAL EDUCATION REQUIREMENTS**

The instructional program within the CES meets the general education requirements of Western in the humanities and social sciences. Students, however, must meet the general education requirements in the physical sciences, mathematics, and communication.

Although the College of Ethnic Studies is an independent entity, it has strong points of articulation with the other undergraduate colleges. CES admits students from the other colleges into some of its courses; the number of non-CES students accepted in courses is determined by faculty limitations and other instructional considerations.

## COSTS AND FINANCIAL ASSISTANCE

Tuition, fees and other costs are the same for all divisions of Western Washington State College. Consult the appropriate sections of this Catalog for details.

For more information, consult:

The Office of the Dean  
College of Ethnic Studies  
Western Washington State College  
Bellingham, WA 98225



**ETHNIC STUDIES COURSES 1971-72**

*All course registration requires prior approval from the College of Ethnic Studies unless otherwise indicated. For seminars not listed, please consult complete listing of courses in the Office of the CES.*

- 201 MAKING THE NEW AMERICAN (9)
- 202 MAKING THE NEW AMERICAN (9)
- 203 MAKING THE NEW AMERICAN (9)
- 302 PRE-COLUMBIAN INDIANS OF NORTH AMERICA (3)  
 Indian life in North America before white contact. Possible origins of American Indians, subsistence patterns and material culture of various Indian groups. Interest is especially centered around political and social systems, family life and intergroup relations.
- 306 SCIENCE AND WESTERN CULTURE FROM THE RENAISSANCE TO THE PRESENT (3)  
 The progress from Descartes and Newton to Hutton, Darwin, T. Huxley, Freud to Planck, Born, Einstein: how the discoveries and fashions of science affected, and were affected by the total of Western culture, with particular emphasis on the origins and "scientific basis" of the attitudes of European towards non-European people in the period of world exploration.
- 307 THE BIOLOGICAL ORIGIN OF CULTURE (3)  
 The tendency and ability to make cultures, and the character of these is a biological feature of the human animal; therefore, for most cultures, the similarities are more significant than the differences. The course will consider the findings of modern biology, psychology, anthropology which relate to the biological origin of culture.
- 309 CREATIVE WRITING (3)  
 Like music and art, writing is an expression of culture; creative activities produce in us an awareness, an understanding of what we are—both culturally and biologically—which can never be obtained by the detached study or analysis of the end product of someone else's creative activity.
- 312 HISTORY OF WHITE - INDIAN RELATIONS (3)  
 The historical development of Indian and non-Indian relations as seen from an Indian viewpoint. The changing attitudes of Indians toward non-Indians and of non-Indians toward Indians. The differing value systems and world view of various groups and the effect on group relationships.
- 313 SOCIOLOGY OF LITERATURE DEALING WITH THE IDENTIFICATION CRISIS (3)  
 A study of the problems faced by Mexican-Americans in their struggle for equality. Topics for study include: prejudice, education, economics, family and religion, social and political behavior, health, class and status and acculturation and assimilation.
- 320 DEVELOPMENT OF CIVILIZATION IN THE NEW WORLD (3)  
 The change from food gathering to food producing economy. Development of civilization in the culture areas of Mexico and Peru.
- 322 CONTEMPORARY INDIANS OF THE UNITED STATES (3)  
 A review of the present conditions of a vanishing race that did not vanish. The relation to the Bureau of Indian Affairs, federal and state government and to white society. The problems of reservation and urban Indians and the steps they are presently taking to solve their problems.
- 324 CONTEMPORARY MEXICAN-AMERICAN LITERATURE (3)  
 A survey of literature dealing with political, educational, cultural and literary directions of the Mexican-American contemporary writers. Critical analysis of these writings done through readings and seminar discussions.
- 333 CHICANO ROOTS IN PRE-COLUMBIAN MEXICO (3)  
 Covers the history of Meso-America from prehistoric times to the Spanish Conquest, emphasizing the study of the societies and the religious and intellectual life of the people of ancient middle America.
- 334 INTERPRETATIONS OF AMERICAN LIFE AND AFRO-AMERICAN FICTION (3)  
 Prerequisites: junior standing and permission of instructor. An intensive analysis of the Black Experience in American society as depicted in classical Black literature.
- 336 CREATIVE FICTION WORKSHOP IN THE BLACK EXPERIENCE (3)  
 Prerequisites: junior standing and permission of the instructor. Practice in critical and creative writing in the Black Experience. Selections utilized as study-aids from contemporary Black American novels and short stories.
- 337 SOCIAL PROTEST IN BLACK LITERATURE (3)  
 Prerequisites: sophomore standing and permission of the instructor. An introduction to significant aspects of the social and intellectual history of Black Americans. Emphasis will be on dissent, resistance and rebellion.

# THE COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences (formerly Western College) offers courses of study in teacher education and in the arts and sciences at both the undergraduate and graduate levels. The following degrees are offered:

Bachelor of Arts  
Bachelor of Science  
Bachelor of Arts in Education  
Master of Arts  
Master of Science  
Master of Education

## REQUIREMENTS FOR BACHELOR'S DEGREES\*

(Students enrolled in the Fairhaven College program will meet general degree requirements specified in the Fairhaven College section of this catalog.)

- 180 quarter hours of credit; not less than 60 credits in upper division study
- Residence study: one full year (45 credits minimum) including the final quarter before issuance of a degree; Study Abroad programs (Center for Continuing Studies) are acceptable as resident credit to a maximum of 45 credits
- Scholarship standard: a cumulative grade average of 2.0 (C), or better, with no grades of less than "C" acceptable in the major, minor, professional education courses, or in English composition.

Admission to, and continuation in, the teacher education curriculum requires a minimum average of 2.2

- General Education: approximately 55 credits, depending upon options chosen
- Major area emphasis as specified in departmental sections under Bachelor of Arts, Bachelor of Science and Bachelor of Arts in Education
- Electives as needed for the 180 quarter hours total credit

*A student should expect to matriculate and graduate according to the general requirements in the catalog current at the time he enrolls. He should expect to meet the specific requirements of the departments for majors and minors in the catalog current at the time he declares his major and minor during registration and the specific requirements in a professional program stated in the catalog current at the time he applies for admission to the professional program.*

*If the student interrupts his work for more than two consecutive quarters (summer quarter not included), he shall meet the demands of the catalog in force at the time he is readmitted.*

*While the College reserves the right to change the regulations concerning admission and requirements for graduation, it shall be the policy of the College to give adequate notice prior to effecting any significant changes and to make reasonable adjustments in individual cases where hardship may be occasioned.*

## THE GENERAL EDUCATION PROGRAM

The General Education courses include a common core of studies which provide the foundation for specialization in any major for a bachelor's degree. These courses are required of all undergraduate candidates. Two options as outlined below are provided as means of satisfying most of these requirements. Some requirements may be waived if a student elects a more advanced course in the departmental offerings (e.g., Mathematics 121 in lieu of Mathematics 151). The appropriate department should be consulted before enrolling in any such alternative course. Option II will be of special interest to students planning majors or minors in one of the specified fields; these options may also be recommended for majors in certain departments.

In the outline below, abbreviated titles are given except where long sequences make it impractical to include them. See departmental sections for full title, credits, prerequisites and description of courses.

### OPTION I

### OPTION II

#### *Communications*

*(Students may elect 2 of the 3 Communications areas under either option)*

- |   |   |
|---|---|
| <p>A. English 101 Language and Exposition (waived for students demonstrating high English competence on entrance tests)</p> <p>B. Speech 100 Fundamentals (waived for those electing, with departmental approval, one of the following courses: 204, 205, or 206 [the latter to be taken for 3 credits]; waived for those passing with a "B" or better two semesters of speech at the 10-12 grade level; waived also for those passing a speech proficiency test)</p> <p>C. Foreign language courses numbered 101, 102, 103, or demonstration of equivalent proficiency on the foreign language placement examination</p> | <p>A. English 131, 132, 133 Masterpieces of World Literature with Composition. Students who elect this option in Humanities (see below) also satisfy the composition requirement</p> <p>B. Speech 301 Speech for Teachers (open only to teacher education students of sophomore or above standing)</p> <p>C. Equivalent study of a foreign language in a Study Abroad Program</p> |
|---|---|

#### *Humanities*

General Studies 121

General Studies 122

General Studies 123

The following program of courses satisfies the General Education 121, 122, 123 series in its entirety:

Two courses from History 105, 106, 107

Two courses from English 281, 282, 283, Classical Studies 350 (if 350 is chosen, either 282 or 283 must be taken), or the series English 131, 132, 133 if elected for "A" above

One course from Philosophy 111, 113, 210, 220, 250, 330

One course from Art 190 or Music 140

*(General Education requirements continued on next page)*

## College of Arts and Sciences

### Social Sciences

*These requirements include work in each of three areas. The student may elect either option for any or all of the areas.*

- |  |   |
|--|---|
| A. General Studies 105 Behavioral Science                  | A. Psych 201 and Soc/Anth 200 or 201  |
| B. General Studies 200 Economic and Political Institutions | B. One course from each of two fields:<br>Economics 201<br>Geography 201, 207, 470<br>Pol Sci 101, 150  |
| C. General Studies 321 Non-Western Cultures                | C. Two courses from:<br>Geography 315, 319, 415<br>History 280, 385, 480, 481, 482, 483, 484, 486, 487a or b, 488<br>Pol Sci 305, 307<br>Economics 486<br>Soc/Anth 362, 363 |

### Mathematics-Logic

- |   |  |
|---|--|
| Mathematics 151 Introduction<br>(Waived for students with four years high school mathematics or Math 121, 122 or 200 level courses) | Philosophy 102 Logic<br>(This option open only to students with three years high school mathematics) |
|---|--|

### Natural Sciences

Four quarter sequence in natural sciences to be taken in entirety except for waivers on basis of high school science.

Sequence: A is prerequisite to B; A and B are prerequisite to C and D; C and D may be taken in either order.

- A. Physics 101 Elementary Physics (or one year high school physics)
- B. Chemistry 101 Chemical Concepts (or one year high school chemistry)
- C. Biology 101 General Biology (or two years high school biology)
- D. Geology 101 General Geology or Geography 101 Natural Environment (or one year high school geology)

Any *one* of the following sequences; open only to students with high school credit for one year of biology plus one year of physics or chemistry.

Physics 131, 132, 133; or 231, 232, 233

10 credits in chemistry other than Chem 101

Geology 211 plus one course from Geol 212, 310, 311 or Physics 105

Biology 101, 371 and one of: 221, 222, 223, 224, 225

Biology 101, 222, 224

Biology 101, 223, 225

Physics 105, 131, 205



## MAJORS AND MINORS

In addition to the general education and other common degree requirements listed on the preceding pages, the candidate for a Bachelor of Arts or Bachelor of Science degree must complete a major area emphasis which is usually accompanied by supporting courses. A minor is optional. A few concentrations are offered which encompass both a major and a minor. Students will confer with appropriate departmental advisers to plan study programs. Transfer students are expected to complete at least a portion of their work in the major and minor fields in this institution.

Majors offered for the Bachelor of Arts degree:

|                  |                           |
|------------------|---------------------------|
| Art              | Industrial Technology     |
| Art History      | Journalism                |
| Biology          | Mathematics               |
| Chemistry        | Math-Computer Science     |
| Dance            | Music                     |
| Econ & Bus Admin | Philosophy                |
| English          | Physics                   |
| Foreign Language | Political Science         |
| Geography        | Psychology                |
| Geology          | Recreation                |
| History          | Sociology/Anthropology    |
| Home Economics   | Speech                    |
|                  | Urban & Regional Planning |

*Minor area emphases*, generally requiring 25 credits, are offered in the fields above and also in Business Education, Classical Studies, East Asian Studies, Health Science, and Linguistics.

*Major concentrations* offered for the Bachelor of Science degree:

|            |                       |
|------------|-----------------------|
| Chemistry  | Industrial Technology |
| Geology    | Physical Geochemistry |
| Geophysics | Vicoed                |

(All present Bachelor of Science majors are concentrations encompassing both major and minor.)

### *Student-Faculty Designed Majors*

Students desiring concentrated study in areas not listed as majors by the departments of the College of Arts and

Sciences may design a major in conference with faculty members. For details of this procedure, please refer to the Office of Academic Advisement.

### *Internship and Field Study Programs*

Many departments offer credit through programs involving practical experience in application of the discipline. These work experience situations are arranged beforehand to accomplish a specific goal. For details of these programs, please refer to the chairman of the department concerned.

### *Graduate Study Programs*

Students interested in programs leading to degrees beyond the baccalaureate should seek advisement at the office of the Dean of Graduate Studies. The individual department listings include courses offered at the graduate level.

### *Programs Leading to Certificates in Education*

Students are referred to the section entitled "Education" for all programs relating to certification.

## THE HONORS PROGRAM

The undergraduate Honors Program provides a challenging opportunity for the student of high academic ability to realize his potential. Freshmen are invited into the Honors Program on the basis of entrance exams, high school grade averages, and/or recommendation. Students already enrolled in college enter the program on the above bases or may be recommended by a college instructor.

Those selected for Honors work participate in much of the general education program required of all degree candidates but are responsible to the Honors Board for the precise determination of their programs. Substitutions or waivers of some required courses may

## *College of Arts and Sciences*

be approved on the basis of individual needs. The Honors Board and the student's major department have joint responsibility for upper division course requirements.

There are a number of special colloquia and tutorials for Honors students.

Students interested in this program are invited to consult the Chairman of the Honors Board for more details.

## UNIVERSITY TRANSFER PROGRAMS

The College recognizes that some who enroll are later planning to transfer to other collegiate institutions. Students interested in such fields as dentistry, law, and medicine are referred to appropriate preprofessional programs outlined in the annual Class Schedule. These programs have been developed in cooperation with schools offering such professional training. For example, there follow a few points of advisement of interest to those intending to enter one of the above mentioned professions:

### *Predental Program*

The Council on Dental Education of the American Dental Association has specified that the minimum preparation for entry into a dental school include at least two years of college-level study. However, only a few exceptional students are accepted to dental school with just two years of study. A minimum of three years is recommended and many students obtain the bachelor's degree. A predental student may major in almost any liberal arts or science field but his program must include at least one year of college English, one year of physics, one year of inorganic chemistry, one year of organic chemistry and a minimum of one year of biology. Each predental student should prepare to complete the Dental Aptitude Test given normally in October, January and April throughout the country.

The predental adviser at Western Washington State College is Dr. H. W. Wilson, Department of Chemistry.

### *Prelaw Program*

Entrance to most law schools requires, with very rare exception, the completion of a bachelor's degree program. It is therefore advisable that a prelaw student plan to complete the B.A. degree requirements at Western Washington State College. Normally schools of law do not prescribe a definite undergraduate curriculum for prelaw students. With the assistance of his adviser, a student should follow his own intellectual interests. He should strive to acquire a high level of proficiency in communication skills; to gain understanding of values in human institutions, political, economic, and social; and to develop in himself objective and critical thought processes.

The Law School Admission Test given throughout the country each year by the Educational Testing Service in Princeton, New Jersey, is required for admission to nearly all law schools. A student should plan to take the test during the academic year preceding the one for which admission to law school is sought, preferably in February and not later than April.

The prelaw adviser at Western Washington State College is Mr. G. Kepl, Department of Political Science.

### *Premedicine Program*

A minimum of three years of college study is normally required for admission to the leading medical schools. However, only outstanding students are accepted with this minimum background and most students should expect to earn a bachelor of arts or bachelor of science degree prior to entering medical school. Most medical schools do not prescribe a particular program for premedical studies but it is recommended that the program include at least one year of English, one year of inorganic chemistry, one year of organic chemistry, one course in quantitative analysis, one year of college physics and at least one year of college biology.

The Medical College Admissions Test is normally required and it is usually completed in May or October. The premedical adviser at Western Washington State College is Dr. Herbert A. Brown, Department of Biology.

## SPECIAL ORIENTATION ACTIVITIES

Immediately prior to the opening of Fall Quarter new students participate in a program introducing them to the College. Activities include opportunities to meet and interact with others, to explore one's personal and academic goals, to become acquainted with the variety of potential learning experiences on campus, and to develop an understanding of the services and facilities available. This orientation extends well into the quarter.

### *Freshman Counseling*

The ultimate aim of all counseling at Western Washington State College is to develop in the student himself the capacity and skills necessary for self-guidance. During his first year each freshman is teamed with a specially trained upper division Student Sponsor and a member of the faculty. These advisers assume responsibility for assisting freshmen to meet effectively the initial problems of adjusting to college, to develop a career or area concentration plan, and to select the program of studies most appropriate to that plan.

### *Academic Advisement*

As the student completes his freshman year, consisting largely of prescribed general education courses, he is referred to the academic departments for continued personalized advisement in planning and selecting his courses of study. Faculty within each department share responsibility for counseling students electing concentrations in their area. In some cases, faculty from several departments may cooperate with a student in constructing his own interdisciplinary major; in others, faculty members may recommend to the department chairman the waiving of certain course prerequisites (when it has been demonstrated that the student already has these competencies).

## COURSE NUMBERING

Courses numbered from 100 to 299 are classified as lower division; those numbered 300-499 as upper division. The first digit generally indicates class level for which the course is intended.

|         |                                |
|---------|--------------------------------|
| 100-199 | first-year courses             |
| 200-299 | second-year courses            |
| 300-399 | third-year courses             |
| 400-499 | fourth-year courses            |
| 500-599 | open only to graduate students |
| 600-699 | post-master's degree courses   |

Credits (quarter hours) are given in parenthesis after each course title.

Students are not permitted to take courses more than one year above their class standing except in unusual circumstances.

In general, the numbers 300, 400, and 500 are used to designate individual study or conference courses or special project work in a given field. Such courses are available only through prior arrangement with the instructor and with the approval of the department chairman.

The numbers 197, 297, 397, 497 and 597 are reserved for experimental courses generally offered once only.

The number 445 is reserved for topics showing "Current Trends," while the number 417 is used for seminars in specialized areas of interest.

Courses listed in this catalog constitute a record of the total academic program of the College. Listing herein does not necessarily indicate that each course will be offered every year. Consult the annual Class Schedule, the Summer Bulletin, and bulletins from the Center for Continuing Studies for the scheduling of courses.

# ART

*Professors:* Marsh (Chairman), Weiner.

*Associate Professors:* Foss, Hanson, Kelsey, Schlotterback, Templeton, Thomas, Vike, Wegner.

*Assistant Professors:* Bishop, Jensen, Johnston, McCormick, McIntyre, Urso, Vassdal.

Students planning to major in art are urged to plan carefully early in their college careers with department advisers to assure proper scheduling of sequences. Transfer students are required to complete in residence a minimum of 15 credits for the Teacher Education major, 11 credits for the Arts and Science major, or 5 credits for a minor.

## BACHELOR OF ARTS

*Studio Major*      73 credits plus Supporting Courses

- Art 101, 102, 103, 130, 201, 210 or 211, 220, 230, 401
- One course from Art 240, 250, 260
- One course from Art 302, 402, 403 (crafts majors take 331 instead)
- Art History 193, 194, 195, and one additional art history course
- Supporting courses outside the field of art selected under advisement

Upper division concentration in one of the following areas:

### *Printmaking*

- Art 311, 312, 313, 411, 412, 413
- One course from Art 302, 402
- One course from Art 321, 325, 328
- 5 credits in upper division studio courses outside this area

### *Painting*

- 18 credits from Art 321, 325, 328, 421, 422, 423, 425, 426, 427
- One course from Art 302, 402
- 8 credits in upper division studio courses outside this area

### *Sculpture*

- 18 credits from Art 231, 331, 332, 333, 341, 431, 432, 433, 434, 435
- 8 credits in upper division studio courses outside this area

### *Crafts*

- Art 341, 351, 361
- 12 credits under advisement in a major craft—ceramics, jewelry, enameling, glass or textiles
- 8 credits in upper division studio courses outside this area

### *Combined Areas*

- 12 credits from one of the above areas
- 9 credits from a second area (commercial art courses may qualify—Art 371, 372, 471 or 472)
- 8 credits in upper division courses outside the area

### *Studio Minor*

25 credits

- Art 101, 102, 130
- Art History 195
- Electives selected under departmental advisement

### *Art History Major*

60 credits  
plus Supporting Courses

- Art History 193, 194, 195, 290, 390, 493
- Three areas from:
  - (a) Art History 394, 494
  - (b) 295, 395
  - (c) 292, 392
  - (d) 398, 498
- 9 credits elective in art history
- 15 credits in studio courses, including Art 101, 102, 103

- Supporting courses: 10 credits in appropriate courses outside the field of art selected under departmental advisement
- Reading knowledge of French or German

*Art History Minor* 24 credits

- Art History 193, 194, 195, 493
- Two courses selected under advisement from each of two areas: Primitive, Ancient, Renaissance, Modern, or American

## BACHELOR OF ARTS IN EDUCATION

In addition to the general requirements for all honors students, an art major who wishes to graduate "with honors" must complete Art 401, Music 342 or English 487.

*Major* Elementary and Secondary 45 credits

- Art 101, 102, 103, 130, 220, 230, 280, 381, 382
- Art History 195
- One additional course in art history
- Two courses from Art 210 or 211, 240, 250, 260
- Two upper division courses from the studio concentrations listed above in the Arts and Sciences major

*Minor* 25 credits

- Art 101, 102, 130, 280, 381
- Art History 195
- Electives under departmental advisement

*Major Concentration* 70 credits

This concentration satisfies requirements for both a major and a minor for the art specialist.

- Art 101, 102, 103, 130, 201, 210 or 211, 220, 230, 270
- Art 280, 381, 382, 401
- One course from Art 240, 250, 260

- One course from Art 302, 402 (crafts majors substitute 331)
- Art History 193, 194, 195, and one additional art history course
- 12 credits in one of the areas listed above in the Arts and Sciences major
- 3 credits in crafts if that area not elected

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, an art major who wishes to graduate "with honors" must complete Art 401, Music 342 or 442 or English 487.

## GRADUATE STUDY

For a concentration leading to the Master of Education degree, see the *Graduate Bulletin*.

## COURSES IN ART

(See also *Art History*, page 62.)

NOTE: The Art Department may request samples of work produced in a studio course for exhibition purposes.

- 101 DRAWING I (3)  
Fundamental principles and techniques using a variety of black and white media.
- 102 COLOR AND DESIGN (3)  
Prerequisite: Art 101. Studies of form and structure in a variety of media; emphasis on color, pattern and design concepts.
- 103 DRAWING II (3)  
Prerequisite: Art 101. Emphasis on pictorial space, volume, and the figure.
- 130 THREE DIMENSIONAL DESIGN (3)  
Exploration of construction in space employing a variety of media.
- 190 ART APPRECIATION (2)  
Introduction to form and expression in the visual arts for the non-major.

## Art

- 201 LIFE DRAWING I (3)  
Prerequisite: Art 103.
- 210 PRINTMAKING I (3)  
Prerequisites: Art 102, 103. Introduction to intaglio processes.
- 211 PRINTMAKING II (3)  
Prerequisite: Art 101, 103. Introduction to lithographic processes.
- 220 PAINTING I (3)  
Prerequisite: Art 102. Introduction to painting.
- 230 SCULPTURE (3)  
Modeling and carving with emphasis on projection of volume in space.
- 231 SCULPTURE II (3)  
Prerequisites: Art 230. Modeling, carving and/or joining as techniques of sculpture.
- 240 CERAMICS I (3)  
Prerequisites: Art 101 or 380. Materials and techniques of ceramic forms; various hand processes including coil building and slab construction; elementary wheel forming, glaze composition, kiln stacking and firing.
- 250 JEWELRY I (3)  
Prerequisite: Art 101, 130 or Tech 210 and 214. Design and construction of jewelry in various metals, with emphasis on silver; the setting of stones.
- 252 ENAMELING (3)  
Prerequisite: Art 102, 130; Art 250 recommended. Techniques of enameling on metals.
- 260 FABRIC DESIGN I (3)  
Prerequisites: Art 102 and one art history course. Problems in design for fabrics using techniques of block print, stitchery and tie dye.
- 270 LETTERING I (2)  
Prerequisites: Art 101 or permission. Anatomy of letter forms, alphabets and calligraphy; problems in pen and brush lettering.
- 280 INTRODUCTION TO ART EDUCATION (2)  
Prerequisite: 9 credits in art. Examination of the profession of art education, teaching skills, teaching as influencing student behavior in art, curriculum content and materials.
- 300 SPECIAL PROBLEMS IN ART (1-5)  
Prerequisite: permission of instructor.
- 302 LIFE DRAWING II (3)  
Prerequisite: Art 201. Repeatable to maximum 9 credits.
- 311 PRINTMAKING—LITHOGRAPHY (3)  
Prerequisites: Art History 195; Art 211 Planographic processes; emphasis on lithography and woodcut.
- 312 PRINTMAKING—INTAGLIO (3)  
Prerequisites: Art History 195; Art 210. Intaglio processes; etching, engraving, and aquatint.
- 313 PRINTMAKING WORKSHOP (3)  
Prerequisites: Art 311 or 312. Problems in printmaking.
- 321 PAINTING (3)  
Prerequisites: Art 220; Art History 195. Repeatable to total of 9 credits.
- 325 WATER COLOR PAINTING (3)  
Prerequisites: Art History 195, Art 220. Various water-soluble media; repeatable to total of 9 credits.
- 328 LIFE PAINTING (3)  
Prerequisites: Art 220, Art History 195. Concentration on the human figure.
- 331 SCULPTURE III (3)  
Prerequisites: Art 231; Art History 195. Problems in three dimensional form and expression employing a variety of media and materials; repeatable to total of 9 credits.
- 341 CERAMICS I (3)  
Prerequisites: Art 240; Art History 195. Problems in forming with the potter's wheel, high temperature glazes, clay body construction, stacking and firing practices.
- 342 CERAMICS III (3)  
Prerequisites: Art 341. Advanced problems in ceramic form and expression.
- 351 JEWELRY II (3)  
Prerequisites: Art 250; Art History 195. Problems in simple and centrifugal casting.
- 361 FABRIC DESIGN II (3)  
Prerequisites: Art 260; Art History 195. Design for fabric using silk screen and batik.
- 362 FABRIC DESIGN III (3)  
Prerequisite: Art 361. Advanced screen printing, natural dyeing and construction of a fabric surface.

- 367 WOVEN AND CONSTRUCTED FABRICS (3)  
Prerequisites: Art 102, 260. Design, materials, and techniques for loom and construction.
- 371 GRAPHIC DESIGN I (2)  
Prerequisites: Art 101, 102, 270, and concurrent enrollment in Tech 340, or permission. Introduction to visual communication as related to graphic processes.
- 372 GRAPHIC DESIGN II (3)  
Prerequisites: Art 103, 371; Art History 195. Design as communication; design and preparation of material for graphic reproduction; repeatable to total of 6 credits.
- 380 ART IN ELEMENTARY EDUCATION (5)  
Prerequisites: Humanities or Art 190; for non-majors. Child development in art for the elementary school; problems in design, drawing, painting and printmaking as they relate to the school.
- 381 THEORIES OF ART EDUCATION (3)  
Prerequisite: Art 280. The philosophy, psychology and procedures for art in the elementary and secondary schools.
- 382 ART EDUCATION STUDIO (3)  
Prerequisites: Art 381 or concurrent registration. Problems in design, drawing, painting, and sculpture and their adaptation to the elementary and secondary school.
- 400 SPECIAL PROBLEMS (2-5)  
Prerequisite: senior status and permission of instructor. Individual instruction in special projects under supervision.
- 401 SEMINAR IN ART (2)  
Prerequisite: senior status or 9 credits in art history; 18 credits in studio courses. Non-historical art criticism course; development of criteria for mature artistic judgment; repeatable to total of 6 credits.
- 402 INVENTIVE DRAWING (3)  
Prerequisite: Art 201 and permission of instructor. Problems in drawing as a major medium; repeatable to total of 9 credits.
- 411 ADVANCED PRINTMAKING WORKSHOP (3)  
Prerequisite: Art 313. Advanced printmaking, open media; use of color in intaglio or lithography; repeatable to total of 9 credits.
- 421 ADVANCED OIL PAINTING (3)  
Prerequisite: 9 credits in painting, or permission of instructor. Individual search for form and expression; repeatable to total of 9 credits.
- 425 ADVANCED WATER COLOR PAINTING (3)  
Prerequisite: Art 325 or permission of instructor. Painting workshop using aqueous media; repeatable to total of 9 credits.
- 431 CERAMIC SCULPTURE (3)  
Prerequisite: Art 331, 341. Use of ceramic materials as a sculptural medium; repeatable to total of 9 credits.
- 432 DIRECT METAL SCULPTURE (3)  
Prerequisite: Art 331. Direct metal sculpture; emphasis on the welding processes; repeatable to total of 9 credits.
- 433 BRONZE CASTING (3)  
Prerequisite: Art 230. Bronze casting by the lost wax process; modeling in clay, wax and plaster; mold-making and other techniques for making cast metal sculpture; repeatable to total of 9 credits.
- 434 ADVANCED SCULPTURE (3)  
Prerequisite: Art 331. Advanced problems in sculptural form; repeatable to total of 9 credits.
- 441 ADVANCED CERAMICS (3)  
Prerequisite: Art 342. Advanced problems in ceramic form and expression; may be repeated for credit with different projects; repeatable to total of 9 credits.
- 451 ADVANCED JEWELRY (3)  
Prerequisite: Art 351. Advanced problems in jewelry as an art form; repeatable to total of 6 credits.
- 461 ADVANCED FABRIC DESIGN (3)  
Prerequisite: Art 361. Advanced workshop in tapestry, rug making and other media; repeatable to total of 9 credits.
- 463 ADVANCED FABRIC DESIGN II (3)  
Prerequisite: Art 461. Advanced study in printed, dyed, woven or constructed textiles; repeatable to total of 9 credits.
- 471 ILLUSTRATION (3)  
Prerequisites: Art History 195; two painting courses. Techniques of illustration for graphic reproduction.
- 472 POSTER AND DISPLAY (3)  
Prerequisite: Art 102 and 270. Two and three-dimensional display; design and production of the silk screen poster.
- 473 GRAPHIC DESIGN III (3)  
Prerequisite: Art 372. Advanced graphic design; repeatable to total of 9 credits.

## Art

- 481 ADVANCED ART EDUCATION (3)  
Prerequisites: previous work in art education; teaching experience. Lectures and studio work in art education as related to materials and evaluation of process, product and individual growth.
- 482 ART EDUCATION WORKSHOP (2-5)  
Prerequisite: teaching experience. Explorations in art media and their adaptation to use in the school; may be repeated with different topics.
- 497d ART HISTORY AND CRITICISM IN THE PUBLIC SCHOOLS (6)  
Prerequisites: 2 art history courses and permission of the instructor. The purposes of this special study program are to provide art majors with opportunities (a) to develop background in art historiography—the process of making art history—and art criticism; (b) to develop an understanding of learning theory in terms of operationalizing art history and criticism in the public school art classroom; (c) produce units of art history and criticism instruction.
- 500 SPECIAL PROBLEMS (2-5)  
Prerequisite: graduate status or completion of an art major or equivalent. Individual research under supervision.
- 511 GRADUATE DRAWING AND PRINTMAKING (2-4)  
Prerequisite: graduate status or completion of an art major or equivalent. Individual problems.
- 521 GRADUATE PAINTING (2-4)  
Prerequisite: graduate status or completion of an art major or equivalent. Individual problems in painting.
- 531 GRADUATE SCULPTURE (2-4)  
Prerequisite: graduate status or completion of an art major or equivalent. Individual problems.
- 541 GRADUATE CERAMICS (2-4)  
Prerequisite: graduate status or completion of an art major or equivalent. Individual problems in ceramics.
- 551 GRADUATE JEWELRY (2-4)  
Prerequisites: graduate status or completion of an art major or equivalent. Individual problems in jewelry.
- 561 GRADUATE FABRIC DESIGN (2-4)  
Prerequisites: graduate status or completion of an art major or equivalent. Individual problems in fabric design.

- 580 SPECIAL PROBLEMS IN ART EDUCATION (2-4)  
Prerequisites: teaching experience and 27 credits in art. Special problems in art education as announced.
- 582 CURRICULUM PLANNING (4)  
Prerequisites: teaching experience and 27 credits in art. Planning, development, implementation and evaluation of art as related to the total curriculum.

## COURSES IN ART HISTORY

- 193 SURVEY OF ART HISTORY I (3)  
Ancient and medieval art.
- 194 SURVEY OF ART HISTORY II (3)  
Renaissance art, 13th-18th centuries.
- 195 SURVEY OF ART HISTORY III (3)  
Modern art in 19th, 20th centuries.
- 290 MODERN ART HISTORY I (3)  
Prerequisite: Art History 195. The art of the 19th century Western World.
- 292 ANCIENT ART I (3)  
Prerequisite: Art History 193 and 194 or permission of instructor. Art of ancient Egypt, Mesopotamia, Crete, Mycenae and peripheral areas.
- 293 SURVEY OF AFRICAN ART (3)  
Not open to students with credit in Art History 494.
- 295 RENAISSANCE ART I (3)  
Prerequisite: Art History 193 and 194, or permission of instructor. Art of the Renaissance in Southern Europe.
- 390 MODERN ART II (3)  
Prerequisite: Art History 195. Art of the 20th century world.
- 391 ORIENTAL ART (3)  
Prerequisites: Art History 193, or 194 or permission of instructor. Oriental art with emphasis on China, India, and Japan.
- 392 ANCIENT ART II (3)  
Prerequisite: Art History 292 or 193 and permission of instructor. Art of the ancient Greek and Roman civilizations.



- 394 **PREHISTORIC AND PRIMITIVE ART I (3)**  
Prerequisite: Art History 193 or 194 or 195; permission of instructor; Soc/Anth 200 or 361 prerequisite or concurrent. Art of the Paleolithic and Neolithic cultures and Western hemisphere primitive cultures.
- 395 **RENAISSANCE ART II (3)**  
Prerequisite: Art History 295 or 193 and 194 and permission of instructor. Art of the Renaissance in Northern Europe.
- 398 **AMERICAN ART TO 1913 (3)**  
Prerequisites: Art History 193, 194, 195, 290. Art from the Colonial period to the Armory Show.
- 400 **SPECIAL PROBLEMS (2-5)**  
Prerequisite: senior status and permission of instructor. Individual instruction in special projects under supervision.
- 492 **MEDIEVAL ART (3)**  
Prerequisite: Art History 392 or 193 and 194 and permission of instructor. Western art from the fall of the Roman Empire to the beginning of the Renaissance.
- 493 **SEMINAR IN ART HISTORY (3)**  
Prerequisite: 12 credits in art history or senior standing or permission of instructor. Research problems of art history, bibliographic materials, research methods, and methods of presentation.
- 494 **PRIMITIVE ART II (3)**  
Prerequisites: Art History 194 or 193 or 195; permission of instructor; Soc/Anth 200 or 363 or 364 prerequisite or concurrent. Tribal arts of Africa and the South Pacific.
- 496 **HONORS TUTORIAL (2-5)**
- 498 **AMERICAN ART, 1913 TO THE PRESENT (3)**  
Prerequisite: Art History 193, 194, 195.
- 500 **SPECIAL PROBLEMS (2-5)**  
Prerequisite: graduate status or completion of an art major or equivalent. Individual research under supervision.
- 590 **DIRECTED STUDIES IN ART HISTORY (1-4)**  
Prerequisite: art major or minor status, senior or graduate level; 12 credits in art history with at least one field concentration.  
Independent art historical research:  
a. Prehistoric and Primitive Art History  
b. American Art History  
c. Modern Art History  
d. Art Theory Aesthetics and Art Criticism  
Cumulative credit in any one area may not exceed 12 credits.

## BIOLOGY

*Professors:* Broad, Flora, Martin, Parakh, Ross, Senger, Slesnick.

*Associate Professors:* Kraft (Acting Chairman), Balzer, Dube, Erickson, Heath, Kohn, Nickelson, Riffey, Schneider, Schwemmin, Taylor.

*Assistant Professors:* Brown, Fonda, Haard, Lighthart, Williams.

Students desiring a major or minor in biology are urged to plan carefully with department advisers early in their college careers in order to assure proper sequences of courses selected. The following major and minor programs are in process of revision. Students graduating through June 1973 may follow the patterns outlined in the 1970-71 catalog. Those who will graduate after that date should take Biology 120, 121 their first year, and continue with Biology 221, 222, 223, 224 and 225 in the second year. The supporting courses listed below are recommended for majors in meeting general education requirements in natural sciences and mathematics.

Transfer students must complete in residence in this college at least 11 credits of the major or 5 credits of the minor.

## BACHELOR OF ARTS

*Major* 50 credits plus Supporting Courses

- Biology 120, 121, 221, 222, 223, 224, 225, 301, 340 (or Math 240), 371, 385 (or Gen Sci 405), 477 (or Chem 471, 472 and 473)
- Physics 131, 132, 133
- Math 122 or 220
- Geology 211 or 212
- Chemistry 121 and 122 (or 124), 123, 251 (or Chem 351, 352 and 353)

## Biology

- For a recommendation for graduate school, Chemistry 127, 128, 351, 352 and 353; or Chemistry 127, 128, 361, 362 and 363 should be taken. Either of these sequences leads to a combined biology major and chemistry minor.
- Supporting courses: Chem 121, 122, 123 (or 124, 123) and choice of
  - (a) Chem 127, 128, 351, 352, 353
  - (b) Chem 127, 128, 251, 361, 362, 363
  - (c) Chem 251 (not recommended for students anticipating graduate study) or 351, 352, 353
- One year of college physics; Math 220 (or 122); Geology 211 or 212
- Biology 340 or Math 240

(Supporting courses may apply where appropriate to a minor.)

### Minor 25 credits

- Biology 120, 121, plus 17 credits additional courses in the department

## BACHELOR OF ARTS IN EDUCATION

The education of a person who intends to teach biology requires at least as much commitment to biology and related sciences as does the preparation of biologists who will not teach. Therefore, no separate, reduced major program leading to the B.A. in Education degree is offered in Biology. Prospective biology teachers will enroll in the Arts and Sciences program. The professional education courses may be included as electives along with the Arts and Sciences program and/or in a post baccalaureate year, part of which may be applied toward the fifth year for a standard certificate. Biology 493 should be added to the major.

Biology teachers desiring to enlarge their recommended competencies in other sciences should consult the departments concerned for proper course sequences.

Students planning to teach at the elementary or junior high school level should take the General Science major which includes biology.

### Minor 25 credits

- Biology 120, 121, plus 17 credits additional courses in the department

### Certification Program 37-46 credits

Minimum requirements for certification for teaching competence.

- Biology 120, 221 or 101
- Biology 221, 222, 223, 224, 225 (or Botany 251, 252, Zool 261, 262)
- Biology 301, 371
- Biology 477 or Zoology 348-349 or Botany 379

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a biology major who wishes to graduate "with honors" will enroll in Biology 396 a, b, c and 496 a, b, c upon advisement of the Departmental Honors Adviser with whom he will work out an individual plan of study and Honors thesis.

## GRADUATE STUDY

For concentrations leading to the Master of Education or the Master of Science degrees, see the *Graduate Bulletin*.

## COURSES IN BIOLOGY

### 101 PRINCIPLES OF GENERAL BIOLOGY (4)

Prerequisite: Physics 101 and Chem 101 or equivalents. Major concepts of biology and their contribution to man's thinking and culture, cell physiology, genetics, growth and development, evolution.

### 120, 121 THE SCIENCE OF BIOLOGY (4 ea)

Prerequisite: Chem 121 or equivalent; to be taken in consecutive quarters. Nature of science and biology, biology and society, organizational levels, major unifying and interrelated concepts; principles of inquiry.

- 221 LOWER ORGANISMS (6)  
Prerequisites: Biol 120-121 or 100. The nature, inter-relationships, and importance of lower plants and animals.
- 222 HIGHER PLANTS I (3)  
Prerequisites: Biol 120-121 or 101. Anatomy, physiology, and reproduction of bryophytes and non-seed vascular plants as related to their evolution. Not open to students with credit in Botany 251 and 252.
- 223 HIGHER ANIMALS I (3)  
Prerequisites: Biol 120-121 or 101. Organismal biology and evolution of Deuterostomes (Echinoderm-Chordate line), particularly Chordates, emphasizing functional anatomy and organismal adaptation. Not open to students with credit in Zool 261 and 262.
- 224 HIGHER PLANTS II (3)  
Prerequisites: Biol 120-121 or 101; Biol 221 and 222 or permission of the instructor. Anatomy, physiology and reproduction of seed plants with emphasis on ecological adaptations. Not open to students with credit in Botany 251 and 252.
- 225 HIGHER ANIMALS II (3)  
Prerequisites: Biol 120-121 or 101. Organismal biology of Cnidaria and protostomes (Arthropod line) emphasizing functional adaptations and evolutionary relationships. Not open to students with credit in Zool 261 and 262.
- 240 MARINE BIOLOGY (3)  
Prerequisite: Biol 101. Study of plants and animals of the seashore. Not open to students with credit in Zool 461 or Botany 456. Summers only.
- 301 ECOLOGY (5)  
Prerequisite: 14 credits in biology; chemistry and physics recommended. Community energetics and organismal-environmental relationships in marine, fresh water, and terrestrial habitats.
- 307 HUMAN POPULATIONS AND NATURAL RESOURCES (3)  
Prerequisite: Biol 101. Growth of human populations; changes in natural resources resulting in growth; prospects and consequences of population increases and resource utilization. Not open to those with credit in Biol 407; not applicable to major or minor.
- 340 BIOMETRICS (5)  
Prerequisite: Math 121 or equivalent. Digital computer programming as a means by which a student computes statistics, e.g., mean, variance, regression, correlation, for his own data; cluster analysis procedures.
- 345\* FUNDAMENTALS OF MICROBIOLOGY (5)  
Prerequisites: Chem 121, 122 or 124, and 251; 10 credits in botany or zoology, or permission of instructor. Comparative morphology, taxonomy, physiology and relationship of microbes; bacteria, yeasts, molds, and viruses.
- 371 GENETICS (5)  
Prerequisite: Biol 120, 121, or 101. Basic theories, principles and laws of heredity; laboratory experiments with *Drosophila*.
- 383 BIOLOGICAL SCIENCE FOR THE ELEMENTARY SCHOOL (3)  
Prerequisite: general education requirements in science and mathematics, or permission of instructor. Philosophy, concepts, learning experiences, and materials for the biological sciences suitable to the intermediate grades.
- 385 DEVELOPMENT OF MODERN IDEAS IN BIOLOGY (5)  
Prerequisite: 20 credits in biology or physical sciences. Evaluation of theories and explanations in biological sciences; concepts and logical relationships characterizing living systems.
- 396a,b,c HONORS TUTORIAL (2-5 ea)
- 397d THE CHEMISTRY AND PHYSIOLOGY OF FOREIGN SUBSTANCES (4)  
Prerequisites: Biol 120, 121 or 101, Chem 251 (or 351). A survey of the chemical and biological effects of currently encountered chemicals such as: chemical contraceptives, psychotomimetic agents, conventional drugs, antibiotics. Also listed as Chem 397.
- 399 SEMINAR IN BIOLOGY (1)  
Prerequisite: 25 credits in biological sciences and permission of instructor. Outstanding developments, past and present, in the biological sciences. May be repeated for credit.
- 400 SPECIAL PROJECTS IN BIOLOGY (2-5)  
Prerequisite: permission of instructor. May be repeated for credit.
- 402 LIMNOLOGY (5)  
Prerequisite: Biol 301. Physical and chemical characteristics of fresh water in relation to biotic communities; field trips.

*\*Students planning to take Biol 345 and 477 should take 345 first.*

## Biology

- 406 GENERAL OCEANOGRAPHY (5)  
Prerequisites: Physics 131, 132; Chem 121, 122, or permission of instructor. Geological, physical, chemical, and biological aspects of oceanography, reinforced with oceanographic field exercises.
- 407 CURRENT ENVIRONMENT (3)  
Prerequisite: Biol 301, and senior status or permission of instructor. Current literature on environment, focusing on pollution and overpopulation. Not recommended for those with credit in Biol 307.
- 445b CURRENT TRENDS IN ECOLOGY: POLLUTION CONTROL (3)  
Prerequisite: completion of Gen Ed natural science requirements, or permission of major adviser. Credit not applicable to majors or minors in biology. Not open to students in Biol 397/Chem 397, nor Biol 307. Sources, effects, and the measurement of air and water pollution, solid wastes, and noise. Formulation and enforcement of regulations at the federal, state and local levels. Description of processes and equipment for pollution control. Emphasis on the problems of the Puget Sound Basin.
- 453 MONTANE BIOLOGY (3-5)  
Prerequisite: Biol 301. Flora and fauna of the Cascade Mountains; their variety, distribution and interactions with the environment. Summer only.
- 471 PHYSIOLOGICAL GENETICS (5)  
Prerequisites: Biol 371 and 477. Structure and chemical composition of genetic material; genetic systems of bacteria, viruses, yeasts and molds; aspects of biochemical genetics of man applying to the nature of gene functions.
- 477\* CELLULAR PHYSIOLOGY (5)  
Prerequisite: 20 credits in biological science; Chem 121, 122, and 251 or 351, 352, or permission of instructor. Cell organelle structure and function, biological chemicals, energy utilization and production by the cell, cellular biosynthesis, integration and control of cellular activities.
- 478 CELLULAR PHYSIOLOGY (5)  
Prerequisite: Biol 477 or permission of instructor. Structure and function of cells; hormonal regulation of cellular metabolism; exchange of materials across membranes; bioelectricity, excitability, contractility.
- 490 PRINCIPLES OF ORGANIC EVOLUTION (3)  
Prerequisite: Biol 371, Bot 252, Zool 261. Principles, patterns, processes, and mechanisms of evolution in the organic world.
- 493 TEACHING BIOLOGICAL SCIENCE (3)  
Prerequisite: 15 credits in biological science. Recent trends in biology and science education; critical study of modern curriculum materials, clinical analysis of teaching and laboratory work. For biology teachers in secondary schools and in higher education.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 500 SPECIAL PROJECTS IN BIOLOGY (2-5)  
Prerequisite: permission of instructor. May be repeated for credit.
- 501 THESIS RESEARCH (1-12)  
Prerequisite: permission of thesis adviser. Research contributing to a graduate degree program. Grades of satisfactory and unsatisfactory only; may be repeated.
- 503 ADVANCED TOPICS IN ECOLOGY (4)  
Prerequisites: Biol 301 and permission of instructor. Analysis of current literature on fundamental properties of ecosystems, communities, populations, species, and characteristic environments.
- 504 ECOLOGICAL INSTRUMENTATION (3)  
Prerequisite: Biol 301, Math 240, and permission of instructor. Theory, design and operation of environmental monitoring devices; laboratory experience in practical electronics and transducing and recording elements.
- 568 TOPICS IN DEVELOPMENTAL AND COMPARATIVE MORPHOLOGY (4)  
Prerequisites: one course from Botany 456, 472, 475, Zool 366, 368 as appropriate to topic offered; permission of instructor. Structural changes, cellular interactions, and control mechanisms operating during growth and development or evolution of selected organisms.
- 571 ADVANCED TOPICS IN GENETICS (4)  
Prerequisites: Biol 371 and permission of instructor. Inheritance and gene action in plant, animal, and microbial systems; illustrative experiments with *Drosophila*, *Aspergillus*, or other organisms.
- 577 ADVANCED TOPICS IN PHYSIOLOGY (4)  
Prerequisites: Biol 477 or Chem 471 and permission of instructor. Topics in general, microbial, or comparative physiology; laboratory work illustrating processes or experimental techniques.

\*Students planning to take Biol 345 and 477 should take 345 first.

- 580 RADIATION BIOLOGY (3)  
Prerequisites: Biol 477, Physics 131, 132. Forms of ionizing radiation and their biological effects; techniques for safe handling of radiation producing materials; use of radiation detecting instruments; use and biological effects of radiation.
- 583 ADVANCED TOPICS IN BIOSYSTEMATICS (4)  
Prerequisite: permission of instructor. Role of morphology, cytology, bio-chemistry, and genetics in taxonomy; systematic study of a specific group of local organisms.
- 599 SEMINAR IN BIOLOGY (2)  
Prerequisite: 40 credits in biology. Selected problems in biology, with emphasis on current literature. May be repeated for credit.

## COURSES IN BOTANY

- 253 PLANTS OF THE NORTHWEST (3)  
Identification and field recognition of plants of the local region; their reproduction and adaptation to environment. Summers only.
- 352 SYSTEMATIC BOTANY (5)  
Prerequisite: Botany 252. Historical survey of classification systems; use of taxonomic keys, and evolutionary development of flowering plants; recognition of common plants.
- 379 PLANT PHYSIOLOGY (5)  
Prerequisite: Botany 251. Mineral nutrition, water economy, soils, auxins, and other items of special importance to plant growth.
- 404 PLANT COMMUNITIES (4)  
Prerequisite: Biol 301. Ecology of plant communities with special emphasis on analysis, description, succession, and distribution. Weekend field trips included.
- 452 PHYLOGENY OF FLOWERING PLANTS (4)  
Prerequisite: permission of instructor. The study and application of chemical, structural, and cytogenetical characteristics in the determination of phylogeny among flowering plants.
- 454 MYCOLOGY (5)  
Prerequisite: Botany 252. Taxonomy of the fungi with emphasis on morphology, phylogenetic trends, collection and identification of common species. Several weekend field trips are required.

- 456 ALGAE (5)  
Prerequisite: Botany 252. Collection, culture, identification, classification, distribution, and economic importance of marine and fresh water algae.
- 458 BRYOPHYTES (5)  
Prerequisite: 10 credits in biology. Collection, identification, distribution, and evolution of mosses and liverworts.
- 475 STRUCTURE AND DEVELOPMENT OF VASCULAR PLANTS (4)  
Prerequisites: Botany 251, 252. A study of plant organs and their tissues from the standpoint of origin, differentiation, growth, and maturation.
- 481 PHYSIOLOGICAL RESPONSES OF PLANTS TO ENVIRONMENT (5)  
Prerequisites: Biol 301 and Botany 379. Changes induced in plants by variations in water, light, temperature, etc.

## COURSES IN ZOOLOGY

- 263 ANIMALS OF THE NORTHWEST (3)  
Amphibians, reptiles, birds and mammals; their identification, life histories, habits, and distribution. Summers only.
- 348-349 HUMAN ANATOMY AND PHYSIOLOGY (5 ea)  
Prerequisite: Biol 101 or permission of instructor; Zool 348 prerequisite to 349. Structure and function of the human body; emphasis on physiological principles and homeostatic mechanisms.
- 366 COMPARATIVE VERTEBRATE ANATOMY (5)  
Prerequisite: Zool 262. Morphology and evolution of organic systems of major vertebrate groups.
- 368 GENERAL VERTEBRATE EMBRYOLOGY (5)  
Prerequisite: Zool 262. Development of the vertebrates; laboratory study of embryos of the frog, chick, and pig with application to human development.
- 403 PHYSIOLOGICAL ECOLOGY (5)  
Prerequisite: Biol 301 and permission of instructor. Field and laboratory studies concerning physiological responses of marine animals to environmental factors; methods for design and analysis of experiments.
- 424 ENTOMOLOGY (3)  
Prerequisite: Zool 262. Insects: their morphology, physiology, metamorphoses, classification, and economic importance.

## Biology

### 425 FIELD ENTOMOLOGY (3)

Prerequisite: Zool 262. Collection, preservation, and identification of insects. Summers only.

### 426 PRINCIPLES OF INSECT CONTROL (2)

Prerequisite: Zool 262 or permission of instructor. Legal, physical, cultural, chemical, and biological regulation of insect populations.

### 428 ENTOMOLOGY LABORATORY (2)

Prerequisite or concurrent: Zool 424. Anatomy, physiology, and identification of insects.

### 450 PARASITOLOGY (4)

Prerequisites: Zool 261, 262; two quarters of college chemistry. Representative animal parasites with emphasis on structural and physiological adaptations of parasite and host.

### 461 MARINE INVERTEBRATE ZOOLOGY (5)

Prerequisite: Biol 301. Laboratory and field study of local marine invertebrates.

### 463 ORNITHOLOGY (5)

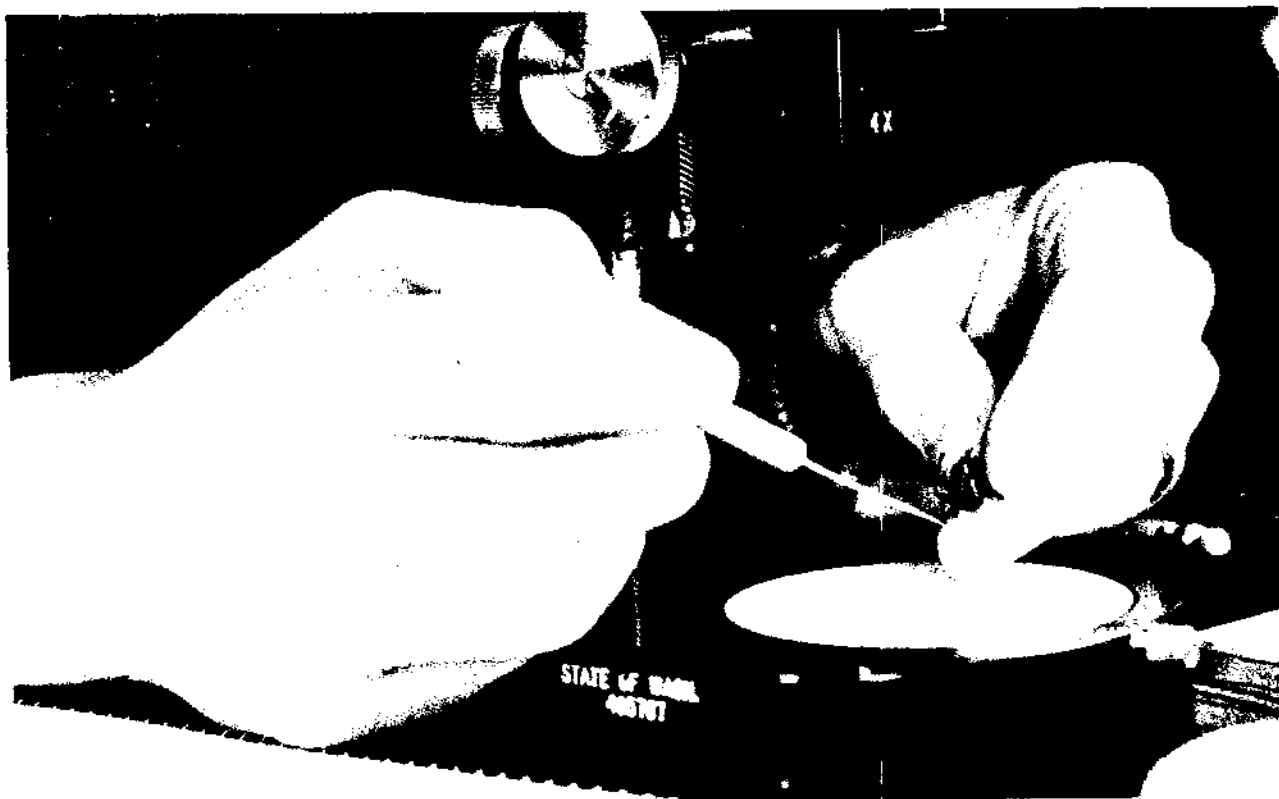
Prerequisite: Biol 120, 121 or 101. Evolution of morphological adaptations of birds, classification, distribution; annual cycle including migration, breeding and population dynamics; laboratory study, field trips.

### 465 MAMMALOGY (5)

Prerequisite: Zool 262. Structural and physiological adaptations, population dynamics, distribution and classification of mammals with laboratory emphasis on local species.

### 524 AQUATIC ENTOMOLOGY (3)

Prerequisites: Zool 424 and Biol 301. Classification and ecological interrelationships of insects in streams and lakes.



# CHEMISTRY

*Professors:* Chang, Knapman, Neuzil.

*Associate Professors:* Crook (Chairman), Besserman, Eddy, King, Lampman, Miller, Weyh, Wilson.

*Assistant Professors:* Gerhold, Kriz, McIntyre, Pavia, Russo, Searle, Whitmer, Wicholas.

Students planning to major in chemistry or to begin university transfer programs involving chemistry courses are advised to consult the department at the beginning of the first year to arrange for proper sequence of courses. Advice of the department should be sought in the choice of options in the general education science requirements.

## BACHELOR OF ARTS IN EDUCATION

*Major* –Senior High School

45 credits plus Supporting Courses

- Chemistry 121, 122, 123, 127, 128, 333
- Chemistry 351, 352, 353, 354, 461, 462, 463
- Phys Sci 492
- Supporting courses: one year college physics and Math 121, 122, 222

*Major Concentration* –Chemistry-Mathematics

78 credits plus Supporting Courses

This concentration provides depth leading to recommendation for teaching competence in both areas. It satisfies requirements for both a major and a minor.

- Chemistry 121, 122, 123, 127, 128 and 461, 462, 463 or 361, 362, 363
- 9-11 credits in chemistry to include a minimum of 5 credits in organic chemistry under departmental advisement
- Phys Sci 492
- 40 credits in mathematics to include methods courses under departmental advisement
- Supporting courses: one year college physics

*Major Concentration* - Chemistry-Physics

73 credits plus Supporting Courses in mathematics

This concentration provides depth leading to recommendation for teaching competence in both areas. It satisfies the requirements for both major and minor.

- Chemistry 121, 122, 123, 127, 128
- Chemistry 461, 462, 463 or 361, 362, 363
- 9-11 credits in chemistry including 5 credits in organic chemistry under departmental advisement
- Physics 231, 232, 233, 381, 235 or 255, 371 or 441
- 9 credits in physics under departmental advisement
- Phys Sci 492
- Supporting courses: Math 121, 122, 222, 223

*Minor* 25 credits

Same as Bachelor of Arts minor below.

*Extended Minor* 35-37 credits

- Chemistry 121, 122, 123, 127, 128, 461, 462, 463 (or 361, 362, 363), Phys Sci 492
- 6 to 8 credits under departmental approval from Chemistry 251, 333, 351, 352, 353, 354, 441

*Teaching Competence*

Recommendation for teaching competence in chemistry normally requires completion of one of the above majors or the extended minor with a grade point of 2.5 or better in the chemistry courses.

## Chemistry

### BACHELOR OF ARTS DEGREE

*Major* 56 credits plus Supporting Courses

- Chemistry 121, 122, 123, 127, 128, 333, 351, 352, 353, 354, 355, 434, 461, 462, 463, 464, 465, plus elective
- Supporting courses: one year college physics and Math 121, 122, 222

*Minor* 24 or 25 credits

- Chemistry 121, 122, 123, 127, 128
- A minimum of 9 or 10 credits under approval of the chemistry department from Chemistry 251, 333, 351, 352, 353, 354, 371, 461, 462, 463 (or 361, 362, 363), 482, 483

### BACHELOR OF SCIENCE DEGREE

*Major Concentration* 110 credits

(Satisfies both the major and minor.)

- Chemistry 121\*, 122, 123, 127, 128, 333
- Chemistry 351, 352, 353, 354, 355, and 302 or 399
- Chemistry 434, 441, 461, 462, 463, 464, 465
- Supporting courses: Physics 231, 232, 233; Math 121\*, 122, 222, 223
- Electives, selected under departmental advisement in chemistry, biology, physics and mathematics to total 110 credits including above required courses

Note: Western Washington State College is approved by the American Chemical Society for certification of students who voluntarily complete a program which satisfies the minimum requirements of the Society.

\*5-10 credits less of required courses if student begins sequence with Chem 124 and Math 122.

These requirements may be met by including in the Bachelor of Science program Chemistry 454 or 455, six credits in Chemistry 400 or 498, six credits under advisement in advanced chemistry, mathematics or physics, and by demonstrating in the Chemistry Department a reading knowledge of German or Russian.

### DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a chemistry major who wishes to graduate "with honors" must complete Honors 361, 461; upper division chemistry courses—30 credits for an Arts and Sciences major, 25 credits for a Teacher Education major; Chemistry 498; at least 4 credits in Chemistry 396 a, b, c or 496 a, b, c.

### GRADUATE STUDY

For concentrations leading to the Master of Education or the Master of Science degrees, see *Graduate Bulletin*.

### COURSES IN CHEMISTRY

#### 101 CHEMICAL CONCEPTS (4)

Prerequisite: Physics 101 or one year high school physics. Scientific method and its use in the development of such concepts as structure, states, and reactions of matter. Restricted to students without high school chemistry.

#### 115 GENERAL CHEMISTRY (5)

Principles and laws of chemistry developed from the properties, structure, and reactions of matter; an abbreviated course in general chemistry for students not requiring Chem 121, 122 in their programs.

#### 121 GENERAL CHEMISTRY (4)

Methods of chemistry, nature of matter, atoms, chemical bond, stoichiometry, states of matter.

#### 122 GENERAL CHEMISTRY (4)

Prerequisite: Chem 121; concurrent enrollment in Chem 123 recommended. Changes of state; solutions, colloids, chemical kinetics, chemical equilibrium; equilibrium in aqueous solutions.



- 123 GENERAL CHEMISTRY LABORATORY (2)  
Prerequisite or concurrent: Chem 122 or 124. Laboratory experiments illustrative of principles and practices in general chemistry.
- 124 PRINCIPLES OF CHEMISTRY (4)  
Prerequisites: strong background in high school chemistry and/or mathematics; permission of department; concurrent enrollment in Chem 123 required. An accelerated course in general chemistry which in one quarter covers the topics of both Chem 121 and Chem 122.
- 127 GENERAL CHEMISTRY (3)  
Prerequisite: Chem 122 or 124. Solution equilibria, electrochemistry, elementary chemical thermodynamics and coordination compounds.
- 128 ELEMENTARY QUANTITATIVE CHEMISTRY (2)  
Prerequisite: Chem 123 or one year of general chemistry. Experiments in quantitative chemistry.
- 208 INDUSTRIAL CHEMISTRY (3)  
Prerequisite: Chem 115 or 121. Industrial chemistry and chemical technology in the contemporary world.
- 209 INDUSTRIAL CHEMISTRY LABORATORY (2)  
Prerequisite: Chem 208. Small scale experiments of industrial processes; field trips to chemical industries.
- 251 ELEMENTARY ORGANIC CHEMISTRY (5)  
Prerequisite: Chem 115 or 121. Reactions, nomenclature, and uses of carbon compounds; an abbreviated course in organic chemistry primarily for persons not requiring the Chem 351-354 series.
- 300 PROJECT IN CHEMISTRY (1-2)  
Prerequisites: 20 credits in chemistry and permission of instructor. Projects under supervision.
- 302 CHEMICAL LITERATURE (1)  
Prerequisite: permission of instructor. Primary, secondary and tertiary sources of published chemical information.
- 305 GLASS WORKING (1)  
Prerequisite: permission of instructor. Basic glass working and construction of simple glass apparatus.
- 333 INTRODUCTORY ANALYTICAL CHEMISTRY (5)  
Prerequisite: one year of general chemistry including Chem 128. Theory and practice of separation methods including precipitation, extraction, and chromatography; optical and potentiometric methods of determination.
- 351, 352, 353 ORGANIC CHEMISTRY (3 ea)  
Prerequisite: Chem 122 or 124; each course prerequisite to the next. Chemistry of carbon compounds with emphasis on structural theory, reactions, and mechanisms.
- 354 ORGANIC CHEMISTRY LABORATORY (2)  
Prerequisite: Chem 351. Reactions, separations and syntheses of organic compounds.
- 355 QUALITATIVE ORGANIC ANALYSIS (3)  
Prerequisite: Chem 128, 354, and 353 or concurrent. Identification and characterization of organic compounds.
- 361, 362, 363 ELEMENTARY PHYSICAL CHEMISTRY (3 ea)  
Prerequisites: one year of college chemistry, one year college physics, Math 122 or 220; each course prerequisite to the next. States of matter including gas laws, solid and liquid states and chemical thermodynamics; phase and chemical equilibria, surface chemistry, and colligative properties; introduction to quantum mechanics, chemical bonding, and spectroscopy.
- 364 ELEMENTARY PHYSICAL CHEMISTRY LAB (2)  
Prerequisite: Chem 361, 362; Chem 364 may be taken concurrently with Chem 362. Experiments designed to illustrate some concepts and techniques of elementary physical chemistry; formal report writing is also emphasized.
- 365 ELEMENTARY PHYSICAL CHEMISTRY LAB (2)  
Prerequisites: Chem 361, 362, 363; Chem 365 may be taken concurrently with Chem 363; Chem 364 is *not* prerequisite to Chem 365. Experiments designed to illustrate some concepts and techniques of elementary physical chemistry; formal report writing is also emphasized.
- 371 ELEMENTARY BIOCHEMISTRY (4)  
Prerequisite: Chem 251. Outlines of structures and metabolisms of carbohydrates, lipids, proteins, and nucleic acids; biochemical functions of vitamins, hormones, and some coenzymes; basic properties of enzymes. Laboratory portion of course illustrates material presented in lecture.
- 383 RADIOISOTOPES AND INSTRUMENTATION TECHNIQUES (2)  
Prerequisites: Chem 122-123, and Math 121. Basic use of radioisotopes and detection devices without rigorous mathematical treatment; for the student who might need such a tool in his career in science.
- 396a,b,c HONORS TUTORIAL (2-5 ea)

## Chemistry

### 397a THE CHEMISTRY AND PHYSIOLOGY OF FOREIGN COMPOUNDS (4)

Prerequisite: Chem 251 (or 351) and Biol 101. A detailed consideration of chemical and physiological effects of such currently encountered chemicals as pesticides, antibiotics, contraceptives, psychotomimetic compounds, food additives.

### 399 SEMINAR IN CHEMISTRY (1)

Prerequisites: 25 credits in chemistry and permission of instructor. Presentation and discussion of papers in chemistry.

### 400 PROJECT IN CHEMISTRY (1-3)

Prerequisite: permission of instructor. Individual projects under supervision.

### 434 INSTRUMENTAL ANALYSIS (4)

Prerequisite: Chem 333; Chem 463 prerequisite or concurrent. Theory and experimental techniques of optical, electrical, and other physical measurements applied to chemical analysis.

### 441 ADVANCED INORGANIC CHEMISTRY (4)

Prerequisite or concurrent: Chem 462. Chemical periodicity, bonding and structure of inorganic molecules, transition metal and coordination chemistry, and the chemistry of the non-metallic elements.

### 444 TECHNIQUES OF INORGANIC SYNTHESIS (3)

Prerequisite: Chem 333, 355. Chem 441 prerequisite or concurrent. Introduction to modern research techniques in inorganic chemistry using experimental procedures such as vacuum line synthesis, reactions in non-aqueous media, inert atmosphere manipulations and high pressure synthesis.

### 454 ADVANCED ORGANIC SYNTHESIS (3)

Prerequisites: Chem 353 and 354. The use of preparative organic reactions involving advanced techniques of synthesis.

### 455 SPECTROMETRIC IDENTIFICATION OF ORGANIC COMPOUNDS (3)

Prerequisites: Chem 355, 434. A study of infrared, ultraviolet, nuclear magnetic resonance, mass spectrometry, and optical rotatory dispersion. Application of these spectroscopic methods to the elucidation of organic structures.

### 461, 462, 463 PHYSICAL CHEMISTRY (4, 4, 3)

Prerequisites: one year of college physics, Math 222, and one year of general chemistry, or permission of instructor; each course prerequisite to the next. Atomic and molecular structure, states of matter, solutions, chemical thermodynamics and equilibria, chemical kinetics, and electro-chemistry.



### 464, 465 PHYSICAL CHEMISTRY LABORATORY (2 ea)

Prerequisites: Chem 461, 462, 463; Chem 464 and 465 may be taken concurrently with Chem 462 and 463 respectively. Experiments designed to illustrate some concepts and techniques of physical chemistry; also formal report writing.

### 471, 472 INTRODUCTORY BIOCHEMISTRY (3, 3)

Prerequisites: Chem 127, Chem 353 and Biol 101. Chem 471 prerequisite to Chem 472. Chemistry of carbohydrates, proteins, nucleic acids, and lipids; intermediary metabolism of these substances; reaction mechanisms leading to biosynthesis of various compounds of biological importance.

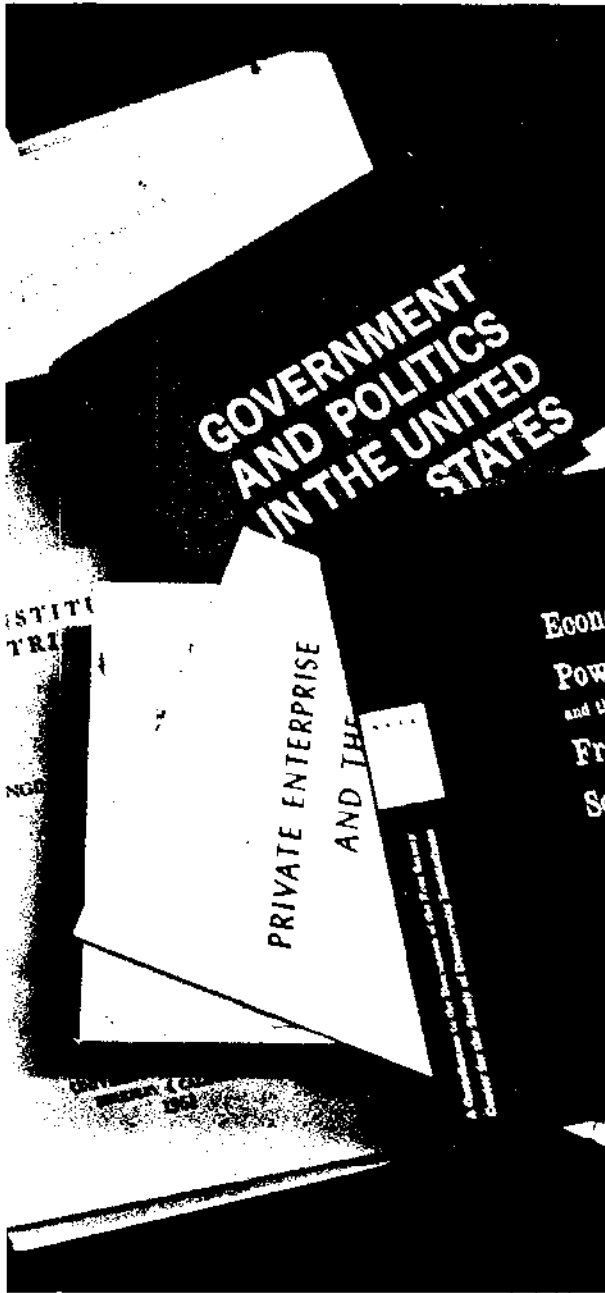
### 473 INTRODUCTORY BIOCHEMISTRY LABORATORY (2)

Prerequisites: Chem 128, Chem 354 and Chem 472 or concurrent. Analysis of carbohydrates, amino acids by means of current techniques; isolation and purification of enzymes and measurement of enzyme kinetics.

### 482 NUCLEAR CHEMISTRY (3)

Prerequisites: Chem 123 and Physics 233, or permission of instructor. Theoretical and applied nuclear and radio-chemistry.

- 483 NUCLEONICS LABORATORY (2)  
Prerequisite: Chem 482 or concurrent, or permission of instructor. Experimental techniques of nuclear chemistry.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 498 RESEARCH PROJECT IN CHEMISTRY (6: 3 in each of two successive quarters)  
Prerequisite: permission of instructor. Investigation of a problem in chemistry under departmental sponsorship and supervision. The project must extend over a minimum of two quarters with credit granted after the presentation of an oral report at a seminar and submission of an acceptable written report.
- 510 SPECIAL TOPICS (1-3)  
Prerequisite: permission of instructor. Specialized lectures on a conference basis for a particular area of interest.
- 511 ADVANCED LABORATORY METHODS (2)  
Prerequisite: Chem 463. Specialized laboratory on a conference basis for a particular area of interest.
- 531 SPECIAL TOPICS IN ANALYTICAL CHEMISTRY (3)  
Prerequisites: Chem 434 and 463. Special methods of separation; acid-base relationships in nonaqueous solvents; chromatography, coulometric and potentiometric methods; determination of organic functional groups, micro-analytical operations and methods. May be repeated for credit.
- 541 THEORETICAL INORGANIC CHEMISTRY (3)  
Prerequisites: Chem 441 and 463, or permission of instructor. Crystal field, ligand field, and molecular orbital approaches to the bonding in inorganic compounds; electronic and vibrational spectra, magnetic behavior, stereochemical ligand arrangement of inorganic complexes.
- 551 PHYSICAL ORGANIC CHEMISTRY (3)  
Prerequisites: Chem 353 and 463, or permission. Modern concepts of physical organic chemistry and their use in the elucidation of reaction mechanism, relation of structure to chemical reactivity.
- 552 CHEMISTRY IN NATURAL PRODUCTS (3)  
Prerequisites: Chem 353 and 461, or permission. Isolation, structure, synthesis, biosynthesis and photochemistry of selected classes of natural products.
- 553 ORGANIC REACTIONS (3)  
Prerequisites: Chem 353 and 461, or permission. Organic chemical reactions as applied to problems in organic synthesis.
- 561 ADVANCED PHYSICAL CHEMISTRY (3)  
Prerequisite: Chem 463 (equivalent or concurrent) and Math 222. Statistical treatment of thermodynamics and principles of chemical kinetics.
- 562 THEORETICAL CHEMISTRY (3)  
Prerequisites: Chem 463 and Math 222. Molecular orbital theory and its application in bonding of complex molecules.
- 563 MOLECULAR SPECTROSCOPY (3)  
Prerequisites: Chem 463 and Math 222. Principles of modern spectroscopy.
- 571 GENERAL BIOLOGICAL CHEMISTRY (3)  
Prerequisite: Biol 101 and Chem 353 and 363 or 463. The structures and functions of cells and tissues, chemical and physico-chemical basis of structures of amino acids, proteins, nucleic acids, carbohydrates and other biologically important compounds; general metabolism of carbohydrates, lipids, and proteins.
- 572 CHEMISTRY OF BIOLOGICAL PROCESSES (3)  
Prerequisite: Chem 571. Biosynthesis and chemical pathways of metabolism of amino acids, proteins, nucleic acids, lipids, vitamins, and porphyrins; mechanism of biochemical reactions.
- 573 ENZYME CHEMISTRY (3)  
Prerequisite: Chem 572. Preparation and measurement of activities of enzymes; mechanism of enzyme reactions; properties of individual enzymes and coenzymes.
- 574 PHYSICAL CHEMISTRY OF BIOMACROMOLECULES (3)  
Prerequisites: Chem 363 or 463 and 471 or 571, or permission of instructor. Quantitative methods applicable to the study of macromolecules, particularly in systems of biological interest.
- 581 ADVANCED NUCLEONICS (3)  
Prerequisites: Chem 482 or Physics 382. Advanced techniques of nuclear chemistry and nuclear physics; nuclear reaction, nuclear fission and involved multi-particle detection and scattering experiments.
- 595 SEMINAR (1)  
Prerequisite: Chem 463. Presentation of contemporary subjects in chemistry.
- 598 RESEARCH (3)  
Prerequisite: Chem 463. Research in chemistry under faculty direction terminating in a master's thesis.



## ECONOMICS AND BUSINESS

*Professors:* Mitchell (Chairman), Mayer, Mischaikow, Palmer.

*Associate Professors:* Aslanian, Haglund, Harder, Moore, Patton, Safavi.

*Assistant Professors:* Duff, Fang, Faulkner, McAllister, Ritchie, Teasley, Walter.

*Lecturers:* Frerichs, McCain, Tebrich, Thomson, Zoet.

### BACHELOR OF ARTS

#### *Majors*

Common core for all major concentrations:

- Economics 201, 202, 301, 302, 311, 381 (or History 360); BA 251, 252, 350, 375
- Supporting courses: Math 220 (in place of 151), 240; Computer Science 110; Geog 207. (Students electing the Economics Concentration may substitute Math 241 for Computer Science 110).

Students are recommended (but not required) to take Business Education 201 if seeking further work in Business English.

Select one of the following concentrations:

#### *Accounting* 110 credits

(Satisfies both a major and a minor)

- BA 271, 301, 302, 311, 322, 330, 351, 352
- BA 455, 457

Students who plan to make a professional career in public accounting should take additional accounting and business law courses under departmental advisement.

***Business Administration*** 110 credits  
(Satisfies both a major and a minor)

- BA 271, 301, 302, 311, 322, 330, 408, 495

Students electing this concentration may apply no more than 100 credits in economics and business administration nor transfer equivalents of such courses to the 192 credits required for a bachelor's degree.

***Economics*** 60-88 credits plus Supporting Courses)  
(Satisfies a major only)

- Economics 385, 403
- Not less than fifteen credits selected under advisement from Economics 325, 400, 402, 410, 412, 442, 461, 471, 475, 482, 485, 486, 491

Students recommended, but not required, to consider Soc/Anth 201 and Phil 113 as related to this major.

***Minor—Business Administration*** 25 credits

- BA 251, 252
- Additional courses under departmental advisement of which at least 10 credits must be at the upper division level. (Students who elect the Economics concentration above may not include more than 5 of the credits required for the Economics major to satisfy the requirements of the Business Administration minor.)

***Minor—Business Education*** 25 credits

- Courses in typing, shorthand, secretarial accounting, and secretarial practice selected under departmental advisement

***Minor—Economics*** 25 credits

- Economics 201, 202
- Additional courses selected under departmental advisement; at least 10 credits must be at upper division level

***Combined Major—Economics and Mathematics***  
100 credits

This concentration for students who wish considerable depth in both areas satisfies both a major and a minor for the B.A. degree.

- Economics 201, 202, 301, 302, 311
- BA 251, 252, 350
- Twelve upper division credits in economics and business administration selected under departmental advisement
- Economics 381 (or History 360)
- Math 121, 122, 201, 202, 222, 223, 241 (Math 301 may be substituted for 201, 202)
- Math 341 and 342; or 441, 442, 443
- Math 201 may be taken concurrently with Math 222; Math 202 may be taken concurrently with 223
- Computer Science 210
- Eight credits under advisement in 400 level mathematics courses

**BACHELOR OF ARTS IN EDUCATION**

***Major—Business Education*** Secondary 45 credits

*This major must be accompanied by the Economics minor which follows.*

- Economics 201, BA 101
- Business Education 116, 117 or 215, 120, 121, 122, 201, 223, 241 or 242, 319, 321, 322, 323
- Electives under departmental advisement

(Those with previous instruction in typing and/or shorthand are placed as high in the sequence as their backgrounds permit.)

***Minor—Economics*** 25 credits

*(To accompany above Business Education major)*

- Economics 202, BA 251, 252, 271, 408
- Five credits from Economics 311, 325, BA 322, 330, 350

## Economics and Business

### Minor—Business Education 25 credits

- Business Education 319, 322 and 323
- 16 credits in typing, shorthand, and secretarial practice as advised by department

### Minor—Economics 23-25 credits

(For other than Business Education majors)

- Economics 201, 202
- BA 101 or 251
- Ten credits in upper division courses selected under prior advisement of the department

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, an economics major who wishes to graduate "with honors" must complete Economics 491h; a reading knowledge of a foreign language or two years of mathematics; must attain a grade average of 3.5 in upper division economics courses; must pass a comprehensive examination in economics.

## GRADUATE STUDY

For concentrations in economics and business education leading to the Master of Arts or the Master of Education degrees, see the *Graduate Bulletin*.

## COURSES IN ECONOMICS

- 201 INTRODUCTION TO ECONOMICS (5)  
Organization and operation of the American economy; the basic problems of economics; the role of business, labor and government; money and the banking system; problems of inflation and deflation.
- 202 PRINCIPLES OF ECONOMICS (4)  
Prerequisites: Math 100 or 151, or equivalent. Theory of price and income distribution with particular application to the structure of American industry.
- 301 NATIONAL INCOME ANALYSIS (4)  
Prerequisites: Econ 201, 202, and 311; Math 220 recommended. Determinants of the level of income, employment and output in the economic system.
- 302 INTERMEDIATE ECONOMIC THEORY (4)  
Prerequisites: Econ 201, 202; Math 220. The theory of price under conditions of competition and monopolistic competition; relation of prices and costs, and functional distribution of income.
- 311 MONEY AND BANKING (5)  
Prerequisites: Econ 201, 202. Nature and functions of money, credit, banking, and relationship of money and bank deposits to the economy.
- 325 ECONOMICS OF LABOR (5)  
Prerequisite: Econ 201, 202. The economics of the labor market; development and functioning of labor unions and collective bargaining.
- 338 ECONOMIC ANALYSIS AND INDUSTRIAL MANAGEMENT (5)  
Prerequisite: Math 100 or equivalent. Introduction to structure of markets, production and price theory; application to organization management, and operation of business enterprise. Not applicable to a major.
- 381 AMERICAN ECONOMIC HISTORY (5)  
Prerequisites: Econ 201, 202. American economic development from seventeenth century to present; emphasis on resource endowment and evolving social and economic institutions; role of government in this development.
- 385 THE RISE OF CAPITALISM (4)  
Prerequisite: Econ 202. Evolution of economic institutions in Europe 800-1800; growth of capitalistic market societies.
- 388 DISCRIMINATION AND RESOURCE UTILIZATION (4)  
Prerequisites: Econ 201 or Gen Ed 200, or permission of instructor. The effects of racial and other forms of discrimination on resource utilization; departures from market norms; policies to alleviate consequences of discrimination.
- 396a,b,c HONORS TUTORIAL (2-5 ea)
- 400 SPECIAL PROBLEMS IN ECONOMICS (1-5)  
Prerequisites: 20 credits in economics and business administration and prior consultation with instructor.

- 402 WELFARE ECONOMICS (4)  
Prerequisite: Econ 302. Theories of individual and social welfare and criteria of an increase or decrease in social welfare; implications for social welfare of competition, monopoly, the allocation of resources and the distribution of wealth, and the welfare implications of economic growth.
- 403 THE HISTORY OF ECONOMIC THOUGHT (5)  
Prerequisite: Econ 202 or senior standing and permission of instructor. Development of economic thought with emphasis on period following Adam Smith.
- 410 PUBLIC FINANCE AND TAXATION (5)  
Prerequisite: Econ 202 or permission of instructor. Principles of taxation and problems of tax administration; effects upon employment, income, prices, and structure of the economy.
- 412 BUSINESS FLUCTUATIONS AND FORECASTING (4)  
Prerequisites: Econ 301 and Math 240, or permission of instructor. Characteristics and major explanations of the prosperity-depression cycle in business, with major emphasis on forecasting.
- 415 PROBLEMS AND PRACTICES IN STATE AND FEDERAL FINANCE (3)  
Governmental expenditures, budgets, taxation, and borrowing; local, state, and federal. Summer only.
- 417 SPECIAL INTEREST SEMINARS IN ECONOMICS  
417a Labor Relations and the Law (3)  
Prerequisite: Econ 325  
417b Comparative Industrialization: 19th Century (4)  
Prerequisite: Econ 385  
417c Mathematical Economics (4)
- 442 GOVERNMENT AND BUSINESS (5)  
Prerequisites: Econ 202 or permission of instructor. Public policy and business enterprise.
- 445 CURRENT TRENDS IN ECONOMICS  
(May be taken for credit only once in two years.)  
445a Trends in Economic Education (3)  
Prerequisite: teaching experience in social studies.
- 461 INTERNATIONAL ECONOMICS (5)  
Prerequisite: Econ 202. International trade theories; foreign economic policies; the relationship between international trade and domestic activity.
- 471 MATHEMATICAL METHODS IN ECONOMICS (4)  
Prerequisite: Math 122 or 220. Applications of calculus and linear algebra to economics.
- 475 ECONOMETRICS (4)  
Prerequisites: Econ 375 and 471, or Math 342. Probability and econometrics including discrete and continuous distributions, estimators and their properties, correlation, analysis of variance, regression analysis.
- 482 REGIONAL ECONOMICS (4)  
Prerequisites: Econ 201 and Geog 207, or permission of instructor. Problems, resource endowment, and principal policy issues related to economic growth of a region.
- 485 COMPARATIVE ECONOMIC SYSTEMS (4)  
Prerequisite: Econ 201 or permission of instructor. Economic systems of leading nations of the world.
- 486 ECONOMIC DEVELOPMENT (4)  
Prerequisites: Econ 201 and 202 or permission of instructor. Conditions necessary for and progress of economic development in underdeveloped countries.
- 491h HONORS SEMINAR (3)  
496a,b,c HONORS TUTORIAL (2-5 ea)  
497a URBAN ECONOMICS (3)  
Problems of the ghetto, slums, urban renewal, municipal finance, urban government, crime, pollution, and mass transportation, as they actually exist. A study of the problems within the framework of economic theory, and examination of feasible solutions.  
497c THE ECONOMY OF THE NORTHERN PUGET SOUND – PROBLEMS AND PROSPECTS (5)  
Prerequisite: permission of instructor. A general analysis of past, present and future factors determining the economic development of the four counties area—alternative goals and policies for the future.
- 500 READINGS IN ECONOMICS (2-4)  
Prerequisite: permission of instructor.
- 501 SEMINAR IN MACRO-ECONOMIC THEORY (4)  
Prerequisite: Econ 301 or permission of instructor. Advanced macro-economic theory with emphasis on causes of economic instability and long-term changes.
- 502 SEMINAR IN ADVANCED ECONOMIC ANALYSIS (4)  
Prerequisite: Econ 302 or permission of instructor. Detailed analysis of the market's role in determining resource allocation, production, prices and incomes; general equilibrium theories and dynamics.

## Economics and Business

- 503 SEMINAR IN HISTORY OF ECONOMIC THOUGHT (4)  
Prerequisite: Econ 403 or permission of instructor. Critical method in the study of economic doctrines; classical political economy; orthodox tradition in the nineteenth century; its principal critics.
- 505 SEMINAR IN ECONOMIC HISTORY (4)  
Prerequisite: permission of instructor. Critical historical study of major economic institutions, their interdependence and contribution to modern society.
- 511 SEMINAR IN FINANCIAL INSTITUTIONS AND MONEY (4)  
Prerequisites: Econ 301, 302 or permission of instructor. The monetary and financial system; relation of economic theory to monetary policy and economic activity.
- 518 SEMINAR IN THE THEORIES OF BUSINESS BEHAVIOR (4)  
Prerequisite: Econ 302 or permission of instructor. Evaluation of economic and other theories of the firm with primary emphasis on decision-making processes and responses of businessmen to changes in the environment.
- 525 SEMINAR IN LABOR ECONOMICS (4)  
Prerequisite: Econ 325 or permission of instructor. Selected topics in the economics of labor markets and the process of collective bargaining.
- 553 SEMINAR IN ADMINISTRATIVE CONTROLS (4)  
Prerequisite: BA 350 or 351 and a working knowledge of application of mathematics to business problems, or permission of instructor. Uses of accounting, statistics, and cybernetics by management in the exercise of planning and controlling functions.
- 561 SEMINAR IN INTERNATIONAL TRADE (4)  
Prerequisite: Econ 461. Pure theory of international trade and its relevance to the modern world.
- 575 SEMINAR IN QUANTITATIVE ANALYSIS (4)  
Prerequisites: BA 375 and permission of instructor. Nature, meaning, and application of quantitative techniques used in economic and business research.
- 582 SEMINAR IN REGIONAL ECONOMICS (4)  
Prerequisite: Econ 482 or permission of instructor. Case studies in regional social accounting, growth and stability, intra- and inter-regional relations; concepts and criteria of regional planning with emphasis on the Pacific Northwest.
- 599 THESIS (4-9)

## COURSES IN BUSINESS ADMINISTRATION

- 101 INTRODUCTION TO BUSINESS (5)  
Elementary business organization, various types of ownership, location of business plants, labor problems, marketing problems, long and short term financing, and managerial controls.
- 251 PRINCIPLES OF ACCOUNTING (4)  
Prerequisite: passing score on mathematics entrance test; not open to first or second quarter freshmen. Introduction to the theory of accounting, including book-keeping and financial statements.
- 252 PRINCIPLES OF ACCOUNTING (4)  
Prerequisite: BA 251. Emphasis on depreciation, the voucher system, partnership and corporation accounting.
- 271 LAW AND THE BUSINESS ENVIRONMENT (5)  
Historical development of legal institutions; impact of law on individual and business decisions; law of contracts underlying business agreements.
- Business Administration majors should have completed BA 252, Econ 201, 202, Math 220, 240, CS 110, or be completing them by concurrent enrollment before enrolling in upper division Business Administration courses, with the exception of BA 350.*
- 301 INTRODUCTION TO MANAGEMENT (4)  
Analysis of the process of management: planning, organization, leadership, control, communication, and decision-making. A study of concepts of power, authority and influence. An examination of the role of philosophy and values in organizations.
- 302 OPERATIONS MANAGEMENT (4)  
Prerequisites: BA 301, 350, 375, or permission of instructor. Fundamentals of operations management, including tools for analysis, planning and controlling operating systems.
- 311 CORPORATE FINANCE (5)  
Prerequisite: BA 301, 350, 375 or permission of instructor. Structure and operation of financial management; problems of internal financial analysis, forecasting, planning and control, capital supply and budgeting; dividend policy; mergers, acquisitions.
- 322 PERSONNEL MANAGEMENT (4)  
Prerequisite: BA 301. The recruitment, selection, utilization, and development of human resources, with special emphasis on union-management relations and relevant behavioral science research.



- 330 PRINCIPLES OF MARKETING (5)  
Prerequisite: BA 301, or permission of instructor. Institutions, functions, problems and policies in the distribution of industrial and consumer goods; pricing, costs, and governmental regulations.
- 331 ADVERTISING (4)  
Prerequisite: BA 330 or permission of instructor. Promotional objectives and strategies of the firm; organization of advertising function; media selection and evaluation; psychological aspects; new developments such as use of computer and mathematical models.
- 332 SALES MANAGEMENT (4)  
Prerequisite: BA 330. Nature of personal selling and retailing; emphasis on management of sales personnel and the merchandising effort.
- 350 ACCOUNTING ANALYSIS AND CONTROL (5)  
Prerequisite: BA 252 or permission of instructor. Theory and use of accounting data in management control and the decision-making process; the flow of funds statement; analysis of accounting statements as a guide to management and investors; survey of cost accounting and budgeting.
- 351 COST ACCOUNTING (5)  
Prerequisite: BA 350. Historical factory job and process cost systems, distribution costs systems, fixed and flexible budgeting and other controls over business operations available from accounting records.
- 352 INTERMEDIATE ACCOUNTING (5)  
Prerequisite: BA 350. Accounting theory and its application to financial statements, inventories, depreciation, and funds.
- 354 INCOME TAX ACCOUNTING I (4)  
Prerequisite: BA 251 or permission of instructor. General income tax requirements; special problems relating to individual tax returns.
- 356 MUNICIPAL AND GOVERNMENTAL ACCOUNTING (3)  
Prerequisite: BA 251 or permission of instructor. Fund and budgetary accounting as applied to municipalities, governmental units, and non-profit organizations.
- 359 AUTOMATIC DATA PROCESSING IN ACCOUNTING (3)  
Prerequisites: BA 350 or equivalent and familiarity with electronic data processing systems, or permission of instructor. Problems in adaptation of accounting principles to automatic data processing systems.
- 371 LAW OF COMMERCIAL TRANSACTIONS (5)  
Prerequisite: BA 271. Legal principles underlying the law of agency, negotiable instruments, sales, partnerships, and corporations.
- 375 QUANTITATIVE METHODS I (4)  
Prerequisites: Math 220, 240, CS 110. Statistical, linear, and other quantitative methods used in research, analysis, and decision making: critical path, optimal path, analysis of variance, queuing, regressions, correlation, forecasting, time series, production, and inventory decisions.
- 376 QUANTITATIVE METHODS II (3)  
Prerequisites: Math 220, 240, CS 110. (Note: BA 375 not required for BA 376.) Statistical, linear, and other quantitative methods used in research, analysis, and decision making: inference-estimation and hypothesis testing, linear programming, dual, non-linear and dynamic programming, index numbers, and Bayesian decision theory.
- 400 SPECIAL PROBLEMS IN BUSINESS ADMINISTRATION (1-5)  
Prerequisites: 20 credits in business administration and economics and prior consultation with instructor.
- 401 ORGANIZATION BEHAVIOR (3)  
Prerequisite: BA 301 or permission of instructor. Analysis of individual and group behavior in the organizational setting with special emphasis on assessing and improving organizational effectiveness.
- 402 SEMINAR IN ORGANIZATION THEORY (3)  
Prerequisite: BA 301 or permission of instructor. A seminar devoted to the analysis of current research: measuring organizational effectiveness, planning, leadership, patterns, and current problems.
- 403 MANAGEMENT INFORMATION SYSTEMS (3)  
Prerequisites: BA 302, CS 110, or permission of instructor. Analysis of the decision process and the information requirements of decision-makers. Surveys the application of computers to contemporary business, education, and government information systems.
- 407 BUSINESS LOGISTICS (4)  
Prerequisites: BA 302, 330. Study of the total flow of materials through an organization, from acquisition of raw materials to delivery of a finished product to the ultimate user.
- 408 THE ROLE OF BUSINESS IN AMERICAN SOCIETY (3)  
Development of American capitalism and its legal, philosophical, and ethical foundations.

## *Economics and Business*

- 412 INVESTMENT (4)  
Prerequisite: BA 311. Security investment, analysis and forecasting of security markets; industry studies, portfolio construction, security selection; corporate government and revenue bonds; efficient portfolio management for different classes of institutions and individuals.
- 414 FINANCIAL MARKETS (4)  
Prerequisite: BA 311. Analysis of the structure and functions of the money and capital markets; the saving investment process and financial intermediaries; supply and demand for loanable funds and the level and structure of interest rates.
- 417 SPECIAL INTEREST SEMINARS IN BUSINESS ADMINISTRATION  
417a Marketing Management (4)  
Prerequisite: BA 330.  
417b Financial Management (4)  
Prerequisite: BA 311.
- 421 PROBLEMS IN PERSONNEL ADMINISTRATION (3)  
Not open to students who have taken BA 322. Problems of wage and salary administration, employee rating, and employee selection. Summer only.
- 425 INDUSTRIAL RELATIONS ADMINISTRATION (4)  
Prerequisite: BA 322 or permission of instructor. Cases, lectures, and collective bargaining simulation are used to develop administrative skill in dealing with union-management relations. Subjects covered are: nature of unions, institutional forces conditioning collective bargaining practices, and administrative practices dealing with unions.
- 426 CURRENT ISSUES IN PERSONNEL AND INDUSTRIAL RELATIONS (3)  
Prerequisite: BA 322 or permission of instructor. Seminar dealing with the analysis of current problems in policy and practice used in personnel and industrial relations administration.
- 430 MARKETING RESEARCH (5)  
Prerequisites: BA 330, 375. Marketing problems posed by executive decision; techniques applicable to product selection, advertising and motivation research; research methodology; research design and decision models in marketing; individual research projects.
- 451 ADVANCED COST ACCOUNTING AND CONTROLLERSHIP (4)  
Prerequisite: BA 351. Critical examination of controls available to management from cost and other accounting records.
- 453 SCHOOL AND FINANCIAL ACCOUNTING CONCEPTS (3)  
A non-technical development of concepts that underlie school and financial accounting, an evaluation of inherent limitations, and interpretation of accounting statements. Not open to students with a major in economics or business.
- 454 INCOME TAX ACCOUNTING II (4)  
Prerequisites: BA 252, 354. Special problems of partnerships, corporations, and trusts; introduction to tax research.
- 455 ADVANCED ACCOUNTING (5)  
Prerequisite: BA 352. Application of accounting theory to partnerships, branch accounting, installment sales, and other problems.
- 456 CONSOLIDATIONS AND FIDUCIARY ACCOUNTING (5)  
Prerequisite: BA 455. Special problems of consolidated corporations and fiduciaries.
- 457 AUDITING (5)  
Prerequisite: BA 455, or permission of instructor. Generally accepted auditing standards and principles; applications in public and internal auditing.
- 459 ADVANCED ACCOUNTING THEORY (3)  
Prerequisite: BA 350. Theory of accounting related to income measurement, assets, and equities; uses and limitations of general purpose financial statements.
- 495 BUSINESS POLICY (4)  
(To be taken in student's final undergraduate quarter.) Case study of policy-making and administration from a general management point of view. Emphasis on problem analysis, the decision-making process, administration and control, and development of policies and objectives. The course is intended to integrate and build upon work in the core curriculum.

## COURSES IN BUSINESS EDUCATION

- 116 INTERMEDIATE TYPEWRITING (2)  
Prerequisite: one year of high school typewriting or equivalent.

- 117 **ADVANCED TYPEWRITING (2)**  
Prerequisite: Bus Ed 116 or equivalent, or advanced high school study in typewriting. Advanced work on rough drafts, tabulation, and business communications.
- 120 **BEGINNING SHORTHAND (3)**  
Fundamentals of Gregg shorthand including development of skill in reading and writing from printed shorthand.
- 121 **INTERMEDIATE SHORTHAND (3)**  
Prerequisite: Bus Ed 120 or equivalent. Continued development of skill in reading and writing more advanced forms of shorthand.
- 122 **ADVANCED SHORTHAND I (3)**  
Prerequisite: Bus Ed 121 or equivalent. Principles of Gregg shorthand with intensive dictation on new matter; dictation and transcription of business correspondence.
- 150 **ACCOUNTING FOR SECRETARIES (3)**  
Theory and practice of bookkeeping and accounting, with emphasis on both cash and accrual systems.
- 201 **BUSINESS CORRESPONDENCE (3)**  
Prerequisite: English 101 or equivalent. Development of skill in the use of correct English for business purposes.
- 215 **BUSINESS TYPEWRITING (2)**  
Prerequisite: Bus Ed 117 or equivalent. Advanced course for development of proficiency in speed and control; business forms.
- 222 **ADVANCED SHORTHAND II (3)**  
Prerequisite: Bus Ed 122 or equivalent, or two years of high school shorthand. Intensive dictation and transcription practice on business correspondence; development of a comprehensive business vocabulary.
- 223 **SHORTHAND TRANSCRIPTION (3)**  
Prerequisite: Bus Ed 122 or equivalent, or two years of high school shorthand. Development of habits, attitudes, and transcription skills, with emphasis on mailable transcripts.
- 224 **SECRETARIAL PRACTICE (3)**  
Development of transcription skills, office techniques, and the duties and problems of the secretary.
- 241 **BUSINESS MACHINES I (3)**  
Prerequisite: one year high school typewriting or equivalent. Operation of electronic, rotary and printing calculators, adding machines, transcribing and recording machines, and electric typewriters.
- 242 **BUSINESS MACHINES II (3)**  
Prerequisite: Bus Ed 241 or equivalent. Advanced training in business application problems using electronic, rotary and printing calculators; further training in the use of transcribing and recording machines; introduction to data processing.
- 319 **BUSINESS EDUCATION IN THE SECONDARY SCHOOL (3)**  
Curriculum planning with consideration of philosophy, scope, and objectives.
- 321 **TEACHING BOOKKEEPING AND BASIC BUSINESS SUBJECTS (3)**  
Objectives, materials, and methods of presentation.
- 322 **METHODS OF TEACHING TYPEWRITING (3)**  
Use of newest instructional aids and equipment.
- 323 **METHODS OF TEACHING SHORTHAND AND TRANSCRIPTION (3)**  
Lesson planning, grading, demonstrations, and dictation techniques.
- 400 **DIRECTED STUDY IN BUSINESS EDUCATION (2-3)**  
Prerequisites: senior standing and permission of instructor. Individual instruction.
- 445 **CURRENT TRENDS IN BUSINESS EDUCATION**  
445a Recent Developments in Business Education—Shorthand (1)
- 471 **CURRENT TRENDS IN THE TEACHING OF TYPEWRITING (3)**  
Trends in methods, materials, audio-visual devices. Summer only.
- 472 **IMPROVEMENT OF INSTRUCTION IN THE TEACHING OF BOOKKEEPING (3)**  
Prerequisite: permission of department. Critical evaluation of content materials, methods, and practices used in teaching bookkeeping. Summer only.
- 473 **ECONOMIC AND CONSUMER EDUCATION IN THE SCHOOLS (3)**  
Organization and integration of economic and consumer education courses in school programs.
- 474 **OFFICE AUTOMATION FOR BUSINESS TEACHERS (3)**  
Prerequisites: business teaching experience. Data processing instruction in the high school business curriculum; unit record and electronic data processing in the modern office; materials, equipment, and terminology.

501 SPECIAL PROJECTS IN BUSINESS EDUCATION (2-3)  
Supervised planning and development of practical creative projects in business education.

502 IMPROVEMENT OF INSTRUCTION IN SECRETARIAL STUDIES (3)  
Prerequisite: permission of department. Modern methods of teaching typing, shorthand, transcription, and office practice, with special concern for the psychology of skill building and teaching techniques. Summer only.

503 PROBLEMS AND ISSUES IN BUSINESS EDUCATION (3)  
Prerequisite: graduate standing and teaching experience. Trends in business programs of secondary schools. Summer only.



## EDUCATION AND LIBRARY SCIENCE

### PREPARATION FOR TEACHING

Western Washington State College has as one of its primary functions the preparation of teachers, administrators, and other specialists for the schools of the State of Washington and other states. Building upon the foundation of broad general education, students add concentrations in an academic discipline and professional studies dealing with the teaching-learning process. Many departments of the College cooperate in teacher preparation. Detailed specifications for major and minor concentrations are found in the departmental sections of the catalog.

The Department of Education is charged with the responsibility for developing and offering professional studies and for coordinating the elementary major and minor concentrations, details of which are outlined below.

### REQUIREMENTS FOR CERTIFICATION

*Provisional Certificate (and the B.A. in Education Degree)*

The B.A. in Education program at Western Washington State College is designed to meet Washington State requirements for the Provisional Teaching Certificate for

all levels of the public schools. Requirements may be classified as

- (1) General education (same as for B.A. degree)
- (2) Professional sequence
- (3) Major-Minor concentrations

The Provisional Certificate is valid for three years from the date of issuance, renewable for an additional three years after completing a portion of the fifth year. For the first year, it is restricted to teaching at the level and/or subject area for which the teacher is recommended by virtue of his preparation.

Candidates for the Provisional Certificate must be citizens of the United States. Non-citizens may complete the requirements for the Bachelor of Arts in Education degree without a Washington teaching certificate, or those who are permanent residents intending to become citizens may obtain special permits from the Office of the State Superintendent of Public Instruction.

New guidelines for teacher education are being considered as this catalog goes to press. They are scheduled for action by the State Board of Education in the summer of 1971. These guidelines provide for emphasis on competencies and field experiences and will involve school districts and professional associations as partners with colleges in developing and offering programs of teacher education. However, present programs (as outlined below) will continue in operation as one means of obtaining teacher certification.

## ADMISSION TO TEACHER EDUCATION

The College shares with the profession as a whole the important responsibility for the selection of potential teachers. Admission to the College does not automatically admit the student to the teacher education program. The student is expected to make a systematic

study of the role of a teacher and to undertake self-analysis in terms of the demands and opportunities of a teaching career. Those who decide upon such a career then make formal application for admission to the professional program, normally when enrolled in the first professional course.

To be eligible for admission the student must

- a. *Demonstrate English competence.*  
This may be done by (1) presenting a grade of "B" in the required general education course in composition; transfers with several composition courses are expected to have a preponderance of "B's" if this option is to apply; (2) passing an English competency examination; (3) completing a program of self instruction under the direction of the Writing Workshop.
- b. *Demonstrate speech competence.*  
Passing Speech 101 or 301 or an equivalent approved course is deemed evidence of speech competence. Any who do not elect a speech course in the general education communications option will file a statement of competence from the Speech Department. Students who manifest speech problems may be referred to the Speech Clinic for remedial work.
- c. Pass an introductory professional course with a satisfactory grade (e.g. Ed 310, 390, or equivalent transfer course).
- d. *Present and maintain a grade average of not less than 2.2* in all work at this College. If a student has not achieved this average when he applies, his application will be deferred. If after being admitted to the program, the student's grades fall below the minimum 2.2 cumulative average, he is automatically suspended from the program. Failure to restore the cumulative average within two quarters disqualifies the student from further participation in the program of teacher education at this College.

The admissions regulations are administered by the Office of Teacher Education Advisement.

## Education

### PROFESSIONAL EDUCATION SEQUENCES— 35-36 credits

In the interests of meeting individual needs and goals, options are offered in professional courses. Students will elect (a) or (b) in meeting the requirements for introductory and foundations courses:

(a)

Ed 310 The Teacher and the Social Order  
Ed 411 Foundations of Education

(Ed 441, 479, or a similar course prescribed for the fifth year)

(b)

Ed 390 Professional Practicum and Seminar  
(Ed 131, or Ed 109 [Fairhaven students], may be substituted for Ed 390)  
Ed 310 The Teacher and the Social Order

(Ed 411 or 512 or similar course prescribed for the fifth year)

In addition to (a) and (b) above, each candidate for the B.A. in Education and Provisional Certificate will complete the following:

Ed 385 Foundations of Reading Instruction  
or  
Ed 420 Instruction in Secondary Schools  
(Ed 385 is required for elementary teaching)

Psych 351 Principles of Human Learning  
Psych 352 Human Development and Personality  
Psych 371 Evaluation in the Public School

Supervised Teaching, 16 credits

Candidates for Washington certificates recommended for secondary teaching in any social studies field or for general elementary teaching must complete History 391 Washington State History and Government

### ALTERNATE PROFESSIONAL SEQUENCE

Consistent with the new state certification guidelines (scheduled for adoption in 1971), this alternative field-centered program is available to a limited number of students. It may be taken instead of the sequence outlined above. The program calls for full-time\* study in one of the residence centers (e.g., Seattle) for two quarters, and is intended for the late junior and/or senior year. It is recommended that students complete as much as possible of their major and minor requirements before enrolling for this two quarter sequence.

Application for enrollment in the program should be made well in advance at the Office of Student Teaching, Miller Hall 206.

Entry Course—Education 310, The Teacher and the Social Order, 3 credits (to be taken prior to the laboratory quarter)

Psychology 352, Human Development and Personality, 5 credits. (If not taken prior to Ed 491-492, may be taken by Independent Study during Laboratory Program or in a subsequent quarter.)

Education/Psychology 491-492—The Laboratory Program, 12 credits. Additional credit may be earned concurrently by individually planned independent study.

Education 494 or 495, Supervised Teaching, 16 credits.

Washington History as required; see other sequence.

*\*Plans are also being considered for possible offering of the Laboratory Program in 6 credit portions over two subsequent quarters.*

## MAJOR-MINOR CONCENTRATIONS FOR TEACHER EDUCATION

### (Bachelor of Arts in Education)

Approved concentrations must be completed in fields specifically related to the curriculum of the public schools of the state. A choice is to be made among programs leading to recommendation for one or more of the three levels: elementary, junior high (middle school), senior high school. The following concentrations are those available in the College of Arts and Sciences; see also chapters 5, 6 and 7 for other possibilities.

#### *Elementary Teachers*

Academic Majors 45-50 credits

|                  |                        |
|------------------|------------------------|
| Art              | Mathematics            |
| Earth Science    | Music                  |
| English          | Physical Education     |
| Foreign Language | Psychology             |
| General Science  | Sociology/Anthropology |
| Geography        | Social Studies         |
| History          | Speech, General        |
| Home Economics   | Speech Therapy         |

See departmental listings for detailed specifications.

#### *Secondary Teachers*

(See departmental listings for specifications.)

*Majors 45-50 credits in one of the following fields:*

|                        |                    |
|------------------------|--------------------|
| Art                    | Home Economics     |
| Business Education (S) | Industrial Arts    |
| Chemistry (S)          | Mathematics        |
| Earth Science          | Music Specialist   |
| English                | Physical Education |
| Foreign Language       | Physical Science   |
| General Science (J)    | Physics (S)        |
| Geography              | Speech             |
| History                |                    |

#### *Elementary Teaching Major, Minor*

Elementary teachers may elect one of two options:

- One of the academic majors above coupled with the Elementary Teaching Minor.
- The Elementary Education Major and a minor in one of the fields above, to be extended in the fifth year.

Variations of the Elementary Major and Minor are available for teachers wishing to prepare for work in *special education*, and an option in the minor is also available for specialists in *early childhood*.

[Courses followed by (S) are applicable to senior high school only; courses followed by (J) are applicable to junior high school (middle school) only. Others are acceptable at both levels.]

Additional supporting courses are required for some majors.

Concentrations encompassing both a major and a minor are offered in art, general science, home economics, music, physical education, technology (industrial arts); combined major concentrations are also offered in Chemistry-Physics, Chemistry-Mathematics, English-Speech, History-Social Studies, Geography-Social Studies, and Physics-Mathematics.

For teachers in the field of biology, a five-year program is offered. The student earns a degree in Arts and Sciences and then takes his professional education as a fifth year of study. To the extent that he has elective time, he may begin professional study prior to receiving his B.A. degree.

## Education

### Minors

25 credits

In addition to the fields listed above (except Earth Science, General Science, Social Studies) minors are offered in:

|                    |                        |
|--------------------|------------------------|
| Biology            | Journalism             |
| Classical Studies  | Linguistics            |
| East Asian Studies | Philosophy             |
| Economics          | Political Science      |
| Geology            | Psychology             |
| Health Science     | Sociology/Anthropology |
| Library Science    |                        |

### Elementary Education

#### Major 45 credits

##### Required Core:

- Language Arts: Ed 485 or 486; Eng 495 or Ed 424; Lib 305
- Science-Math-Social Sciences: Math 281, 481; Soc Studies 425; Sci Ed 390-391 (primary level) or two from Biol 383, Geol 384, Phy Sci 382 (intermediate level)
- Expressive Arts: Art 380, Music 350, PE 306
- 8 credits selected under advisement from one of the following:
  - (a) Language Arts: Ed 484, 486, 488; Eng 261, 262, 263, 380, 390, 406; Lib Sci 306, 309; Linguistics 201; Speech 319, 330, 354, 355, 373, 395
  - (b) Science-Math-Social Sciences: Comp Sci 270; Econ 201, Ed 360, 426, 484; Health Ed 350, 450; Home Econ 120, 224, 250, 320, 424; Math 220, 381; Pol Sci 101; Psych 455, 471, 481; Sci Ed 430, 480; Soc St Ed 426; Speech 350
  - (c) Expressive Arts: Art 381, 382; Lib Sci 309; Music 451, 452; Phys Ed 311, 326, 403; Speech 203, 319, 330, 331, 385; Tech 310

To accompany the above major, the student will elect a teacher education minor in a field corresponding to his concentration of electives (a,b, or c above). The minor is to be selected from art, earth science, English, foreign language, general science, geography, history, home economics, mathematics, music, physical education, psychology, sociology/anthropology, social studies, speech. Courses common to the major and the minor may not be counted in both.

During the fifth year the student will extend this subject matter area.

### Special Education Major

Elementary teachers interested in recommendation for Special Education will complete the following variation of the Elementary Major along with an appropriate academic minor from the list specified above.

- 30 credits under advisement from the *required core* in the elementary major
- Ed 360, 461, 462, 465
- Ed 361 or 400 (special project)

Normally, student teaching will be done in an elementary general classroom as well as in special education.

### Advisement

Elementary teachers taking either the major or minor will be advised by members of the Elementary Area faculty of the Department of Education. Students should report to the Office of Teacher Education Advisement, 204 Miller Hall, for assignment. Selection of the academic minor will be made with the assistance of the student's elementary adviser; advisement within the minor is the responsibility of the appropriate department.



*Elementary Teaching Minor**Basic Core 23 credits*

- Education 485
- English 495
- Mathematics 281
- Mathematics 481
- Social Studies Ed 425
- Science Education 390, 391 (primary) or two courses for intermediate teachers from
  - Biology 383
  - Geology 384
  - Physical Science 382

*Additional Elementary Courses 12-14 credits*

To complete the minor, the student will elect one of the following options according to teaching interest, in addition to the basic core:

*(a) General Classroom.*

Under advisement select from:

- Art 380
- Biology 383
- Education 360, 426, 431, 439
- English 380, 390, 406
- Health Ed 350, 450
- Library Sci 305, 309
- Linguistics 201
- Music 350, 451
- PE 306, 403
- Phys Science 382
- Speech 319, 330, 355, 373
- Technology 350

*(b) Early Childhood.*

Ed 431 and 432 or 433

6-8 credits under advisement from:

- Art 380; Ed 331; Home Econ 120, 424; Lib Sci 305, 309; PE 306, 311, 326; Soc/Anth 481; Speech 331, 354, 355, 385; Tech 350

*(c) Special Education.*

Ed 360, 361 or 461, 462, 465

Additional courses under advisement

Normally student teaching will be done in elementary general classroom as well as in special education.

*Fifth Year of Study for Teachers*

Within six years after issuance of the Provisional Certificate, the Washington State teacher must complete an approved fifth year of study leading to the Standard Certificate. (The Provisional Certificate is valid for three years from the date of issuance, and may be renewed for a second three-year period upon completion of 12 quarter hours of the fifth year and a year of successful teaching experience.)

*The Standard Certificate*, issued after completion of the fifth year of study and at least two years of successful teaching experience, is valid for teaching at any level in the public schools of Washington on a continuing basis, and for a period of five years thereafter.

The fifth year of study may be satisfied in combination with one of the programs leading to a master's degree or by an approved study program without an advanced degree as its goal. Under either program the student files a fifth year plan with the Office of Teacher Education Advisement.

The plan for each student is developed with the assistance of local school officials and college advisers and is to be approved *before courses are taken*.

State regulations for the standard certificate include the following general specifications:

Total credit: 45 quarter hours of approved study in addition to the bachelor's degree.

Extension study is limited to 12 credits.

At least one-half of the credits must be in upper division or graduate courses.

At least one-half of the credits must be earned in residence in the recommending or an approved out-of-state institution; courses taken in the latter require prior approval of the pre-service (undergraduate) institution.

A limited amount of approved fifth year study may be completed prior to a year of teaching experience, subject to the approval of the recommending institution.

Evidence must be presented of two years teaching experience which, judged as a whole, are successful.

## Education

### Fifth Year Program For Learning Resources Specialists

The following program is recommended for teachers preparing to become specialists in learning resources:

- A. *Common Core*  
Lib Sci 401, The Library in the School  
Ed 450, Audiovisual Communications: Basic  
Ed 451, Audiovisual Communications: Advanced  
Ed 541b, Public School Organization and Administration  
Tech 240, Visual Communication and Graphic Arts
- B. *One concentration* from the following: (Some expertise in the area selected is prerequisite)
1. *Library Science*: 305, 307, 402, 403, 404; Ed 422, 425
  2. *Administration*: Ed 422, 425, 475, 543a, 545a, 546, 550
  3. *Graphics*: Tech 419, 440, 449, 469, 540, 544

An internship in the area selected will also be arranged.

## DEPARTMENT OF EDUCATION FACULTY

*Professors*: Hite (Chairman), Beldin, Billings, Bond, Darrow, Ellis, Ford, Higbee, Kelly, Kuder, McCracken, McGaw, Ross, Skeen, Starbird, N. Thompson, R. Thompson, Watrous.

*Associate Professors*: Blackwell, Brown, Carroll, Covington, Fennimore, Feringer, Ferris, Friet, Gilbert, Grover, Hovenier, Karason, Lamb, Latta, Margaritis, McDonald, McElroy, McInnis, Nickelson, Savitch, Van Wingerden, Wills.

*Assistant Professors*: Bieler, Bouverat, Dallas, Jones, Kjarsgaard, Moon, Mullen, M. Schwartz, S. Schwartz, Vander Velde.

*Lecturers*: Bishop, DeLange, Jacobs, Keagle, Moore, Orme, Petry, Savage, Swift, Thomas.

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a student who wishes to graduate with

departmental honors must complete Education 336e,f,g, 336h, 337h, 436e,f,g, for a total of 20 credits of honors work in education; earn 3 or 4 credits of honors work in student teaching; satisfactorily perform on a comprehensive examination in education.

## GRADUATE STUDY

For a number of concentrations in education leading to the Master of Education degree, see the *Graduate Bulletin*.

## COURSES IN EDUCATION

KEY TO COURSE NUMBERS: The first digit follows the College policy of numbering for the year in which the course is normally taken. The second digit signifies the following course groups:

|   |   |
|---|---|
| 0 | Introductory                            |
| 1 | Foundations                             |
| 2 | Curriculum and Instruction              |
| 3 | Child and Youth Education               |
| 4 | Administration and Supervision          |
| 5 | Educational Media                       |
| 6 | Special Education and the Disadvantaged |
| 7 | Statistics and Research                 |
| 8 | Reading                                 |
| 9 | Supervised Teaching or Practicums       |

(See Psychology section for courses in Educational Psychology.)

### 109 INTRODUCTION TO EDUCATION

Introduction to the history, sociology, philosophy, and psychology of education; for Fairhaven College students.

### 131 INTRODUCTION TO EARLY CHILDHOOD EDUCATION (3)

Review of the field in terms of history, philosophy, and professional opportunities; observation of young children.

### 200 SPECIAL PROJECTS IN EDUCATION (2-5)

### 300 SPECIAL PROJECTS IN EDUCATION (2-5)

### 310 THE TEACHER AND THE SOCIAL ORDER (3)

Prerequisite: sophomore status. The conservative and liberal functions of American education and the consequent responsibilities of the teacher; the function of knowledge in society.

- 320 TEACHING LISTENING IN THE ELEMENTARY SCHOOL (3)  
 Analysis and practice of methods of direct instruction of specific listening skills needed for comprehension, critical and appreciative learning.
- 331 CREATIVE LEARNING EXPERIENCES IN EARLY CHILDHOOD EDUCATION (3)  
 Prerequisite: permission of department. Materials and teaching strategies designed to elicit creative responses in young children through storytelling, art, music, body movement, puppetry, creative dramatics, and other media of expression.
- 336e,f,g HONORS TUTORIAL (2-5)
- 336h SUMMER READINGS (2-5)
- 337h SEMINAR IN RESEARCH (2)
- 360 INTRODUCTION TO EXCEPTIONAL CHILDREN (3)  
 Prerequisite: admission to teacher education or permission of department. Problems and methods of identifying and teaching children who are handicapped or gifted.
- 361 RECREATIONAL COUNSELING WITH HANDICAPPED CHILDREN (4)  
 Prerequisites: permission of department. Outdoor camp program for handicapped children and adults; planning and carrying out a program of hiking, boating, fishing, swimming, and working with craft materials.
- 385 FOUNDATIONS OF READING INSTRUCTION (2)  
 Prerequisite: admission to teacher education. Study-reading in content areas; speed reading; basic principles of teaching reading; standardized and informal reading testing.
- 390 PROFESSIONAL PRACTICUM AND SEMINAR (3)  
 Prerequisite: permission of department. Observation, readings, seminars, and such other study as will enable the student to make a responsible decision about his future in teaching.
- 400 SPECIAL PROJECTS IN EDUCATION (2-5)  
 Prerequisites: permission of department; prior to admission a one-page description of project or research proposal must be presented. Special supervised individual projects.
- 411 FOUNDATIONS OF EDUCATION (4)  
 Prerequisite: admission to teacher education. Forces, influences, and aims in American society and education: what they are, how they develop; their effect upon what, how, and why people learn.
- 413 HISTORY OF AMERICAN EDUCATION (4)  
 Prerequisite: permission of instructor. Historical development of formal education emphasizing the impact of cultural forces on evolution of the American system of public education.
- 414 COMPARATIVE EDUCATION (3)  
 Prerequisite: permission of instructor. Educational systems in the major countries; backgrounds, aims, types, and present functions; comparison with the American system.
- 416 PERSISTENT PROBLEMS IN EDUCATION (3)  
 Seminars in socio-philosophical problems as they relate to education; different seminars deal with different problems and related sociological and philosophical theory.
- 417 SEMINARS IN SPECIALIZED AREAS  
 417b Education in Developing Countries (3)  
 417c Computer Techniques for Classroom Problem Solving (3)  
 Prerequisite: Ed 444 or equivalent.
- 420 INSTRUCTION IN SECONDARY SCHOOLS (3)  
 Prerequisites: admission to teacher education; Psych 351, 352. Recommended for quarter immediately preceding student teaching; examination and laboratory practice of major methods; videotaping of simulated and micro-teaching experience; observation in schools.
- 421 INSTRUCTION IN THE ELEMENTARY SCHOOL (3-5)  
 Prerequisite: Ed 390. Organizing learning experiences, selecting methods or processes and materials appropriate to the maturation and rate of development of children.
- 422 THE ELEMENTARY CURRICULUM (3)  
 Prerequisite: student teaching, teaching experience, or permission of department. Historical and analytical study of the curriculum of the elementary school.
- 423 AEROSPACE EDUCATION WORKSHOP (2-5)  
 Prerequisite: teaching experience or permission of instructor. A non-technical examination of current programs in aviation and space exploration for elementary and secondary teachers; may be repeated.

## Education

- 424a,b,c,d,x LANGUAGE ARTS IN THE CURRICULUM (3)  
Prerequisite: student teaching, teaching experience, or permission of department. Functions and programs of language arts in the curriculum. Letters indicate grade level of emphasis in various sections of the course:  
(a) Primary  
(b) Intermediate  
(c) Junior High  
(d) Senior High  
(x) Early Childhood
- 425 THE SECONDARY CURRICULUM (3)  
Prerequisite: student teaching, teaching experience, or permission of department. Historical and analytical study of the curriculum of the secondary school; application of theory to instructional practices.
- 426a,b,c,d SOCIAL STUDIES IN THE CURRICULUM (3)  
Prerequisite: teaching experience or permission of department. Functions, programs, and materials in the social studies. Letters indicate grade level of emphasis in various sections of the course:  
(a) Primary  
(b) Intermediate  
(c) Junior High  
(d) Senior High
- 427 HISTORICAL FOUNDATIONS OF ADULT EDUCATION (5)  
Prerequisite: senior or graduate status, or permission of instructor. Institutions participating in adult education since the 16th century; types of sponsorship, audiences, organization, social problems; current needs and institutional responses.
- 428 WORKSHOP IN INSTRUCTION (2-5)  
Prerequisite: teaching experience. Offered in conjunction with a summer conference, emphasizing an aspect of instruction; topics vary from summer to summer.
- 429 SEMINAR IN OUTDOOR AND CONSERVATION EDUCATION (5)  
Prerequisite: permission of department. Man's personal use of, effect on and attitude toward natural environments; management of timber, fisheries and game.
- 431 PRINCIPLES AND PROBLEMS OF EARLY CHILDHOOD EDUCATION (3)  
Prerequisite: senior status or permission of instructor. Development of curriculum for young children; effect of early environment upon learning; analysis of school practices in the context of modern educational theory and psychology of learning.
- 432 NURSERY EDUCATION (3)  
Prerequisite: Ed 431 or permission of instructor. Development of curriculum for nursery school age children, emphasizing experiences that develop language and physical coordination, inquiry and creativity.
- 433 KINDERGARTEN AND PRIMARY EDUCATION (3)  
Prerequisites: Ed 431 or teaching experience. Historical background; recent trends; organization of facilities and materials for kindergarten and primary programs; curriculum development based upon research in this area.
- 434e CHILD AND YOUTH STUDY (3)  
Prerequisite: permission of department. Observation of one pupil for a school year; systematic examination of those observations in bi-weekly seminars. The study may be extended for a second year as Ed 434f.
- 435e CHILD AND YOUTH STUDY WORKSHOP (3)  
Prerequisite: permission of department. Case record approach to the principles of child and youth study. Second year leaders register for Ed 435f. Summers only.
- 436e,f,g HONORS TUTORIAL (2-5)
- 438 SCHOOL-HOME-COMMUNITY RELATIONSHIPS (3)  
Prerequisite: admission to teacher education. Problems of communication and interaction among teachers, parents, and paraprofessionals, administrators, and community; conferencing, planning meetings, community survey, PR publications, use of mass media.
- 439 IMPROVEMENT OF WRITING SKILLS FOR CHILDREN (3)  
Prerequisite: Psych 352 or equivalent. Appropriate sequence of skills in composition for early grade children; techniques implementing creative writing and improving fundamental skills.
- 441 ANALYSIS OF TEACHING (3-5)  
Prerequisites: Psych 351, and permission of instructor. Analysis of techniques in teaching, and practice in their use; theoretical bases of selected category systems; the use of objective, systematic feedback in development of teaching skills and strategies; individual projects.
- 442 WORKING WITH STUDENT TEACHERS (3)  
Prerequisite: teaching experience. Techniques for the orientation of student teachers, major problems which confront student teachers, and evaluation of their achievement.

- 443 THE COMMUNITY COLLEGE (3)  
Prerequisite: senior or graduate status. History, objectives, organization, and role of the public community college; special attention to the expanding system in the state of Washington.
- 444 INSTRUCTIONAL MANAGEMENT SYSTEMS (3)  
Prerequisite: permission of instructor. Survey of both manual and automated systems including Computer-Managed Instruction Systems (CMI) and Computer-Assisted Instructional Systems (CAI).
- 445 CURRENT TRENDS IN EDUCATION (2-5)  
Seminars for the study of one particular current topic in education.
- 445a Negotiations (3)
- 445c Evaluation of Special Education (3)  
Prerequisite: teaching experience or permission of instructor.
- 445d Curriculum and Teaching in Early Childhood Education (2-4)  
Prerequisite: teaching experience or permission of department.
- 445e Confrontation and Crisis in Secondary Education (3)
- 445f Precision Teaching—A Methodology for the Disfunctional Child (3-5)
- 445g Modern Methods of Reading Instruction (3)  
Prerequisite: permission of instructor; limited to EPDA fellows.
- 445h Interpersonal Communication (3)
- 445j Current Trends in School Finance (3)
- 445k Creative English for the Elementary School (4)  
Prerequisite: teaching or student teaching experience.
- 450 AUDIOVISUAL COMMUNICATIONS: BASIC (3)  
Prerequisite: an introductory professional education course. The role and application of educational media and technology in the teaching-learning process; laboratory.
- 451 AUDIOVISUAL COMMUNICATIONS: ADVANCED (3)  
Prerequisite: Ed 450. Preparation of inexpensive instructional materials for classroom utilization; selection, evaluation, utilization of major types of audiovisual materials and equipment; organization and curricular integration of educational media.
- 457 PROGRAMMED LEARNING (3)  
Prerequisite: Psych 351. Programmed learning as application of theories of learning; practice in developing specific behavioral objectives; writing short programs in field of interest.
- 461 OBSERVATION AND PARTICIPATION IN SPECIAL EDUCATION (3)  
Prerequisite: Ed 360 or permission of department. Guided observation and limited participation in selected programs for exceptional children.
- 462 THE EXCEPTIONAL CHILD IN THE CLASSROOM (4)  
Prerequisite: Ed 360. Identification and etiology of most prevalent handicaps found in special education classes; curriculum development and adaptation; selected methods and materials basic to teaching these handicapped children.
- 464 THE DISADVANTAGED: SEMINAR (2)  
Prerequisite: teaching experience. Psychological, sociological, and educational implications of the problem of disadvantaged youth; analysis of planning efforts for disadvantaged children and youth.
- 465 ACTIVITIES FOR EDUCATION OF THE HANDICAPPED (3)  
Prerequisite: Ed 360 or permission of instructor. Experiences designed to provide knowledge of and ability to use equipment and material in teaching arts and crafts to handicapped children.
- 473 EDUCATIONAL STATISTICS (5)  
Prerequisite: Math 240 or equivalent, or permission of instructor. Statistics applicable to description of school data and research in education, primarily selected analysis of variance and correlation procedures; computer applications.
- 475 EVALUATING PUPIL GROWTH (3)  
Prerequisite: teaching experience or permission of instructor; for experienced teachers and research workers. Evaluative techniques related to significant or complex objectives; assessing outcomes of innovative teaching.
- 477 TEACHING HIGHER LEVEL THINKING ABILITIES (5)  
Prerequisite: Psych 351, 352. Cognitive functions and teaching strategies that promote higher level thinking abilities in students, based primarily on the work of Taba.
- 478 TEACHING PROBLEM SOLVING (2)  
Application of research in the development of problem solving and teamwork skills for teachers and administrators.
- 479 INQUIRY DEVELOPMENT (3-5)  
Systematic preparation of teachers in strategies related to development of autonomous and productive inquirers; instruction in four main types of action necessary to stimulate and sustain inquiry: searching, processing data, discovering, and verifying.

## Education

- 480 CONFERENCE IN READING (1-3)  
Prerequisite: teaching experience. Offered from year to year with varying themes.
- 480d OBSERVATION AND DEMONSTRATION IN READING (3)  
Prerequisite: teaching experience. Observation and participation in a classroom utilizing individualized learning procedures.
- 480e PRACTICUM IN COLLEGE READING (2)  
Practical experience as an instructor in college reading program. Work done under faculty supervision. Emphasis on tests and analysis of reading performance. For EPDA fellows only.
- 484 THE TEACHING OF READING IN CONTENT FIELDS (3)  
Techniques of teaching reading and applying reading to studying in social studies, science, mathematics, English, and other content areas in upper intermediate and secondary grades.
- 485 BASAL READING INSTRUCTION (3)  
Prerequisite: Ed 385; open to undergraduates only. Basal reading instruction in grades K-8; methods and materials for teaching reading, reading readiness; work attack skills, word reading skills, comprehension skills; grouping; lesson planning.
- 486 PROBLEMS IN CORRECTIVE READING INSTRUCTION (4)  
Prerequisite: permission of department. Analysis, correction, and prevention of reading problems; refinement of group and informal testing, supervised practicum with pupils having mild disabilities in reading.
- 487a,b,c,d IMPROVEMENT OF INSTRUCTION IN READING (3)  
Prerequisite: graduate status. Teaching developmental reading; methods, materials, theory. Letters indicate grade level of emphasis in various sections of the course:  
(a) Primary  
(b) Intermediate  
(c) Junior High  
(d) Senior High
- 488 INDIVIDUALIZED READING INSTRUCTION (3)  
Individualized reading as a method of instruction; utilization of children's books; independent work activities; reporting and record keeping; teaching program.

## SUPERVISED LABORATORY AND TEACHING

Courses 490-496 and 498 offer varied opportunities for laboratory study in the classroom and for student teaching. Practice in the classroom is an integral part of professional preparation.

### *Requirement for Student Teaching*

Practice in the classroom under supervision is an integral part of the student's professional preparation. The requirement in student teaching for the provisional certificate is generally 16 credits, inclusive of associated seminars.

The student, under advisement, may seek to develop teaching competence in two fields if he has adequate academic background. He may also obtain recommendations for both secondary and elementary levels if he has an appropriate major field and the Elementary Teaching Minor, and undertakes student teaching at both levels either within the 16 credit requirement or by an additional experience. However, two different experiences in the same quarter cannot be arranged.

Course challenge of the above requirement is considered by the Department of Education, with or without credit, on the basis of recency, type and effectiveness of previous public school teaching experience.

### *Prerequisites for Student Teaching*

- a. Admission and continued good standing in the professional education program (a cumulative grade point average of 2.2 or better required). Students should also be aware of the departmental grade requirement for the teaching major, and have reasonable expectations of meeting it before undertaking student teaching in the field.
- b. Satisfactory completion of Education 385 (elementary) or Education 420 (secondary), Psychology 351, and either Psychology 352 or 371. In the alternate program, Education 491-492 satisfies this prerequisite.
- c. Completion of 128 credits.
- d. For secondary student teaching, at least 30 credits in the major with grade average acceptable for departmental recommendation. A methods course in the major is strongly recommended.
- e. For elementary student teaching, Mathematics 281 and three courses selected from: Social Studies 425, Mathematics 481, Education 485, Eng 495, a course in science education.
- f. A chest x-ray in compliance with state law (also required for Ed 491, 492, 493).

*Application*

Students will file a plan for student teaching in the Office of the Director of Student Teaching early in winter quarter of the junior year. Students are expected to plan their senior year program around the student teaching quarter selected, since firm arrangements for assignment must be made between the College and cooperating school districts well in advance. Each student will consult with departmental advisers before making application for student teaching and will indicate a first, second, and third choice of geographic area. Normally, students will be given first choice of area and quarter, but it may be necessary to assign some to a second choice of one or both. In the latter event, the student will be consulted as to possible personal or academic hardship which may ensue. Final decisions will be made by the Director of Student Teaching.

Students planning to take student teaching fall quarter are advised that eligibility must be established by the close of spring quarter and that they are expected to begin their student teaching with the fall opening of the public school. Fall quarter student teachers will also register for Education 490.

*Time Involvement*

Sixteen credit courses involve seven clock hours daily, plus a seminar.

Eight credit courses involve three and one-half morning hours daily, plus a seminar.

*Student Teaching Resident Centers*

Student teaching opportunities are offered in Resident Centers (in residence while off campus) in Skagit County, Oak Harbor, Marysville, Snohomish, Everett, Edmonds, Mukilteo, Shoreline, Bellevue, Seattle, Renton, Kent, Auburn, Federal Way, Tacoma, Olympic Peninsula area and Vancouver, B.C. Students are responsible for their own housing arrangements. If assistance is needed, the school district or college supervisor should be consulted.

## 490 OBSERVATION AND PARTICIPATION (3)

Prerequisite: permission of department. Guided observation of experienced teachers and limited participation in teaching situations.

## 491 LABORATORY IN PREPARATION OF INSTRUCTIONAL PROGRAMS (6)

Prerequisite: admission to teacher education, and permission of department. Individual study of learning principles and their application in cooperating schools; selecting and justifying objectives and defining them operationally; designing plans, selecting strategies and materials to implement plans, adapting to actual pupils in the schools. Also offered as Psychology 491.

## 492 LABORATORY IN INTERACTION AND EVALUATION (6)

Prerequisite or concurrent: Ed 491. Implementing significant learning objectives through interaction with pupils; evaluation of learning under guidance of cooperating public school teachers and college faculty. Also offered as Psychology 492.

## 493ef INDIVIDUALIZED INSTRUCTION IN READING – LANGUAGE ARTS IN THE ELEMENTARY SCHOOL (6 ea)

Prerequisite: permission of department. Integration of reading, writing, speaking, listening and use of children's books as functional tools of the communication process; laboratory experience in developing individualized language activities with children in school settings.

## 494 SUPERVISED TEACHING – ELEMENTARY (8-16)

Prerequisite: permission of department. (See student teaching prerequisites above.) Supervised experience providing opportunities to develop and demonstrate teaching competence at the primary and/or intermediate grades. May be repeated with varied assignment.

## 495 SUPERVISED TEACHING – SECONDARY (8-16)

Prerequisite: permission of department. (See student teaching prerequisites above.) Supervised experience providing opportunities to develop and demonstrate teaching competence at the junior high (middle school) or senior high school level. May be repeated with varied assignment.

## 496 PRACTICUM IN DIAGNOSIS AND PRESCRIPTION IN TEACHING (2-3)

Prerequisite: teaching experience. Defining objectives behaviorally; developing sequential learning activities; analyzing pupil readiness; prescribing appropriate strategies for continuous individual progress; applications with students in classrooms. May be repeated with varied content to a total of nine credits.

## 497j INSTRUCTIONAL MODELS FOR SECONDARY SCHOOLS (3)

Standard and innovational models emphasizing process of instruction and methods appropriate for modern secondary classroom. Summer 1971.

## 497t THE DISADVANTAGED: PSYCHOLOGICAL AND SOCIAL IMPLICATIONS (3)

Sociological and psychological effects of cultural and economic deprivation on the development of personality and intelligence in children and youth; methods successful in eliminating deprivation in both rural and urban areas. Extension 1970.

## Education

- 498 SUPERVISED TEACHING—EXCEPTIONAL CHILDREN (8-16)  
Prerequisite: Ed 360 and 462 and student teaching or teaching experience. Supervised teaching experience providing opportunities to develop and demonstrate teaching competence for exceptional children.
- 500 SPECIAL PROJECTS IN EDUCATION (2-5)  
Prerequisites: permission of department; prior to admission a one-page description of project or research proposal must be presented. Supervised individual projects.
- 501 INTRODUCTION TO EDUCATIONAL RESEARCH (4)  
Prerequisite: graduate status. Experimental documentary, case study, survey, and other methods of educational research and investigation; required during the first quarter of the student's program leading to the master's degree.
- 511 SEMINARS IN SOCIAL THEORIES AFFECTING EDUCATION (3)  
Studies in various aspects of social theory as it relates to education. Different seminars will deal with different topics and related theory.
- 512 SEMINAR IN EDUCATIONAL PHILOSOPHY (4)  
Prerequisites: Ed 501. Differing concepts of the nature of man and his education; historical and philosophical development of these concepts, their basic premises, implicit assumptions, and issues.
- 513 SEMINAR IN PSYCHOLOGY AND SOCIOLOGY OF EDUCATION (4)  
Prerequisites: Ed 501. Differing concepts of the nature of the individual and society; psychological and sociological development of these concepts; basic premises and implicit assumptions.
- 515 PHILOSOPHY OF EDUCATION (3)  
Prerequisite: Ed 411 or equivalent, and permission of instructor. Critical analysis of theoretical positions in educational philosophy; emphasis on modern and contemporary discussion of educational theory. Also offered as Phil 515.
- 516 SEMINARS IN PHILOSOPHY OF EDUCATION (3 ea)  
Prerequisite: Ed 411 or equivalent. Studies of the works of one man, a problem, or a movement; implications for schooling.
- 517 HISTORY OF EDUCATIONAL THOUGHT (3)  
Prerequisite: Ed 413 or equivalent, and permission of instructor. Development of ideals, theories, institutional structures and practices.
- 518 CURRENT ISSUES IN HIGHER EDUCATION (3)  
Prerequisite: graduate status or permission of department. Examination and discussion of several current and controversial issues in higher education—e.g., student demands, minority groups, grading.
- 521a,b,c,d SEMINARS IN CURRICULUM (4 ea)  
Prerequisites: teaching experience and Ed 422 or 425, or permission of department. Planning and developing curriculum; advanced study of curriculum design and materials; independent research. Letters indicate grade level of emphasis in various sections of the course:  
(a) Primary  
(b) Intermediate  
(c) Junior High  
(d) Senior High
- 524 SEMINAR IN SECONDARY SCHOOL LANGUAGE ARTS CURRICULUM (2-4)  
Planning and developing curriculum in language, literature, and composition. Advanced study in specialized curriculum design and materials.
- 531 SEMINAR IN EARLY CHILDHOOD EDUCATION (3)  
Prerequisites: Ed 422, 431, 432, and 433 or permission of department; to be taken concurrently with Ed 591. Critical analysis of programs of early childhood education emphasizing interpersonal relations, role of agencies, and instructional procedures and materials.
- 532 SEMINAR IN ELEMENTARY EDUCATION (3)  
Prerequisites: Ed 501, 512, 422, or permission of department. Current issues in curriculum, methods, and organization.
- 533 SEMINAR: PROBLEMS IN EARLY CHILDHOOD EDUCATION (3)  
Prerequisite: Ed 531, 591. Specific problems will be drawn from the field and content organized according to student need.
- 541a THEORY IN EDUCATIONAL ADMINISTRATION (3)  
Prerequisite: graduate status. Major administrative theories and models.
- 541b PUBLIC SCHOOL ORGANIZATION AND ADMINISTRATION (3)  
Problems related to administration of school personnel, plant, and program; structure and organization of the school system.
- 541c SCHOOL LAW (3)  
Prerequisite: Ed 541a. Legal principles underlying statutes and court decisions related to the schools.



- 541d INTERGOVERNMENTAL RELATIONS IN EDUCATION (3)  
Prerequisite: Ed 541a. Formal and informal mechanisms at state and federal level which influence decision-making and program development at the local level.
- 543a SUPERVISION IN THE PUBLIC SCHOOLS (3)  
Supervision as educational leadership in the development and periodic revision of plans for continuous evaluation and improvement of school practice.
- 543b SEMINAR IN SCHOOL PERSONNEL ADMINISTRATION (3)  
Prerequisite: Ed 541a. Professional relationships among certified employees and other school personnel; development and implementation of policies.
- 544a SYSTEMS APPROACH AND EDUCATIONAL MANAGEMENT (3)  
The systems approach as related to educational project planning and management; flow charting, modeling, PERT, simulation and other systems techniques and concepts.
- 544b COMPUTER TECHNOLOGY AND EDUCATION (4)  
Prerequisite: Ed 544a and permission of instructor. Utilization of electronic data processing in school management, local school district research, and computer assisted instruction.
- 545a ECONOMIC FOUNDATIONS OF PUBLIC SCHOOL FINANCE (3)  
Prerequisite: Ed 541a and 541b, or permission of instructor. Fiscal arrangements for obtaining private sector funds to support formal educational services of public school districts; alternative approaches for evaluating efficiency and effectiveness of expenditure of such funds.
- 545b SEMINAR IN PUBLIC SCHOOL FINANCE (3)  
Prerequisite: Ed 541a or 541b, or permission of instructor. Local-state fiscal arrangements including state subvention formulas; current school budgets; related educational finance procedures.
- 546a SCHOOL PLANT PLANNING (3)  
Prerequisite: Ed 541a. Planning school building program through analysis of population trends in the community; relationship of school plant to the educational program; problems in utilization of school facilities.
- 547 READINGS IN SCHOOL ADMINISTRATION (2-5)  
Prerequisite: permission of the instructor. Supervised study focusing on one or more selected topics.
- 548a,b,c FIELD EXPERIENCE IN ADMINISTRATION FOR THE PRINCIPAL (2-6)  
Prerequisite: permission of department. For applicants for a Washington State administrative credential.
- 549 SEMINAR IN SCHOOL ADMINISTRATION (4)  
Current and emergent education problems.
- 550 ORGANIZATION AND ADMINISTRATION OF EDUCATIONAL MEDIA PROGRAMS (3)  
Prerequisite: Ed 450 or permission of department. Basic problems and principles in establishing and directing an audiovisual center; coordinating, staffing, financing, housing and evaluating the service.
- 560 SEMINARS IN SPECIAL EDUCATION (2-5)  
Prerequisites: graduate status and permission of department. Specific problems and methods for serving exceptional children. Content will vary from summer to summer; hence, the course may be repeated for credit.
- 561 ADVANCED PROBLEMS IN SPECIAL EDUCATION (3-5)  
Prerequisite: permission of department. Intensive study of problems in a selected area of special education.
- 562 ETIOLOGY OF MENTAL RETARDATION (3)  
Prerequisite: teaching experience or permission of department. Mental retardation; major clinical types whose principal feature is retardation; causes; on-going research into this problem.
- 563 CURRICULUM AND METHODS OF INSTRUCTION FOR THE MENTALLY RETARDED (3)  
Prerequisite: Ed 562. Class organization, selection of curriculum content and instructional aids for teaching children having a wide range of mental retardation.
- 564 DESCRIPTION, IDENTIFICATION AND CLASSROOM MANAGEMENT OF MALADJUSTED CHILDREN (3)  
Prerequisite: teaching experience or permission of department. The emotionally disturbed child in the classroom.
- 570 FIELD PROJECT OR THESIS (6)  
Prerequisite: approval of the student's graduate committee. Field project or a research study under the direction of a faculty committee. The field project or thesis may be done off-campus between periods of residence work.
- 575 ASSESSING EDUCATIONAL QUALITY (3)  
Prerequisite: Ed 501 or permission of instructor. Developing criteria and designing procedures for measuring in-process and product resulting from special or innovative programs, community factors, options in administrative and instructional organizations; for coordinators and research workers in the schools.

## Education

- 576 ADULT EDUCATION ADMINISTRATION (5)  
Prerequisite: BA 401 or administrative experience and permission of instructor. Planning, organizing, budgeting, staffing adult educational programs in higher educational institutions, museums, libraries and churches.
- 577 LEARNING PROBLEMS OF ADULTS (5)  
Prerequisite: Psych 351 and permission of instructor. Identifying needs, motivation, testing and teaching strategies; use of conferences, short courses, residential learning, independent study.
- 578 CURRICULUM PLANNING FOR ADULT EDUCATION PROGRAMS (5)  
Prerequisite: graduate standing and permission of instructor. Programming to meet adult needs; analysis of adult life stages, community needs, changing vocational and professional needs; problems of the aging.
- 584 MEASUREMENT AND DESIGN IN READING RESEARCH (3)  
To be taken prior to or concurrent with Ed 501. Validation of standardized tests; application of research designs.
- 585 SEMINAR IN READING EDUCATION (2-3)  
Reading education research and its application to classroom practices, to individual problems in the teaching of reading, to supervision and administration of reading programs, and to the remediation of reading problems.
- 586 SEMINAR FOR READING SPECIALISTS (3)  
Prerequisite: permission of instructor. Development and execution of a research design in reading.
- 590 SEMINAR IN DEMONSTRATION TEACHING AND SUPERVISION (3)  
Prerequisite: Ed 442 or permission of department. Advanced studies in the principles of supervision, and the utilization of instructional resources and the evaluation and improvement of teaching.
- 591 SUPERVISED LABORATORY EXPERIENCE IN EARLY CHILDHOOD EDUCATION (5)  
Prerequisite: permission of department; Ed 531 concurrent. Experience in administration of early childhood units.
- 594efg PRACTICUM IN READING DIAGNOSIS AND REMEDIATION (4 ea)  
Prerequisite or concurrent: Ed 487 or equivalent, and permission of department; e, f, g must be taken in sequence.  
594e Standard diagnostic tests in reading; supervised practice in their use.
- 594f Individual case study; diagnosis of reading problems.
- 594g Remedial instruction of children with reading problems.
- 598 PRACTICUM IN SPECIAL EDUCATION (4)  
Individualized experience in programs for exceptional children for students having had teaching experience with handicapped children.
- 644a,b,c SEMINARS IN EDUCATIONAL MANAGEMENT: ADVANCED SYSTEMS THEORY (5 ea)  
Prerequisites: Ed 544a and master's degree.  
644a Advanced Educational Systems Analysis  
In depth study of systems theory, modeling, flow charting, PERT, and other systems tools and concepts.  
644b Operations Research and Educational Decision-Making  
Application of queuing theory, monte carlo simulation, game theory, markov chain analysis and inventory models to educational decision-making and management.  
644c Allocation of Resources  
Application of linear programming to the allocation of education resources.
- 648a,b,c FIELD EXPERIENCE IN ADMINISTRATION FOR THE PRINCIPAL (2-6)  
Prerequisite: permission of department. For applicants for a Washington State administrative credential who have had one quarter of Ed 548a,b,c.

## LIBRARY SCIENCE

Library Science constitutes an instructional unit attached to the Department of Education. The faculty serving this area include:

### *State Standards for Professional Preparation*

Elementary schools: LS 305, 306 or 307, 309, 401, 402; Ed 422, 450, 451. (For minimum preparation, select 18 credits from above courses, under advisement.)

*Minor* (secondary schools only;  
meets state minimum standards) 24 credits

LS 307 or 308, 401, 402, 403, 404  
Ed 425, 450, 451

Students desiring careers in library science should consider a master's degree program at a school of librarianship.

Students are also advised to inspect the Learning Resource program indicated under Fifth Year Advisement, page 88.

## COURSES IN LIBRARY SCIENCE

### 125 LIBRARY ORIENTATION (1)

Introduction to books and libraries, and to the Wilson Library in particular, with emphasis on effective use of standard reference tools.

### 305 BOOKS FOR ELEMENTARY SCHOOLS (3)

Examination, reading, and discussion of books most generally useful in work with boys and girls; emphasizing standards for selection of books, book lists, reviews of current books, modern trends in book production, and relation of books to the curriculum and reading interests of children.

### 306 INTRODUCTION OF BOOKS TO CHILDREN (3)

Prerequisite: Library Science 305. More intensive reading and discussion of books appropriate for primary and intermediate grades, with emphasis on preparation of bibliographies, and methods of arousing interest in books.

### 307 BOOKS FOR JUNIOR HIGH SCHOOLS (3)

Examination and discussion of books most generally useful in work with junior high school students emphasizing standards for selection of books, book lists, reviews of current books, modern trends in book production, and relation of books to the curriculum and to reading interests.

### 308 BOOK SELECTION (3)

Selection, examination, and discussion of books for libraries, especially those most suitable for young adults.

### 309 STORYTELLING (3)

Prerequisite: Library Science 305 or permission of instructor. Selection, adaptation, and presentation of stories for elementary school children.



### 401 THE LIBRARY IN THE SCHOOL (3)

The organization and maintenance of effective materials-centered libraries in elementary and secondary schools.

### 402 ORGANIZATION OF MATERIALS (3)

Principles of classification and cataloging; making unit cards, adapting printed cards, and organizing a shelf list and dictionary catalog.

### 403 BASIC INFORMATION SOURCES (3)

Evaluation of basic information sources and practice in their use.

### 404 THE LIBRARY IN THE SOCIAL ORDER (3)

Social, educational, and cultural implications of the role of the library in society.

# ENGLISH

*Professors:* McDonnell (Chairman), Becker, Brown, Huff, Lee, Muldrow, O'Brien, Peters, N. Thompson.  
*Associate Professors:* Bowman, Cary, Donker, Francis, Garber, Inniss, Johnson, Keep, Larsen, Lawyer, Lewis, Miller, Odom, Ryan, Skinner.  
*Assistant Professors:* Barchek, Billingsley, Farley, Garrigues, Larner, Lavers, Merrill, Odell, Symes.  
*Instructors:* Clark, Foley, Siegel, Slemmons.  
*Lecturers:* Stannard, Tipton.

## BACHELOR OF ARTS IN EDUCATION

*Major Elementary* 45 credits

- English 261, 262, 263, 380, 390
- Two courses from the English 321-326 series
- Two courses from English 331, 332, 333
- Library 350 unless taken as part of the Elementary Teaching Minor
- Electives under departmental advisement

*Major Secondary* 45 credits

- English 261, 262, 263, 343, 386
- Three courses from the English 321-326 series
- English 359 and one course from English 331, 332, 333
- English 390, 496 (unless minor A or B below is elected)
- Electives under advisement to include at least one 400 level course

English secondary majors may elect minors A, B, C, or D below, or a minor in another department.

*Minors* 24-25 credits

### A. *Linguistics Emphasis*

- Linguistics 201, 303
- English 390, 405a, 405b, 490, 491, 492

(Linguistics 301 or 302 recommended for Fifth Year)

### B. *Rhetoric*

- Linguistics 201
- English 302, 390, 405a, 405b, 496
- Six credits in electives under advisement

### C. *Creative Writing*

- Four courses from English 402a,b,c; 403a,b,c; 404a,b,c
- English 386, 470, 477
- 3 credits under departmental advisement in upper division electives in English

### D. *Journalism*

- Journalism 104 or 406
  - Journalism 160, 204, 304, 340, 350
  - Three staff courses (or equivalent professional experience) from:
    - (a) Journalism 111, 112, 113, 211, 212, 213, 311, 312, 313, 411, 412, 413
    - (b) Journalism 121, 122, 123, 221, 222, 223, 321, 322, 323, 421, 422, 423
- At least two courses are to be selected from list (a)

### E. *English Minor* (not open to English majors)

- English 261, 262, 263, 343, 390, 496
- Electives under departmental advisement

**F. English Minor** (for Elementary Education Majors)

- English 261, 262, 263, 380, 390, 495
- Electives under departmental advisement

**Interdisciplinary Major Concentration** 80 credits

(Satisfies both major and minor for teaching competency in both fields.)

**English** 40 credits

- English 261, 263
- Two courses from English 321-326 series
- Two courses from English 331, 332, 333
- English 343, 386, 390, 405a or 405b, 496
- Electives in English under department advisement

**Speech** 40 credits

- Speech 130, 202, 205 (or 4 credits in 206 or 486)
- Speech 235, 319, 332, 337
- Speech 340 (or Journalism 340 or 406), 350
- Speech 405 (or 204 or 307), 485
- One course from Speech 402, 407, 480, 481, 483, 490, 491
- One course from Speech 424, 425, 426, 427a,b,c

**Teaching Competence**

Recommendation for teaching competence normally requires completion of the major or major concentration with a grade of 2.5 or better. An exception is provided through the extended minor listed below.

**Extended Minor** 35 credits

To accompany a history major for those who desire recommendation for a teaching competence combination appropriate for junior high or middle school,

- English 261, 262, 263, 343, 390, 405b, 496
- One course from the English 321-326 series
- Two courses from the English 331-333 series
- Library Science 307

**BACHELOR OF ARTS****Major** 60 credits plus Supporting Courses

- English 261, 262, 263, 341, 343, 487
- Four courses from English 321-326, at least two of which are from English 321, 322, 323
- English 359 and one course from English 331, 332, 333
- English 349
- Electives under departmental advisement, including at least one 400 level course
- Supporting courses: 24 credits or the equivalent in one foreign language

**Major—Journalism** 60 credits

- Journalism 104 or 406
- Journalism 160, 204, 304, 340, 350, 404, 470, 480
- Three journalism staff courses from list (a) and three additional courses from list (a) or (b):
  - (a) Journalism 111, 112, 113, 211, 212, 213, 311, 312, 313, 411, 412, 413
  - (b) Journalism 121, 122, 123, 221, 222, 223, 321, 322, 323, 421, 422, 423
 (May be waived by substitution of equivalent professional experience)
- Journalism 430
- Choice of Journalism 310, 400, 440, 460
- 15 credits in related academic areas selected under advisement of journalism faculty

**Minors** 24-25 credits**A. English**

- English 261, 262, 263, 343
- Electives under departmental advisement

## English

### B. Linguistics

- Linguistics 201, 202, 301, 302, 303
- English 390, 490, 491

### C. Rhetorical Emphasis

- Linguistics 201
- English 302, 405a, 405b
- 12 credits in electives under advisement

### D. Creative Writing

- Four courses from English 402a,b,c; 403a,b,c; 404a,b,c
- English 386, 470, 477
- 3 credits under departmental advisement in upper division electives in English

### E. Journalism

- Journalism 104 or 406
  - Journalism 160, 204, 304, 340, 350
  - Three staff courses, or equivalent professional experience, from:
    - (a) Journalism 111, 112, 113, 211, 212, 213, 311, 312, 313, 411, 412, 413
    - (b) Journalism 121, 122, 123, 221, 222, 223, 321, 322, 323, 421, 422, 423
- At least two courses of the above are to be selected from list (a)

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, an English major who wishes to graduate "with honors" must complete English 460 and 487, an upper division course in philosophy or in comparative literature read in a foreign language.

## GRADUATE STUDY

For concentrations leading to the Master of Education or Master of Arts degree, see *Graduate Bulletin*.

## COURSES IN ENGLISH

### 101 LANGUAGE AND EXPOSITION (3)

A writing program that emphasizes command of language and standard rhetorical strategies.

### 131, 132, 133 MASTERPIECES OF WORLD LITERATURE WITH COMPOSITION (3 ea)

Prerequisites: Eng 131 prerequisite to 132; 132 prerequisite to 133. Papers based on readings from classical, medieval, renaissance, neoclassical, romantic, and modern literature.

### 201 READING AND EXPOSITION (3)

Prerequisite: Eng 101 or equivalent. A second-year writing course that emphasizes the reading of non-fiction prose and practice in effective, expository writing. Unlike English 202, it does not focus exclusively upon argumentation.

### 202 ARGUMENT AND EXPOSITION (3)

Prerequisite: Eng 101 or equivalent. A second-year writing course which deals exclusively with argument as a reading and writing problem, and allows for a variety of topical material arising from the social and pure sciences but affecting humanity at large.

### 234 INTRODUCTION TO BLACK LITERATURE (3)

Writing of Black writers in America in the 20th century.

### 261, 262, 263 CRITICAL INTRODUCTIONS TO FICTION, DRAMA, POETRY (3 ea)

Prerequisite: Eng 101 or equivalent; intended for majors and minors. Form and function, meaning and value in imaginative literature.

*For English majors and minors, all upper division literature courses have English 261, 262, 263 as prerequisites. For transfer English majors, 9 credit hours in literature and concurrent registration in this series will meet the prerequisite*

- 281, 282, 283 WESTERN WORLD LITERATURE (3 ea)  
Reading from classical and medieval, renaissance and neoclassical, romantic and modern literature. For students electing Option II for the general education humanities requirement; not open to students with credit in Gen Stu 121, 122, 123.
- 300 DIRECTED INDIVIDUAL STUDY (1-3)  
Prerequisite: permission of instructor and department chairman. Individual study of a topic not normally covered in a formal course.
- 302 ADVANCED EXPOSITION (3)  
Prerequisite: Eng 201, or 202 or permission of instructor. Opportunity for writers to develop skills on a mature level. The personal essay, biographical sketch, extended argument, and other forms. Individual projects.
- 321-326 ENGLISH LITERATURE (4 ea)  
Prerequisite: majors and minors see notice above; for other students Eng 263.  
321 Beowulf through Everyman  
322 Spenser through the Metaphysical Poets  
323 Dryden through Johnson  
324 Blake through Keats  
325 Carlyle through Wilde  
326 Hardy through Thomas
- 331, 332, 333 AMERICAN LITERATURE (3 ea)  
Prerequisite: majors and minors see notice above; for other students Eng 263. Historical, critical study of American writers.  
331 Early 19th Century  
332 Late 19th Century  
333 Early 20th Century
- 334 BLACK LITERATURE—AUTOBIOGRAPHIES (3)  
Prerequisites: Eng 261, 262, 263, or permission of instructor.
- 335 BLACK LITERATURE—POETRY, DRAMA, FICTION (3)  
Prerequisites: Eng 261, 262, 263 or permission of instructor.
- 341 CHAUCER (3)  
Prerequisites: majors and minors see notice above; for other students Eng 263. Chaucer's language and poetry, with emphasis upon *The Canterbury Tales*.
- 343 SHAKESPEARE (3)  
Prerequisite: majors and minors see notice above; for other students Eng 263. Survey of principal plays. Also offered as Speech 320.
- 349 MAJOR ENGLISH WRITERS (3 ea)  
Prerequisite: majors and minors see notice above; for other students Eng 263. Different writers of eminence will be treated from year to year in this series.
- 359 MAJOR AMERICAN WRITERS (3 ea)  
Prerequisite: majors and minors see notice above; for other students Eng 263. Different writers of eminence will be treated from year to year in this series.
- 380 WORLD LITERATURE FOR THE ELEMENTARY TEACHER (3)  
Prerequisite: majors and minors see notice above; for other students Eng 263. Critical background in the literary form of myth, legend, folk literature, epic, fairy tales, and realistic fiction; in-depth analysis of selected children's literature, both poetry and prose.
- 381 THE BIBLE AS LITERATURE (3)  
Prerequisite: one course in literature. Cultural backgrounds of the Old and New Testaments, together with a literary analysis of selected passages.
- 382 WORLD LITERATURE (3)  
Prerequisite: one course in literature. Introduction to world literature other than that of Western Europe.
- 382a INTRODUCTION TO ORIENTAL LITERATURE (3)  
Prerequisite: one course in literature. Literature of India and China as related to the thought of our time, with emphasis upon Indian epic and philosophy and the ideals of Confucius.
- 385 CONTEMPORARY ISSUES IN LITERATURE (3)  
Prerequisite: one course in literature. An examination of pressing issues of our time as revealed by a variety of novels, plays, poems or essays.
- 386 THEORY OF LITERATURE (3)  
Prerequisite: majors and minors see notice above; for other students Eng 263. The nature and judgment of literature as a form of art: principles and problems; writing of critical studies.
- 390 THE STRUCTURE OF AMERICAN ENGLISH (4)  
Introduction to structural and transformational grammars.
- 399a,b,c HONORS TUTORIAL (2-5 ea)
- 400 DIRECTED INDIVIDUAL STUDY (1-3)  
Prerequisite: permission of instructor and of the department chairman. Individual study of a topic not normally covered in formal courses.

## English

- 402a,b,c CREATIVE WRITING: FICTION (3 ea)  
Prerequisite: English 261 or permission of instructor. Opportunity for disciplined expression in writing fiction; reading short stories and novels. May be repeated as a, b, c, with a limit of one course per quarter.
- 403a,b,c CREATIVE WRITING: DRAMA (3 ea)  
Prerequisite: English 262 or permission of instructor. Opportunity for disciplined expression in writing drama for stage, film, television, or other media. May be repeated as a,b, or c, with a limit of one course per quarter.
- 404a,b,c CREATIVE WRITING: POETRY (3 ea)  
Opportunity for disciplined expression in writing poetry; reading traditional and modern poems. May be repeated as a, b, or c, with a limit of one course per quarter.
- 405a INTRODUCTION TO RHETORIC (3)  
Rationale of informative and persuasive writing; classical and modern treatments of invention, arrangement, prose style.
- 405b RHETORICAL ANALYSIS (3)  
Analysis of semantics, style, and tone; emphasis on expository writing.
- 406 COMPOSITION FOR TEACHERS (3)  
Practice and instruction to improve the writing of students; emphasis on developing understanding of the nature of composition, and skill in analyzing non-professional expository writing.
- 417 STUDIES IN LITERATURE (1-5)  
417a Strindberg and His Major Plays  
417b The Scandinavian Novel in English  
417c The Age of Romanticism  
417d The Naturalistic Novel  
417e Modern Fiction in Translation  
417f Medieval Epic and Romance  
417g Myth and Folklore
- 440 PERIOD STUDIES (2-5)  
Prerequisite: 15 credits in literature or permission of instructor. Different literary periods and movements will be treated from year to year.
- 443 STUDIES IN SHAKESPEARE (3)  
Prerequisite: English 343. Seminar in selected plays. Also offered as Speech 420.
- 445a CURRENT TRENDS IN ENGLISH EDUCATION (1-5)
- 450 THE EPIC OF CLASSICAL TRADITION (3)  
The Greek, Roman, French, and English epic as a genre.
- 451 THE NOVEL OF IDEAS (3)  
The philosophical novels of Diderot, Dostoevsky, Kafka, Koestler, Sartre, Camus, Kazantzakis, Robbe-Grillet.
- 460 STUDIES IN FORM AND TEMPER (2-5)  
Prerequisite: 15 credits in literature or permission of instructor. Different literary types and genres will be treated from year to year in this series; recommended for English honors.
- 461, 462, 463 DEVELOPMENT OF ENGLISH DRAMA (3 ea)  
Prerequisite: 15 credits in literature or permission of instructor.  
461 Medieval and Elizabethan-Jacobean  
462 English Drama 1660-1900  
463 20th Century English Drama  
Historical and critical survey of the English drama, with emphasis upon the greater writers (exclusive of Shakespeare). Also offered as Speech 421, 422, 423.
- 464, 465, 466 DEVELOPMENT OF THE ENGLISH NOVEL (3 ea)  
Prerequisite: 15 credits in literature or permission of instructor.  
464 The Eighteenth Century  
465 Romantic and Victorian  
466 Late 19th and Early 20th Centuries  
The English novel and its traditions.
- 470 CONTEMPORARY POETRY (3)  
Prerequisites: Eng 326 and 333 or permission of instructor. Selected representative English and American poets of stature.
- 472 CONTEMPORARY AMERICAN DRAMA (3)  
Prerequisite: 15 credits in literature or permission of instructor. Selected plays from World War II to present; recent trends in drama; theory of drama.
- 473 MODERN AMERICAN DRAMA (3)  
American theater from O'Neill to World War II. Also offered as Speech 424.
- 474, 475 DEVELOPMENT OF THE AMERICAN NOVEL (3 ea)  
Prerequisite: 15 credits in literature or permission of instructor.  
474 Nineteenth Century  
475 Late 19th and Early 20th Centuries  
The American novel and its traditions with emphasis on the greater writers.



- 477 THE CONTEMPORARY NOVEL (3)  
Prerequisite: 15 credits in literature or permission of instructor. English and American novels since World War II.
- 483 SOCIAL CHANGE AND THE MORAL ORDER IN RECENT LITERATURE (4)  
Prerequisite: 15 credits in literature or permission of instructor. Also offered as Philosophy 483 and Sociology 483. Study of recent works of fiction and non-fiction.
- 487 HISTORY OF LITERARY CRITICISM (5)  
Prerequisite: 15 credits in literature or permission of instructor. Reading and analysis of major documents of criticism from Plato to Eliot and Richards.
- 488 MODERN LITERARY CRITICISM (3)  
Prerequisite: 15 credits in literature or permission of instructor. Tendencies in recent and contemporary criticism with emphasis upon distinguished English and American critics; wide reading in critical theory and practice; writing of critical studies.
- 490 TRANSFORMATIONAL GRAMMARS (3)  
Introduction to phrase structure generation, sentence transformations, lexical and phonological features.
- 491 HISTORY OF THE ENGLISH LANGUAGE (3)  
The historical development of the English language; phonology, morphology, syntax, semantics.
- 492 AMERICAN ENGLISH DIALECTS (3)  
A study of the regional dialects of American English and their historical development.
- 495 ENGLISH FOR THE ELEMENTARY SCHOOL (3)  
Teaching the language arts: reading, writing, speaking, and listening; formal and informal methods; textbooks and materials.
- 496 ENGLISH FOR THE SECONDARY SCHOOL (3)  
Prerequisite: English 390 or permission of instructor. Teaching composition, language, and literature in the junior and senior high school; programs, procedures, and materials.
- 498 WORKSHOP IN THE TEACHING OF ENGLISH (3-5)  
Practical work in the problems of the teaching of English.
- 499a,b,c HONORS TUTORIAL (2-5 ea)
- Registration in the 500-level courses requires graduate status and departmental approval. An adequate background (normally an undergraduate major or minor in English), and the ability to do independent work are prerequisites. Attention will usually be given to a limited topic: one writer or a small group of writers, selected works, a single form.*
- 500 DIRECTED INDIVIDUAL STUDY (1-3)  
Prerequisite: permission of instructor and the department chairman. Individual study of a topic not normally covered in formal courses.
- 501 BIBLIOGRAPHY AND METHODS OF GRADUATE STUDY IN ENGLISH (3)  
Required of all candidates for the Master of Arts; to be taken as soon as possible after the student's admission to graduate status.
- 502a FICTION WRITING SEMINAR (3)  
Individual projects in fiction submitted for group discussion; recently published works of fiction studied for originality of style.
- 502b ADVANCED FICTION WRITING SEMINAR (3)  
Prerequisite: English 502a or permission of instructor. Individual projects in development of a finished manuscript.
- 503a PLAYWRITING SEMINAR (3)  
Individual projects in dramatic writing submitted for group discussion.
- 503b ADVANCED PLAYWRITING SEMINAR (3)  
Prerequisite: Eng 503a or permission of instructor. Individual projects in playwriting.
- 504a POETRY WRITING SEMINAR (3)  
Individual projects in poetry submitted for group discussion; recently published volumes of poetry studied for originality of styles.
- 504b ADVANCED POETRY WRITING SEMINAR (3)  
Prerequisite: English 504a or permission of instructor. Individual projects in development of an original idiom.
- 510 SEMINAR IN RHETORIC (5)  
Rhetorical theory and criticism; classical tradition and modern developments; applications for study and teaching language and literature.
- 513 SEMINAR IN TEACHING COLLEGE COMPOSITION (2)  
Prerequisite: appointment as teaching assistant or permission of instructor.

## English

- 520 SEMINAR IN ANGLO-SAXON LITERATURE (5)  
Prerequisite: Eng 59 1a or equivalent.
- 521 SEMINAR IN MEDIEVAL LITERATURE (5)
- 522 SEMINAR IN SIXTEENTH-SEVENTEENTH CENTURY LITERATURE (5)
- 523 SEMINAR IN EIGHTEENTH CENTURY LITERATURE (5)
- 524 SEMINAR IN ROMANTIC LITERATURE (5)
- 525 SEMINAR IN VICTORIAN LITERATURE (5)
- 526 SEMINAR IN CONTEMPORARY LITERATURE (5)
- 531 SEMINAR IN AMERICAN LITERATURE: BEGINNINGS TO 1860 (5)
- 532 SEMINAR IN AMERICAN LITERATURE: 1860-PRESENT (5)
- 541 SEMINAR IN CHAUCER (5)
- 543 SEMINAR IN SHAKESPEARE (5)
- 545 SEMINAR IN MILTON (5)
- 560 SEMINAR IN LITERARY FORM (5)
- 587 SEMINAR IN LITERARY CRITICISM (5)
- 590 LINGUISTICS (5)
- 591 HISTORICAL LINGUISTICS (5)  
591a Old English  
591b Middle English  
Prerequisite: English 491 or equivalent.
- 597q,x TEACHING COMMUNITY COLLEGE ENGLISH (1 ea)  
Prerequisite: admission to EPDA program or permission of department.
- 597y,z INTERNSHIPS IN COMMUNITY COLLEGE TEACHING (8 ea)  
Prerequisite: admission to EPDA program or permission of department.
- 598 RESEARCH IN THE TEACHING OF ENGLISH (1-3)  
Prerequisite: teaching experience. For Master of Education candidates only.
- 599 WRITING REQUIREMENT (6-7)  
Prerequisite: English 501. Credit varies according to the individual project. (See *Graduate Bulletin*.)

## COURSES IN JOURNALISM

- 104 NEWSWRITING (3)  
Prerequisite: ability to type 25 or more words per minute. Writing for newspapers; news elements and values, gathering news, structure and style of news stories; covering speeches and meetings, interviewing.
- 111, 112, 113 NEWSPAPER STAFF (2 ea)  
Prerequisite: Journ 104 or permission of instructor; freshman standing. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.
- 121, 122, 123 PERIODICAL STAFF (2 ea)  
Prerequisite: freshman standing. Workshop in periodical design, layout and production, training in the creative combination of type, headline, photographs and other illustrative material, text and caption writing; creative layout techniques; publication production; participation on the college periodical.
- 160 CURRENT EVENTS AND THE MEDIA (3)  
Discussions and interpretation of news in context of interaction with media; for potential journalists and others interested in current events.
- 204 COPY EDITING (3)  
Prerequisite: Journ 104 or permission of instructor. Newspaper copy desk operations: editing, headline writing; dummying; page make-up; editorial writing.
- 211, 212, 213 NEWSPAPER STAFF (2 ea)  
Prerequisite: Journ 104 or permission of instructor; sophomore standing. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.
- 221, 222, 223 PERIODICAL STAFF (2 ea)  
Prerequisite: sophomore standing. Workshop in periodical design, layout and production; training in the creative combination of type, headline, photographs and other illustrative material, text and caption writing; creative layout techniques; publication production; participation on the college periodical.
- 304 REPORTING (3)  
Prerequisite: Journ 104. Interviewing, news coverage, including campus sources, and standard community news sources, with emphasis on social agencies; writing for newspapers.

**310 ADVERTISING IN THE MASS MEDIA (3)**

Role of mass media advertising in the economy and advertising methods; research, planning and preparation of the message, selection of media, budgets and schedules; social performance of advertisers.

**311, 312, 313 NEWSPAPER STAFF (2 ea)**

Prerequisite: Journ 104 or permission of instructor; junior standing. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.

**321, 322, 323 PERIODICAL STAFF (2 ea)**

Prerequisite: junior standing. Workshop in periodical design, layout and production, training in the creative combination of type, headline, photographs and other illustrative material, text and caption writing; creative layout techniques; publication production; participation on the college periodical.

**340 THE PRESS AND SOCIETY (3)**

Historical backgrounds of journalism, tracing the rise of mass communications in the Western World with social, economic and political trends.

**350 LAW OF THE PRESS (3)**

Rights and legal restrictions on freedom of the press; constitutional guarantees, libel, contempt, privacy; other restrictions.

**400 SPECIAL PROBLEMS IN JOURNALISM (1-3)**

Prerequisite: permission of instructor. Individual studies and projects exploring specialized aspects of journalism.

**404 FEATURE WRITING (3)**

Prerequisite: Journ 304 or permission of instructor. In-depth article writing; development of ideas, gathering of materials and writing; special attention to individual interests; exploration of free-lance writing markets.

**406 JOURNALISM FOR PUBLICATION ADVISERS (3)**

Methods and techniques in teaching public school journalism; news elements, values and writing for newspapers. Not open to students who have taken Journ 104.

**411, 412, 413 NEWSPAPER STAFF (2 ea)**

Prerequisite: Journ 104 or permission of instructor; senior standing. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.

**421, 422, 423 PERIODICAL STAFF (2 ea)**

Prerequisite: senior standing. Workshop course in periodical design, layout and production, training in the creative combination of type, headline, photographs and other illustrative material, text and caption writing; creative layout techniques; publication production; participation on the college periodical.

**430 FIELD INTERNSHIPS (1-6)**

Supervised field work on newspapers, magazines, radio and TV stations, public relations and advertising agencies; for journalism majors between junior and senior years, usually during summer session.

**440 PRESS AND WORLD AFFAIRS (3)**

Prerequisite: Journ 340 or permission of instructor. The international role and operations of the press; factors affecting the free flow of news; major world news systems.

**460 LITERATURE OF JOURNALISM (3)**

Prerequisite: Journ 160 or permission of instructor. Readings and critical evaluation of literature by and about journalists.

**470 MASS COMMUNICATIONS THEORY AND RESEARCH (3)**

Introduction to theory and research in mass communications; review of pertinent literature; limited field studies.

**480 CURRENT PROBLEMS (3)**

Prerequisite: Journ 350 or consent of instructor. The modern function of the press in a democratic society; virtues and shortcomings of the press in current trends; management structure of media and its interaction with journalistic ethics.

# FOREIGN LANGUAGES AND LITERATURE

*Associate Professors:* Robinson (Chairman), Baird, Brockhaus, Faber, Goldsmith, Kimmel, King, Moerschner, Param.

*Assistant Professors:* Amundsen, Balas, Barragan, Bryant, Eddy, Elmendorf, Milicic, Rangel-Guerrero, Rapoza, Weiss.

Students majoring in one foreign language may elect a minor in a second language. *At least nine upper division credits in any concentration must be taken in residence.*

## BACHELOR OF ARTS IN EDUCATION

### *Teaching Competence*

Recommendation for teaching competence normally requires completion of the major or major concentration with a grade of 2.5 or better. Students who have not completed an entire concentration but who have achieved a level of proficiency beyond the minimal requirements for a minor may be granted a qualified statement of competency to teach a foreign language on a beginning level pending additional work in the language during the fifth year. Statements of teaching competence are not normally issued, however, to persons who have completed a minor.

### *Major—Modern Language*

(French, German, Russian, Spanish)

Secondary 45-50 credits in courses above 200  
in one language

- Courses numbered 201, 202, 203, 290
- For French, 210 or 211; for Russian, 210 and 211
- Three courses from 310, 311, 410, 411
- Foreign Language Education 432
- Foreign Language Linguistics 370 or 470
- Three additional courses numbered in the 300's and two courses in the 400's selected under advisement

Elementary 45 credits in one language

- Courses numbered 201, 202, 203, 310, 311, 410, 411
- For French majors, French 210 or 211, 290
- For German majors, German 331 or 332
- Foreign Language Education 432
- Foreign Language Linguistics 370 or 470
- Electives under departmental advisement (French majors include one course from 301-306 and one 400 level course)

### *Major—Latin Secondary*

- 45 credits selected under advisement

### *Minor—A Modern Language*

- 19 to 25 credits in courses numbered 201 and above in one modern foreign language, including 6 credits in courses numbered 290 or above

### *Minor—Greek or Latin*

- 12 credits beyond the first year in college Latin or Greek

### *Minor—Classical Studies*

- Classics 350
- 15 credits from Classics 411, 421, 422, 431, 441, 451
- 6 credits from History 411, 412, 413, 414; Phil 304

*Minor—Linguistics*

- Linguistics 201, 202, 301, 302, 303
- 6 credits selected under departmental advisement in a foreign language

**BACHELOR OF ARTS**

*Major—Greek or Latin*

- 45 credits in courses selected under advisement

*Major—A Modern Foreign Language*

- 45 credits in courses numbered 201 and above in one modern language, plus supporting courses
- Course 290 in the selected language
- Three courses from 310, 311, 410, 411
- Three courses from 301, 302, 303, 304, 305, 306, 344, 341, 342, 343
- German 331 or 332 for German majors
- Two courses from 401, 402, 403, 450 (except in the case of Russian)
- Electives under departmental advisement

Supporting courses: a program of 21 credits for either of the above majors, planned under departmental advisement in other languages, history, geography, philosophy, English, linguistics, or speech.

*Minor—A Modern Foreign Language*

- 19-25 credits in courses numbered 201 and above in one of the modern languages, including 6 credits in courses numbered 290 and above

*Minor—Greek or Latin*

- 12 credits beyond the first year in Latin or Greek

*Minor—Classical Studies*

- Classics 350
- 15 credits from Classics 411, 421, 422, 431, 441, 451
- 6 credits from History 411, 412, 413, 414; Phil 304

*Minor—Linguistics*

- Linguistics 201, 202, 301, 302, 303
- 6 credits selected under departmental advisement in a foreign language

**DEPARTMENTAL HONORS**

In addition to the general requirements for all honors students, a foreign language major who wishes to graduate “with honors” must complete 20 credits in upper division honors work in one foreign language for the Arts and Sciences major or 17 credits in upper division honors work in one foreign language for the Teacher Education major.

**GRADUATE STUDY**

For a concentration in German leading to the Master of Education degree, see *Graduate Bulletin*.

**COURSES IN FOREIGN LANGUAGES**

*Entering freshman students enrolling for the first time in any language at this college must take a placement test if they have previous knowledge of the language, however acquired. In some cases, they may be granted advanced placement credit.*

*The same regulation applies to new transfers unless the previous knowledge was attained in college level courses for which they have been granted credit. In the latter case, they may enroll in the next course in the sequence.*

**GENERAL COURSES**

201 INTERMEDIATE ENGLISH AS A FOREIGN LANGUAGE (3)

(Offered Spring, 1971, only, through Continuing Studies.)

## Foreign Languages

### 370 INTRODUCTION TO APPLIED LINGUISTICS FOR FOREIGN LANGUAGE MAJORS (3)

Prerequisite: 25 credits for the equivalent in the language to be taught. Comparison of structures (phonological, morphological and syntactic) of English and other languages.

### 432 METHODS AND MATERIALS FOR TEACHING MODERN FOREIGN LANGUAGES (3)

Prerequisite: 6 credits in one modern foreign language beyond the second year. Must be taken prior to student teaching in a foreign language.

### 497b INDIVIDUALIZED CONTINUOUS PROGRESS INSTRUCTION IN FOREIGN LANGUAGE (3)

A theoretical and practical investigation of the principles and techniques of individualizing foreign language instruction with opportunities to develop learning packages for the classroom.

For courses taught in translation, see Classical Studies (list below) and French 367, German 367, Russian 367, 467, Spanish 367.

## CLASSICAL STUDIES

*(The following courses require no knowledge of Latin or Greek as prerequisites.)*

### 101 LATIN AND GREEK IN CURRENT USE (2)

Principles governing the formation of English words derived from Latin and Greek.

### 350 GREEK AND ROMAN MYTHOLOGY (3)

Important classical myths seen in the context of classical literature; influence on Western literature.

### 411 GREEK AND ROMAN EPIC (3)

Prerequisite: Gen Stu 121 or Eng 281 or Classical Studies 350. Origins, development, nature of classical epic; readings from Homer, Apollonius of Rhodes, Vergil, Lucan.

### 421 GREEK AND ROMAN TRAGEDY (3)

Prerequisite: Gen Stu 121 or Eng 281 or Classical Studies 350. Origins and development of earliest European drama, thematic and structural principles of major dramatists; influence on later Western literature.

### 422 GREEK AND ROMAN COMEDY (3)

Prerequisite: Gen Stu 121 or Eng 281 or Classical Studies 350. Nature of classical comedy; readings from Aristophanes, Menander, Plautus, Terence.

### 431 THE CLASSICAL NOVEL (3)

Prerequisite: Gen Stu 121 or Eng 281 or Classical Studies 350. Readings from the Greek romances, Petronius' *Satyricon*, Apuleius' *The Golden Ass*; earliest extant novels in Western literature.

### 441 ROMAN SATIRE (3)

Prerequisite: Gen Stu 121 or Eng 281 or Classical Studies 350. Roman satire as a distinct genre in Latin literature; influence on later satiric tradition; readings from Juvenal, Horace, Seneca, Persius, Lucian.

### 451 GREEK AND ROMAN HISTORIANS (3)

Prerequisite: Hist 411 or 412, and 413 or 414. Development of writing of history in classical literature; readings from Herodotus, Thucydides, Sallust, Livy, Tacitus; their intellectual background, documentary sources and philosophy of history.

## FOREIGN LITERATURES IN TRANSLATION

See French 367, German 367, Russian 367, Russian 467, Spanish 367.

These courses are based on readings in foreign literature in English and no knowledge of foreign language is required for participation.

## FRENCH

### 101, 102, 103 ELEMENTARY FRENCH (5 ea)

To be taken in sequence. Fundamentals of speaking, reading, writing, and understanding French.

### 104 REFRESHER COURSE IN ELEMENTARY FRENCH (5)

Recommended for students with two years of high school French, or more if they do not qualify for French 201. A rapid review of basic skills needed for Intermediate French.

Foreign Languages

- 180 FRENCH FOR A READING KNOWLEDGE I (3)  
Not open to students with more than one year of college. For students needing a reading knowledge of the language; not applicable to a major or minor. See also French 2B0.
- 197a CONVERSATIONAL FRENCH (2)  
Basic principles of spoken French for persons with little or no previous knowledge of the language and whose chief interest is in the practical application of the aural-oral aspects of French.
- 201, 202, 203 INTERMEDIATE FRENCH (5, 5, 3)  
Prerequisite: French 103 or two years of high school French or equivalent score on placement examination; to be taken in sequence. Continuation of skill development begun in Elementary French, with additional work in vocabulary acquisition and grammar. Intensive reading and discussion in French of short passages from modern French texts.
- 210 PRONUNCIATION (2)  
Prerequisite: French 103. Practical phonetics and intensive oral practice.
- 211 INTERMEDIATE CONVERSATION (2)  
Prerequisite: French 103. Conversational practice involving situations of daily life.
- 237 CONVERSATION (2)  
See French 437
- 280 FRENCH FOR A READING KNOWLEDGE II (3)  
Prerequisite: French 180 or one year of college French or equivalent. To meet reading requirements for a master's degree.
- 290 INTRODUCTION TO FRENCH LITERATURE (3)  
Prerequisite: 10 credits of intermediate French or equivalent. An introduction to literary analysis. *Explication de texte* involving poetry, prose, and drama from the works of major authors.
- 301 THE MIDDLE AGES (3)  
Prerequisite: French 290 or permission of department. French literature and civilization from 1100 to 1500.
- 302 THE RENAISSANCE (3)  
Prerequisite: French 290 or permission of department. French literature and civilization from 1500 to 1630.
- 303 BAROQUE AND CLASSICISM (3)  
Prerequisite: French 290 or permission of department. French literature and civilization from 1630 to 1715.
- 304 THE ENLIGHTENMENT (3)  
Prerequisite: French 290 or permission of department. French literature and civilization from 1715 to 1802.
- 305 ROMANTICISM, REALISM, AND NATURALISM (3)  
Prerequisite: French 290 or permission of department. French literature and civilization from 1802 to 1880.
- 306 SYMBOLISM, SURREALISM AND EXISTENTIALISM (3)  
Prerequisite: French 290 or permission of department. French literature and civilization from 1880 to the present.
- 310, 311 ADVANCED CONVERSATION AND COMPOSITION (3 ea)  
Prerequisite: French 203 or equivalent; French 310 prerequisite to 311. Written and oral composition and grammar; vocabulary building.
- 337 CONVERSATION (4)  
See French 437
- 367 FRENCH LITERATURE IN TRANSLATION (3)  
Selected major works in French literature read and discussed in English; not applicable to a major or minor in French. When topics vary, the course may be repeated.
- 396a,b,c HONORS TUTORIAL (2-5)
- 401 STUDIES IN THE FRENCH NOVEL (3)  
Prerequisite: 9 credits in 301-306 series. Theory of novel and its development.
- 402 STUDIES IN FRENCH DRAMA (3)  
Prerequisite: 9 credits in 301-306 series. Theory of drama and its development.
- 403 STUDIES IN FRENCH POETRY (3)  
Prerequisite: 9 credits in 301-306 series. Theory of poetry and its development.

## Foreign Languages

- 410, 411 FRENCH PHONOLOGY, MORPHOLOGY, AND SYNTAX (3 ea)  
Prerequisite: French 311 or equivalent; French 410 prerequisite to 411. Advanced written and oral expression, identification and correction of phonological and grammatical problems.
- 420 HISTORY OF THE FRENCH LANGUAGE (3)  
Prerequisite: permission of department. Development of phonology, morphology and syntax from Latin to modern French.
- 432 CONTEMPORARY FRENCH CIVILIZATION (3)  
Prerequisite: permission of department. Topics in contemporary French life.
- 437, 337, 237 FRENCH CONVERSATION (4 ea)  
Prerequisites: for French 237, French 103 or equivalent; for French 337, French 202 or equivalent; for French 437, nine credits in upper division French. These courses are offered only as a part of the Study Abroad Program.
- 450 SEMINAR IN FRENCH LITERATURE (3)  
Prerequisite: 9 credits in upper division French and permission of department. Major authors and movements. Since topics vary, the course may be repeated.
- 470 APPLIED FRENCH LINGUISTICS (3)  
Prerequisite: permission of department. Comparison of structures (phonological, morphological, syntactic) of French and English.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 201, 202, 203 INTERMEDIATE GERMAN (5, 5, 3)  
Prerequisite: German 103 or two years high school German or equivalent; German 201 prerequisite to 202; German 202 prerequisite to German 203. Review of the fundamentals, reading, and conversation.
- 280 GERMAN FOR A READING KNOWLEDGE II (3)  
Prerequisite: German 180 or one year of college German or equivalent. For fulfillment of master's degree reading requirement.
- 290 INTRODUCTION TO GERMAN LITERATURE (3)  
Prerequisite: 10 credits of second year German or equivalent. Selected works of major German authors, with emphasis on reading improvement and methods of textual interpretation.
- 301 NINETEENTH CENTURY GERMAN LITERATURE I (3)  
Prerequisite: German 290 or permission of department. Emphasis on the Romantic Movement.
- 302 NINETEENTH CENTURY GERMAN LITERATURE II (3)  
Prerequisite: German 290 or permission of department. Emphasis on realism.
- 303 EIGHTEENTH CENTURY GERMAN LITERATURE (3)  
Prerequisite: German 290 or permission of department. Classical period of German literature as reflected in a major work of Lessing, Goethe, and Schiller.
- 310, 311 THIRD YEAR COMPOSITION (3 ea)  
Prerequisite: German 203 or the equivalent; German 310 prerequisite to 311. Written and oral composition and grammar, and vocabulary building.
- 320 PHONETICS (2)  
Prerequisite: German 203 or permission of department. A course designed to improve the student's pronunciation and intonation, to familiarize him with phonetic transcription, and to develop an awareness of problems involved in teaching sounds of German.
- 331 CIVILIZATION OF GERMANY THROUGH THE NINETEENTH CENTURY (3)  
Prerequisite: 13 credits of second year German or equivalent. Significant elements of German civilization presented through German texts.
- 332 GERMAN CIVILIZATION TODAY (3)  
Prerequisite: 13 credits of second year German or equivalent. Significant elements of German civilization.

## GERMAN

- 101, 102, 103 ELEMENTARY GERMAN (5 ea)  
Each course prerequisite to the next. Fundamentals of the language; pronunciation, grammar, aural comprehension, reading and speaking.
- 180 GERMAN FOR A READING KNOWLEDGE I (3)  
Not open to students with more than one year of college. Introductory course for students needing a reading knowledge of the language. See also German 280.



## Foreign Languages

- 341 THE GERMAN DRAMA (3)  
Prerequisite: German 290. Interpretation, discussion of selected readings.
- 342 GERMAN POETRY (3)  
Prerequisite: German 290. Interpretation and discussion of selected readings.
- 343 THE GERMAN NOVELLE OF THE NINETEENTH CENTURY (3)  
Prerequisite: German 290. Interpretation and discussion of selected readings.
- 344 THE GERMAN NOVELLE OF THE TWENTIETH CENTURY (3)  
Prerequisite: German 290. Interpretation and discussion of selected readings.
- 367 GERMAN LITERATURE IN TRANSLATION (3)  
Selections from eminent German authors read and discussed in English; not applicable to a major or minor. When topics vary, the course may be repeated.
- 396a,b,c HONORS TUTORIAL (2-5 ea)
- 401 EARLY GERMAN LITERATURE (3)  
Prerequisite: 9 credits in upper division German. Monuments of literature from pagan times through the development of New High German.
- 402 SEVENTEENTH CENTURY THROUGH THE ENLIGHTENMENT (3)  
Prerequisite: 9 credits in upper division German. Selections reflecting the development of German literature and thought from the Baroque through the Enlightenment.
- 403 GERMAN LITERATURE IN THE TWENTIETH CENTURY (3)  
Prerequisite: 9 credits in upper division German. Selections reflecting development of recent German literature.
- 410, 411 ADVANCED COMPOSITION AND GRAMMAR (3)  
Prerequisite: German 311 or permission of department. German 410 prerequisite to 411.
- 450 STUDIES IN GERMAN LITERATURE (3)  
Prerequisite: 9 credits in upper division German or equivalent, and permission of department. Major authors and movements. Since topics vary, the course may be repeated.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 501 CONVERSATION AND COMPOSITION (4)  
Prerequisite: German 410 or equivalent. Syntax, written and oral composition, conversation, based on topics reflecting history of German civilization from pagan times through the Reformation.
- 502 CONVERSATION AND COMPOSITION (4)  
Prerequisite: German 410 or equivalent. Syntax, written and oral composition, conversation, based on topics reflecting history of German civilization from Luther through Bismark.
- 503 CONVERSATION AND COMPOSITION (4)  
Prerequisite: German 410 or equivalent. Written and oral composition, conversation, based on topics reflecting contemporary German civilization.
- 504 APPLIED GERMAN LINGUISTICS (4)  
Principles of German phonetics, phonology, morphology and syntax.
- 505 HISTORY OF THE GERMAN LANGUAGE (4)
- 510 SEMINAR IN LITERATURE (4 ea)  
Three seminars required. Emphasis on teaching of literature in community colleges and high schools, research methods and evaluation. Topics announced in advance from the following:  
510a The Modern Short Narrative  
510b The Short Drama, *Horspeile* and *Finakter*  
510c Poetry, Folksong, Ballad and Modern Lyric
- 532 THE TEACHING OF GERMAN (4)  
Methods and materials for teaching German in the community college, secondary and elementary schools.
- 598 DIRECTED INDIVIDUAL STUDY (4)  
Prerequisite: admission to graduate standing.

## GREEK

- 101, 102, 103 ELEMENTARY GREEK (5 ea)  
Each course prerequisite to the next. Fundamentals of grammar designed primarily to provide an elementary reading knowledge; selected readings from Plato's simpler dialogues.

## Foreign Languages

- 121, 122, 123 INTRODUCTION TO MODERN GREEK (3)  
Fundamentals of the language: pronunciation, grammar, aural comprehension, reading and speaking, with emphasis on conversational Greek.
- 201, 202, 203 INTERMEDIATE GREEK (3 ea)  
Prerequisite: Greek 103 or equivalent; to be taken in sequence. Review of fundamentals; readings from Plato's dialogues, the orators, the *Iliad* or *Odyssey*; introduction to Greek civilization.
- 301 GREEK LYRIC POETRY (3)  
Prerequisite: Greek 203 or equivalent. Historical survey of origins and development of the Greek lyric with readings from major writers.
- 302 GREEK TRAGEDY (3)  
Prerequisite: Greek 203 or equivalent. Selected plays by Aeschylus, Sophocles and Euripides; history of Greek theatre and stage production.
- 303 GREEK HISTORIANS (3)  
Prerequisite: Greek 203 or equivalent. Selections from Herodotus and Thucydides; development of historical writing in Greece.
- LATIN
- 101, 102, 103 ELEMENTARY LATIN (5 ea)  
Each course prerequisite to the next. Fundamentals of grammar to provide a reading knowledge; selected readings from various Roman writers.
- 201, 202, 203 INTERMEDIATE LATIN (3 ea)  
Prerequisite: Latin 103 or two years high school Latin; each course prerequisite to the next. Review of fundamentals; selected readings from various Roman writers; introduction to Latin civilization.
- 301 LATIN LYRIC POETRY (3)  
Prerequisite: Latin 203 or equivalent. Historical survey of origins and development of the Latin lyric, with special attention to the poems of Horace, Catullus and Ovid.
- 302 ROMAN DRAMA (3)  
Selected plays of Plautus, Terence and Seneca; history and techniques of the Roman theatre.
- 303 ROMAN PHILOSOPHY (3)  
Prerequisite: Latin 203 or equivalent. Selected readings with emphasis on the Stoics and Epicureans.
- 305 SILVER LATIN LITERATURE (3)  
Prerequisite: Latin 203 or equivalent. Studies in literary traditions of the Early Roman Empire, including selections from Seneca, Pliny, and Martial.
- 306 ROMAN HISTORY AND ORATORY (3)  
Prerequisite: Latin 203 or equivalent. Readings from Sallust, Livy, Tacitus, and Cicero's orations.
- 396a,b,c HONORS TUTORIAL (2-5)
- PORTUGUESE
- 101, 102, 103 ELEMENTARY PORTUGUESE (5 ea)  
To be taken in sequence. Fundamentals of speaking, reading, writing, and understanding.
- RUSSIAN
- 101, 102, 103 ELEMENTARY RUSSIAN (5 ea)  
Each course prerequisite to the next. Fundamentals of the language; pronunciation, grammar, aural comprehension, reading, and speaking.
- 201, 202 INTERMEDIATE RUSSIAN (3 ea)  
Prerequisite: Russian 103 or two years high school Russian or equivalent; Russian 201 prerequisite to 202.
- 203 INTERMEDIATE RUSSIAN (3)  
Prerequisite: Russian 202. Review of the fundamentals, reading, aural comprehension, and speaking.
- 210, 211 SECOND YEAR CONVERSATION AND COMPOSITION (2 ea)  
Prerequisite: Russian 103 or two years high school Russian or equivalent. Russian 210 should be taken concurrently with 201; 211 with 202.
- 290 INTRODUCTION TO RUSSIAN LITERATURE (3)  
Prerequisite: 9 credits of second year Russian or equivalent. Selected works of major Russian authors, with emphasis on reading improvement and textual interpretation.
- 301 NINETEENTH CENTURY LITERATURE I (3)  
Prerequisite: Russian 290 or permission of instructor. Introduction to Pushkin, Lermontov, Gogol, and Turgeniev.

## Foreign Languages

- 302 NINETEENTH CENTURY LITERATURE II (3)  
Prerequisite: Russian 290 or permission of instructor. Introduction to Dostoevsky, Tolstoy, Chekhov.
- 303 TWENTIETH CENTURY LITERATURE (3)  
Prerequisite: Russian 290 or permission of instructor. The Symbolists, Acmeists, and Futurists; Russian formalism; Soviet Russian literature; versification.
- 310, 311 THIRD YEAR COMPOSITION (3 ea)  
Prerequisite: Russian 203 or equivalent; Russian 310 prerequisite to 311. Written and oral composition and grammar, and vocabulary building.
- 330 CIVILIZATION OF RUSSIA (3)  
Prerequisite: 9 credits of second year Russian or equivalent. Significant elements of Russian civilization presented through Russian texts.
- 367 INTRODUCTION TO RUSSIAN LITERATURE IN ENGLISH (3)  
Survey of history of Russian literature. May be applied to a B.A. major in Russian only as a supporting course.
- 396a,b,c HONORS TUTORIAL (2-5)
- 410 STRUCTURE OF RUSSIAN I (3)  
Prerequisite: three years of college Russian or permission of instructor. Principles of phonology and their application; phonetics as the basis of phonology.
- 411 STRUCTURE OF RUSSIAN II (3)  
Prerequisite: Russian 410 or permission of instructor. Morphology of the verb and noun.
- 467 RUSSIAN LITERATURE IN TRANSLATION (3)  
Prerequisite: 9 credits in upper division Russian or permission of instructor. Selected works discussed in English. Applicable to a major or minor if read in Russian.
- 496a,b,c HONORS TUTORIAL (2-5)
- SPANISH**
- 101, 102, 103 ELEMENTARY SPANISH (5 ea)  
To be taken in sequence. Fundamentals of speaking, reading, writing, and understanding.
- 201, 202, 203 INTERMEDIATE SPANISH (5, 5, 3)  
Prerequisite: Spanish 103 or equivalent; to be taken in sequence. Review of fundamentals; speaking, reading, writing, and understanding.
- 290 INTRODUCTION TO HISPANIC LITERATURE (3)  
Prerequisite: Spanish 203 or equivalent. Work of major Hispanic authors representing each literary genre; emphasis on reading improvement and methods of analysis.
- 301 SPANISH LITERATURE TO 1538 (3)  
Prerequisite: Spanish 290 or permission of instructor. Literary development from beginnings to death of Garcilaso.
- 302 SIGLO DE ORO (3)  
Prerequisite: Spanish 301 or permission of instructor. Literary development in various genres during the Golden Age; special study of major works and writers.
- 303 MODERN SPANISH LITERATURE (3)  
Prerequisite: Spanish 302 or permission of instructor. Selected authors and works from 1680 to present.
- 304 SPANISH-AMERICAN LITERATURE: COLONIAL PERIOD TO END OF NINETEENTH CENTURY (3)  
Prerequisite: Spanish 290 or permission of instructor. Selected authors and works.
- 305 MODERN SPANISH-AMERICAN LITERATURE (3)  
Prerequisite: Spanish 304 or permission of instructor. Modernism and other literary trends.
- 306 CONTEMPORARY SPANISH-AMERICAN LITERATURE (3)  
Prerequisite: Spanish 305 or permission of instructor. Major authors and trends after modernism.
- 310, 311 COMPOSITION AND CONVERSATION (3 ea)  
Prerequisite: Spanish 203 or equivalent; to be taken in sequence. Written and oral composition, grammar, and vocabulary building.
- 320 INTRODUCTION TO SPANISH PHONOLOGY (3)  
Prerequisite: Spanish 310 or equivalent. Intensive study of the Spanish sound system.
- 340 READINGS IN MODERN SPANISH DRAMA (3)  
Prerequisite: Spanish 303 or permission of instructor. Interpretation and discussion of selected readings.
- 341 TWENTIETH CENTURY SPANISH-AMERICAN NOVEL (3)  
Prerequisite: Spanish 306 or permission of instructor. Interpretation and discussion of selected readings.

- 342 GENERATION OF 1898 (3)  
Prerequisite: Spanish 303 or permission of instructor. Selected works of Unamuno and other principal authors of the movement.
- 367 SPANISH AND SPANISH-AMERICAN LITERATURE IN TRANSLATION (3)  
Major works, with reference to their cultural and historical setting, literary merit, and subsequent influence; read and discussed in English; not applicable to a major or minor. When topics vary, the course may be repeated.
- 396a,b,c HONORS TUTORIAL (2-5)
- 401 MEDIEVAL SPANISH LITERATURE (3)  
Prerequisite: 9 credits in upper division literature including Spanish 301, or permission of instructor. Masterpieces of the Middle Ages.
- 402 THEATRE OF THE SIGLO DE ORO (3)  
Prerequisite: 9 credits of upper division literature including Spanish 302, or permission of instructor. Lope de Vega, Calderon and their contemporaries.
- 403 SPANISH-AMERICAN POETRY SINCE MODERNISM (3)  
Prerequisite: 9 credits of upper division literature including Spanish 306, or permission of instructor. Careful analysis of major works.
- 404 SPANISH-AMERICAN SHORT STORY (3)  
Prerequisite: 9 credits of upper division literature including Spanish 306, or permission of instructor. Representative works from nineteenth century to present.
- 405 SPANISH LYRIC POETRY (3)  
Prerequisite: 9 credits of upper division literature or permission of instructor. Analysis of major works from the beginnings to the present.
- 406 CERVANTES SEMINAR: DON QUIXOTE (3)  
Prerequisite: 9 credits of upper division literature including Spanish 302, or permission of instructor.
- 410, 411 ADVANCED COMPOSITION AND GRAMMAR (3 ea)  
Prerequisite: Spanish 311 or permission of department; Spanish 410 prerequisite to 411.
- 450 STUDIES IN SPANISH LITERATURE (3)  
Prerequisite: 9 credits in upper division Spanish and permission of department. Major authors and movements. Since topics vary, the course may be repeated.

## GENERAL STUDIES

*Professor:* Buckland (Chairman).  
*Associate Professor:* Krieger.  
*Assistant Professors:* Beamer, Clothier, Copenhaver, Lobue, Payton, Stoeber, Wallace.  
*Instructor:* Graves.

The General Studies Department offers those General Education courses that include content from two or more disciplines. These courses are listed as General Studies 121, etc. Other courses in the General Education requirements for the bachelor's degree are offered by specific discipline departments, e.g. Math 151. The full list of General Education requirements is found on pages 53-54 of this catalog.

## GENERAL STUDIES COURSES

- 105 BEHAVIORAL SCIENCE (4)  
Man as a biological, psychological, and social organism; the processes of perception, learning, and motivation, and their social and cultural context.
- 121, 122, 123 HUMANITIES I, II, III (6 ea)  
(It is recommended that these be taken in sequence.) Historical survey of Western culture in its great outlines and major modes: politics, philosophy, art, music, and literature; lectures, readings, discussions.
- 121 The Ancient and Medieval World; the Near East, Greece, Rome, Medieval and Renaissance Europe.
- 122 The Early Modern World; the Reformation, the Age of Reason, the Enlightenment, Revolutions, and early Romanticism.
- 123 The Modern Period; the 19th and 20th Centuries; Romanticism, Liberalism, Nationalism, and the Technological Revolution.

200 INTRODUCTION TO ECONOMICS AND POLITICAL INSTITUTIONS (4)

Investigation of economic, legal, and political institutions in the context of private property from the pre-constitution period to the present.

321 NON-WESTERN CULTURES (4)

Prerequisites: junior status and completion of the preceding required general education courses. Cultural, socio-economic, and historical survey of the societies of Africa and Asia, with emphasis upon the recent past and problems of the present.

397b UTOPIAN THOUGHT IN LITERATURE (2-4)

Discussion of utopian and anti-utopian works from ancient times to the present; emphasis on 19th and 20th century novels.

397c HUMANITIES FOR THE SECONDARY SCHOOL (3)

Prerequisites: Gen St 121, 122, 123 or equivalent and Ed 310 or permission of instructor. Interdisciplinary course in teaching humanities in the senior high school: programs, procedures, and materials. Some classroom observation.

397d THE SCIENTIST AS MAN OF LETTERS (3)

An examination of concerns, style, intentions, effects, and influence in the writings of major thinkers in various scientific and environmental disciplines. Readings will include selections from writers such as Darwin, Freud, Einstein, Loren Eiseley, Robert Ardrey, Rachel Carson, James D. Watson, Lewis Mumford, Buckminster Fuller, T. H. Huxley, Fred Hoyle, and the Whole Earth Catalog. Registration is limited to 15; permission of the instructor is required. Students who register should be interested in writing about their interests and concerns, with the intent of communicating to the lay public.

497b GOD AND THE AMERICAN NATION: EXPLORATION IN THE SOURCES OF AMERICAN MORAL EARNESTNESS (2-4)

Historical and sociological examination of the relationship between "piety" and "patriotism" in America, from Jefferson to the present, with particular attention to the concept of the U.S. as a unique nation having a special, divinely-imposed "mission," and with deliberate reference to the social activism of the 1960's. A cooperative exercise in reading, discussion, and research. Admission on consultation with the instructor.

497c SURVEY OF CONTEMPORARY HUMAN VALUES AND PROBLEMS: CONCEPT OF ROMANTIC LOVE IN WESTERN CULTURE (3)

Romantic and Erotic Love: modern concepts and their background. Primitive, Classical, and Medieval attitudes concerning love and sex, courtly romantic love and its incorporation into the institution of marriage will provide background for an examination of contemporary conventions of erotic love in our own culture. Discussion of such writers as Plato, Petrarch, Spenser, Creely, Fromm, May and of contemporary films.

497d ALIENATION IN CONTEMPORARY SOCIETY (2-4)

Seminar in the manifestation of alienation in 20th century Western culture and its reflections in the development of theology, the fine arts and literature. The course will base itself on the philosophy of such thinkers as Nietzsche, Niebuhr, Kierkegaard, Bonhoeffer, Tillich, Cox, and will illustrate their impact through music, literature, and the fine arts by a study of the works of such men as Pound, Dos Passos, Mailer, McLuhan, Marcuse, Picasso, Stravinsky, and Appollinaire. Participation in Spring Symposium "Disorder and New Ideas of Order in the Arts" a requirement for completion. Course credit determined by consultation with instructor(s).

497e DISORDER AND NEW IDEAS OF ORDER IN CONTEMPORARY ART (3)

Examination of music, drama, literature, painting, the plastic arts and dance as they reflect contemporary consciousness.



# GEOGRAPHY

*Professors:* Critchfield (Chairman), Monahan, Mookherjee.

*Associate Professors:* Moore, Raney, Smith, Teshera.

*Assistant Professors:* McGuire, Scott, Stellwagen.

*Lecturers:* Andries, Mellander, Rheamer.

## BACHELOR OF ARTS IN EDUCATION

*Major* Elementary 45 credits

- Geography 201, 203, 251, 401, 421, 460
- Five credits from Geography 311, 313, 314, 315, 316, 318, 319, 320, 401, 411, 415, 416
- One course from Geography 331, 351, 353, 423, 424, 453
- One course from Geography 207, 301, 341, 422, 430, 435, 440, 442, 470, 480
- Electives
- All selections are to be made under departmental advisement

*Major* Secondary 45 credits

- Geography 201, 203, 207, 251, 460
- Five credits from Geography 311, 313, 314, 315, 316, 318, 319, 320, 401, 411, 415, 416
- One course from Geography 331, 423, 424, 431
- One course from Geography 341, 407, 408, 421, 422, 430, 435, 440, 442, 470
- One course from Geography 301, 351, 353, 453, 454, 480
- Electives
- All selections are to be made under departmental advisement

*Minor* 25 credits

- Geography 201
- Geography 203 or 207
- 15 credits in upper division courses under departmental advisement

*Extended Minor* 35 credits

(Alternate minor for teaching competency recommendation.)

- Geography 201, 203 or 207, 251
- 6 credits from Geography 311, 313, 314, 315, 316, 318, 319, 320, 401, 411, 415, 416
- 6 credits from Geography 331, 407, 408, 421, 422, 423, 424, 435, 440, 442, 453, 470
- Electives from above under departmental advisement

*Teaching Competence*

Recommendation for teaching competence requires completion of the major or the extended minor outlined above with a grade average of 2.5 or better.

## BACHELOR OF ARTS

The program of the undergraduate major or minor in geography should include fundamental courses in both the natural sciences and the social sciences. The department will recommend supporting courses related to the student's career objectives. The student contemplating work toward a graduate degree is advised to acquire a reading knowledge of a foreign language and competence in statistics during his undergraduate years. Departmental advisers should be consulted at an early date for assistance in program planning.

*Major—Geography* 70 credits  
plus Supporting Courses

- Geography 201, 203, 207, 301, 351, and 453 or 454

- Two courses from Geography 311, 313, 314, 315, 316, 318, 319, 320, 401, 411, 415, 416
- One course from Geography 331, 423, 424, 431
- Two courses from Geography 341, 353, 407, 408, 421, 422, 430, 435, 440, 442, 452, 470, 480
- Supporting course: Mathematics 240
- Electives under departmental advisement

*Minor—Geography* 25 credits

- Geography 201
- Electives under departmental advisement

*Major—Urban Regional Planning*

(See Interdepartmental Programs, page 207.)

DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a geography major who wishes to graduate "with honors" must complete Geog 480; fifteen credits in a foreign language; an oral examination in geography.

GRADUATE STUDY

For concentrations in geography leading to Master of Education, Master of Arts, or Master of Science degrees, see *Graduate Bulletin*.

COURSES IN GEOGRAPHY

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| <p>101 THE NATURAL ENVIRONMENT (4)<br/>Prerequisites: Physics 101 and Chem 101 or equivalents. Elements, processes, and unifying concepts in the natural environment of man. (Geography majors may not take 101 in lieu of 203.)</p> | <p>201 HUMAN GEOGRAPHY (5)<br/>Interrelations of man and his natural environment, emphasizing cultural influences on world geographic patterns.</p> <p>203 PHYSICAL GEOGRAPHY (5)<br/>Prerequisites: Physics 101 and Chem 101 or equivalents. Principles and techniques in analysis of areal distributions in the natural environment; landforms, water, climate, soils, vegetation.</p> <p>207 ECONOMIC GEOGRAPHY (5)<br/>World resources, industries, commodities, and commerce.</p> <p>251 MAP READING AND ANALYSIS (2)<br/>Interpretation of map symbols and content at different scales; analysis of different types of maps and charts.</p> <p>301 GEOGRAPHIC THOUGHT AND WRITING (5)<br/>Prerequisites: Geog 201, 203, 207. Source materials and techniques of geographic writing; emphasis on the nature and development of geography.</p> <p>311 THE UNITED STATES AND CANADA (5)<br/>Prerequisite: Geog 201 or permission. Physical environments, resources, settlement and economies of Canada and the United States.</p> <p>313 CARIBBEAN AMERICA (3)<br/>Prerequisite: Geog 201 or permission. Landforms, climate, vegetation, and soils of Mexico, Central America, and the West Indies, and their relationship to history, settlement patterns, and current economic conditions.</p> <p>314 SOUTH AMERICA (5)<br/>Prerequisite: Geog 201 or permission. South American nations, emphasizing culture, natural environment, economic activities, and regional differences.</p> <p>315 ASIA (5)<br/>Prerequisite: Geog 201 or permission. Asia's settlement, population, economic resources and activities, and associated problems.</p> <p>316 EUROPE (5)<br/>Prerequisite: Geog 201 or permission. Economic, political, and cultural problems of Europe.</p> <p>318 THE PACIFIC (3)<br/>Prerequisite: Geog 201 or permission. Physical environment, resources, and settlement of the Pacific Islands, Australia, and New Zealand.</p> |
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## Geography

- 319 AFRICA (5)  
Prerequisite: Geog 201 or permission. Resources, peoples, regions, and economic development of Africa.
- 320 THE U.S.S.R. (3)  
Prerequisite: Geog 201 or permission. Physical environment, resources, industries, population, and settlement of the Soviet Union with emphasis on the nation's role in world affairs.
- 331 WEATHER AND CLIMATE (5)  
Prerequisite: Geog 101 or 203 or permission. Elements of climate, climatic regions, and climate as an environmental factor.
- 341 URBAN GEOGRAPHY (5)  
Prerequisite: Geog 201. Geographic relations of the modern city with emphasis upon the development, functions, and problems of American cities.
- 351 CARTOGRAPHY (5)  
Practical experience in map and chart construction; the principles of grid representation, scale, symbols, lettering, design, and reproduction.
- 353 INTERPRETATION OF MAPS AND AERIAL PHOTOGRAPHS (3)  
Prerequisite: 4 credits in geography or permission. Reading and interpretation of maps and aerial photos; techniques used to identify geographic features of the landscape; field work.
- 400 SPECIAL PROBLEMS IN GEOGRAPHY (2-5)  
Individual projects under supervision.
- 401 THE PACIFIC NORTHWEST (3)  
Prerequisite: Geog 201 or permission. Pacific Northwest resources and industries and problems in resource development.
- 407 AGRICULTURAL GEOGRAPHY (3)  
Prerequisite: Geog 207. Agricultural types, production, and commodities, land use and land tenure.
- 408 GEOGRAPHY OF MANUFACTURING (3)  
Prerequisite: Geog 207. Manufacturing types, industrial land use, production, locational factors.
- 411 ARCTIC ENVIRONMENT (3)  
Prerequisite: Geog 201 or permission. Topical examination of physical environment, modern settlement and the development of resources in northern Canada and Alaska.
- 415 INDIA AND PAKISTAN (3)  
Prerequisite: Geog 201 or permission. Natural and cultural environments of India and Pakistan; their resources, population, and economic activities; emphasis on contemporary problems.
- 416 THE MIDDLE EAST (3)  
Prerequisite: Geog 201 or permission. Physical environment, resources, culture, and problems of Southwest Asia and North Africa.
- 421 CONSERVATION OF NATURAL RESOURCES (5)  
Principles and practices in the wise management and economic use of our natural resources with emphasis on the Pacific Northwest; materials and objectives in conservation education.
- 422 GEOGRAPHY OF WATER RESOURCES (3)  
Prerequisite: Geog 101 or 203 or permission. Principles and practices in water use and water conservation in the United States.
- 423 GEOGRAPHY OF SOILS (3)  
Prerequisite: Geog 101 or 203 or permission. Properties, formation, classification, distribution and management of the world's soils. Field study of selected soils.
- 424 BIOGEOGRAPHY (3)  
Prerequisite: Geog 101 or 203 or permission. Origin, distribution, and adaptation of plant and animal associations; examination of representative plant and animal forms in relation to physical environment and to man.
- 430 URBAN AND REGIONAL PLANNING (5)  
Prerequisite: Geog 341. Principles, problems and techniques of planning urban, suburban, and rural land use; theoretical and legal bases for functions of planning agencies.
- 431 PHYSICAL CLIMATOLOGY (5)  
Prerequisite: Geog 331 or Physics 321. Climatic elements and processes in the lower atmosphere; emphasis on heat and water balances.
- 435 HISTORICAL GEOGRAPHY OF THE UNITED STATES AND CANADA (5)  
Prerequisite: Geog 311 or American history. Techniques of historical geographical analysis, including sequent occupation and the reconstruction of past geographies of the United States and Canada.



- 440 GEOGRAPHY OF POPULATION (3)  
Prerequisite: Geog 201 or Soc 311 or permission. World distribution of population; patterns of population composition, fertility and mortality, inter- and intra-regional migrations; resources and population growth.
- 442 GEOGRAPHY OF SETTLEMENT (3)  
Prerequisite: Geog 201. Geographical analysis of rural and urban settlement origins and patterns in selected regions of the Old and New Worlds.
- 452 ADVANCED CARTOGRAPHY (3-5)  
Prerequisite: Geog 351 and permission of instructor. Advanced problems and laboratory projects in map and chart construction.
- 453 FIELD METHODS IN GEOGRAPHY (3)  
Prerequisite: Geog 351 or permission of instructor. Recording, mapping, and analysis of physical and cultural features.
- 454 ANALYSIS OF AREAL DATA (4)  
Prerequisite: Math 240. Statistical and cartographic techniques in solving geographic problems.
- 460 THE TEACHING OF GEOGRAPHY (3)  
Prerequisite: 20 credits in geography. Source materials and methods of geographic instruction.
- 470 POLITICAL GEOGRAPHY (5)  
Prerequisite: Geog 201 or permission. Spatial analysis of political phenomena; problems of territorial organization, boundaries, resource management; current problem regions.
- 480 THEORETICAL AND APPLIED GEOGRAPHY (4)  
Prerequisite: 20 credits in geography. Seminars in topics such as location theory, land use planning, population, regional analysis.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 500 SPECIAL PROBLEMS IN GEOGRAPHY (2-5)  
Prerequisites: graduate standing and permission of instructor. Advanced individual projects under supervision.
- 501 SEMINAR IN HISTORY AND PHILOSOPHY OF GEOGRAPHY (4)  
The evolution of geographic concepts and methodology with emphasis on contemporary geographic philosophy and current literature in the field.
- 510 TECHNIQUES IN GEOGRAPHIC RESEARCH (5)  
Application of bibliographic, cartographic, statistical, and field techniques in geographic investigation.
- 520 SEMINAR IN REGIONAL GEOGRAPHY (5)  
Methods of regional analysis applied in the detailed study of a world region.
- 521 SEMINAR IN PHYSICAL GEOGRAPHY (5)  
Advanced topics in physical geography; may be repeated for credit.
- 521a General Physical  
521b Biogeography  
521c Climatology  
521d Landforms  
521e Soils  
521f Water
- 522 SEMINAR IN CULTURAL GEOGRAPHY (5)  
Advanced topics in cultural geography; may be repeated for credit.
- 522a General Cultural  
522b Social  
522c Economic  
522d Historical  
522e Political  
522f Urban
- 550 GEOGRAPHY IN THE SOCIAL SCIENCES (2)  
Geographic concepts and techniques in the social sciences, with particular attention to the place of geography in social studies education.
- 551 GEOGRAPHY IN THE NATURAL SCIENCES (2)  
Geographic concepts and techniques in the biological sciences and earth science, with emphasis on geography in public school science curricula.
- 552 PERSPECTIVES IN GEOGRAPHIC EDUCATION (1)  
Prerequisite: Geog 460 or permission. Current trends in geographic instruction at all educational levels.
- 560 PROBLEMS IN SYSTEMATIC GEOGRAPHY (5)  
Prerequisites: Geog 510 and 521 or 522. Directed research on a selected topic in physical or cultural geography.
- 590 THESIS (5-9)  
Prerequisite: advancement to candidacy for the master's degree and appointment of thesis adviser.

# GEOLOGY

*Professors:* Easterbrook (Chairman), Ellis, Ross, Swineford.

*Associate Professors:* Beck, Brown, Christman, Rahm, Schwartz.

*Assistant Professors:* Babcock, Pevear.

*Lecturer:* Manley.

## BACHELOR OF ARTS IN EDUCATION

The Geology Department recommends for teaching competency those students who have satisfactorily completed requirements for the bachelor's degree in education with an earth science major or a geology minor combined with a major in one of the other physical or biological sciences.

*Major—Earth Science*                      Elementary    45 credits

- Geology 211, 212, 310, 311 (or 305 and 306)
- Geography 203, 331; Physics 105, 131
- Electives under departmental advisement from Geology 214, 316, 317, 319, 340, 390, 399, 400, 410, 412, 413, 414, 416, 430, 440; Geography 353, 431, one from Geog 421, 422 or 423; Physics 205, 321; Biology 406

*Major—Earth Science*                      Secondary    45 credits

- Geology 211, 212, 305, 306, 310, 390
- Geography 331; Physics 105, 131
- Electives from Geology 214, 316, 317, 319, 340, 399, 400, 406, 410, 412, 413, 414, 416, 418, 420, 426, 430, 440, 460; Geography 203, 353, 431, one from 421, 422 or 423; Physics 205, 321

This major must be accompanied by a minor in physical science, chemistry, physics or biology; exceptions must be approved by the major department.

*Minor—Geology*

25 credits

- Geology 211, 212
- Electives under departmental advisement

## BACHELOR OF SCIENCE DEGREE

*Major Concentration*

110 credits

(Satisfies both the major and minor)

This program is recommended for students who are intending to enroll in a graduate program upon completion of degree.

- Geology 211, 212, 305, 306, 310, 316, 317, 399, 410, 416, 418, 420
- 6 credits under advisement from Geology 214, 300, 319, 340, 360, 370, 400, 406, 413, 414, 416, 423, 424, 425, 426, 430, 436, 440, 444, 446, 452, 453, 454, 455, 460
- Supporting courses: Chem 121, 122, 123, 127, 128; Physics 231, 232, 233 (or 131, 132, 133); Math 121, 122, 222 (or 121, 220, 240; Computer Science 270)
- 5 to 8 credits from Chemistry 251, 333, 361, 362, 363, 383; Physics 371, 381, 382; Math 223, 240, 301, 331, Computer Science 110, Biology 240, 301, Botany 352

Students concentrating in biostratigraphy or paleontology may be allowed substitutions in biology under advisement.

Students preparing for graduate work are advised to complete one year of a foreign language.

**Geophysics Major Concentration** 110 credits

Satisfies both the major and the minor for the Bachelor of Science degree.

- Geology 211, 212, 305, 306, 317, 410, 452
- Two courses from Geol 453, 454, 455
- Math 121, 122, 222, 223, 301, 331, 332; Computer Science 210
- Physics 231, 232, 233, 381, 382
- Chemistry 121, 122, 123
- Credits from geology, physics and mathematics selected under advisement to total 110

For advisement in this concentration, consult the departments of geology or physics.

**Physical Geochemistry Major Concentration** 110 credits

Satisfies both the major and the minor for the Bachelor of Science degree.

- Geology 211, 212, 305, 306, 317, 418, 420, 444, 460; one of 423, 424, 425
- Chemistry 121, 122, 123, 127, 128, 333, 361, 362, 363
- Math 121, 122, 222
- Physics 231, 232, 233
- 8 credits under advisement in geology, chemistry, mathematics and computer science

**COMBINED MAJOR – GEOLOGY****AND MATHEMATICS****Major Concentration** 110 credits

Satisfies both the major and minor for the Bachelor of Science degree.

- Geology 211, 212, 305, 306, 317, 370, 410, 452
- Math 121, 122, 201, 202, 222, 223, 331, 335, 341, 342, 375, 435; Computer Science 270
- Chemistry 121
- Physics 231, 232, 233
- Additional credits under advisement from geology and mathematics to total 110

**BACHELOR OF ARTS DEGREE****Major** 50 credits plus Supporting Courses

(An accompanying minor in one of the sciences or in mathematics is recommended.)

- Geology 211, 212, 305, 306, 310, 316, 317, 399, 418, 420
- 6 credits under advisement from Geology 214, 300, 319, 340, 360, 370, 400, 406, 410, 412, 413, 414, 416, 423, 424, 425, 426, 430, 436, 440, 444, 446, 452, 453, 454, 455, 460
- Supporting courses: Chemistry 121, 122, 123; Physics 131 or 231; Mathematics 121; 16 additional credits under advisement in physics, biology, chemistry or mathematics

**Minor** 25 credits

- Geology 211, 212
- Electives under departmental advisement

**DEPARTMENTAL HONORS**

In addition to the general requirements for all honors students, a geology major who wishes to graduate “with honors” must include Geology 399 and a comprehensive examination in geology.

**GRADUATE STUDY**

For concentrations leading to the Master of Education or the Master of Science degrees, see *Graduate Bulletin*.

## COURSES IN GEOLOGY

- 101 GENERAL GEOLOGY (4)  
Prerequisite: Chem 101 or equivalent. Principles of physical and historical geology for the non-science major, with emphasis on the structure of the earth and origin of landforms. Geology majors and those having had geology in high school should take Geology 211.
- 211 PHYSICAL GEOLOGY (5)  
Prerequisite: high school or college chemistry; open to students with credit in Geol 101 only with permission of department. Origin, composition, and structure of earth. Identification of common rocks and minerals; the evolution of the surface features of continents, and interpretation of landforms from maps.
- 212 HISTORICAL GEOLOGY (4)  
Prerequisite: Geol 211 or permission of department. History of the earth as interpreted from the rocks and the story of the development of its inhabitants; geologic history of North America and the Pacific Northwest.
- 214 ENVIRONMENTAL GEOLOGY (3)  
Prerequisite: Geol 101 or 211. Role of geological processes in the natural environment. Effects of man's alteration of the earth's surface and consumption of natural resources.
- 300 SPECIAL PROJECTS IN GEOLOGY (2-5)  
Prerequisites: 10 credits in geology and permission of department. Special projects under supervision.
- 305 CRYSTALLOGRAPHY AND MINERALOGY (4)  
Prerequisites: Geology 211; Chem 121 (or concurrent). Introduction to crystallography, crystal chemistry, chemical principles fundamental to study of minerals, physical properties of minerals; native elements and sulfides.
- 306 MINERALOGY AND PETROLOGY (5)  
Prerequisite: Geol 305. Identification of igneous, sedimentary, and metamorphic minerals; origin and geologic occurrence of common rocks and minerals.
- 310 GEOMORPHOLOGY (5)  
Prerequisite: Geol 211 or permission of department. Origin and evolution of topographic features by surface processes; analysis of glaciers, streams, wind, waves, ground water, and other agents in development of landforms.
- 311 COMMON ROCKS AND MINERALS (4)  
Prerequisite: Geol 101 or 211, and high school or college chemistry. More detailed work with rocks and minerals than is afforded in Geol 101 or 211; the origin, occurrence, and identification of minerals and rocks.
- 316 PRINCIPLES OF PALEONTOLOGY (5)  
Prerequisites: Geol 212 or permission of department. Life on the earth as revealed by its inhabitants, past and present.
- 317 STRUCTURAL GEOLOGY (5)  
Prerequisites: Geol 211, 212; Math 105 and Physics 131 recommended. Description, classification, and interpretation of earth structures; laboratory solution of structural problems by use of geologic maps.
- 319 ECONOMIC GEOLOGY (4)  
Prerequisite: Geol 306 or 311. Economic minerals and ore deposits, their genesis and occurrence.
- 340 GEOLOGICAL OCEANOGRAPHY (3)  
Prerequisite: Geol 211, Chem 101 or 121 or equivalent. Nature and origin of major structural features within the ocean basins and distribution of recent marine sediments.
- 360 GEOLOGY OF PETROLEUM (3)  
Prerequisite: Geol 212 or permission of instructor. Origin and accumulation of petroleum; methods of locating petroleum resources.
- 370 QUANTITATIVE METHODS IN GEOLOGY (3)  
Prerequisites: Math 121 and 15 credits in geology. Acquisition, processing, and analysis of geologic data. Sampling techniques, computer programs, and statistical analysis.
- 384 EARTH SCIENCE FOR THE INTERMEDIATE SCHOOL (3)  
Prerequisite: Geol 101. Concepts, experiences, and materials from the earth sciences adaptable to the elementary school with emphasis on intermediate grades.
- 390 EARTH SCIENCE FOR THE SECONDARY SCHOOL (3)  
Prerequisites: Geol 211, 212, 306 or 311. Development of methods and materials for teaching earth science, including use of ESCP materials, adaptable to the secondary school.
- 396a,b,c HONORS TUTORIAL (2-5 ea)
- 399 SEMINAR IN GEOLOGICAL LITERATURE (1)  
Prerequisite: 14 credits in geology. Geological reports, papers, and discussion.

- 400 SPECIAL PROJECTS IN GEOLOGY (2-5)  
Prerequisite: permission of department. Special projects under supervision.
- 406 CRYSTALLOGRAPHY AND CRYSTAL CHEMISTRY (3)  
Prerequisite: Geol 306. Crystal structure and crystal chemistry of minerals.
- 410 FIELD GEOLOGY (3-5)  
Prerequisite: Geol 317. Methods of geological field investigations; use of field instruments, and making of geologic maps; supervised geologic investigation of a local area.
- 412 FIELD GEOLOGY FOR TEACHERS (3)  
Prerequisite: Geol 311 or permission of department. The geology of Northwest Washington as observed in the field. Summer only.
- 413 GEOMORPHOLOGY OF WESTERN UNITED STATES (3)  
Prerequisite: Geol 101 or 211. Geological forces and processes that have shaped the landscape of the West; origin of scenic geological features in the national parks.
- 414 GEOLOGY OF WASHINGTON (3-5)  
Prerequisite: Geol 311 or 306 or permission of department. The significant geologic features of Washington State; field studies.
- 416 STRATIGRAPHY AND SEDIMENTATION (5)  
Prerequisite: Geol 316. Analysis of physical and biological characteristics of stratified rock sequences; principles of correlation, determination of geologic age and facies relationships.
- 418 OPTICAL MINERALOGY (5)  
Prerequisite: Geol 306. Optical phenomena as related to mineralogy and identification of minerals from optical properties with the use of the polarizing microscope.
- 420 PETROGRAPHY AND PETROLOGY (5)  
Prerequisite: Geology 418. Origin, occurrence, and classification of igneous, sedimentary, and metamorphic rocks; hand specimen and thin section identification of minerals.
- 423 IGNEOUS PETROGRAPHY AND PETROLOGY (5)  
Prerequisite: Geol 420. Origin, occurrence, and classification of igneous rocks and minerals and use of thin sections in identifying igneous minerals.
- 424 SEDIMENTARY PETROGRAPHY AND PETROLOGY (5)  
Prerequisite: Geol 420. Origin, occurrence, and classification of sedimentary rocks and minerals, and use of thin sections in identifying sedimentary minerals.
- 425 METAMORPHIC PETROGRAPHY AND PETROLOGY (5)  
Prerequisite: Geol 420. Origin, occurrence, and classification of metamorphic rocks and minerals, and use of thin sections in identifying metamorphic minerals.
- 426 MICROPALAEONTOLOGY (4)  
Prerequisite: Geol 316. Structure, phylogeny, and geological distribution of micro-fossils with emphasis on evolution, paleoecological significance, and stratigraphic application.
- 430 MAP AND AERIAL PHOTOGRAPH INTERPRETATION (3)  
Prerequisite: Geol 310. Identification, interpretation of geologic features using topographic maps and aerial photos.
- 436 PALEOECOLOGY (4)  
Prerequisite: Geol 316. Interpretation of fossil organisms from skeletal morphology and associated features; reconstruction of marine ecosystem relations from the study of assemblages of fossils.
- 440 GLACIAL GEOLOGY (4)  
Prerequisite: Geol 310. Processes and phenomena of modern and ancient glaciers; effects of Pleistocene glaciations.
- 444 X-RAY DIFFRACTION (2)  
Prerequisites: Geol 306, Chem 122, 123, and permission of department. Basic analytical techniques with x-ray equipment.
- 446 CLAY MINERALOGY (4)  
Prerequisite: Geol 444. Classification, identification, structure, and genesis of clay minerals.
- 452 INTRODUCTION TO GEOPHYSICS (5)  
Prerequisites: Physics 133 or 233 and Math 122 or 220, Geology 211. Basic elements of geomagnetism, seismology, gravity and heat flow with reference to the internal structure of the earth.
- 453 GEOTECTONICS (3)  
Prerequisite: Geol 452 or permission of department. Crust-mantle interactions, isostasy, continental drift, sea floor spreading, theories of mountain building.

## Geology

- 454 APPLIED GEOPHYSICS (4)  
Prerequisite: Geol 452. Field and laboratory exercises in seismic refraction and reflection, electrical resistivity, gravity and magnetics.
- 455 PALEOMAGNETISM AND ROCK MAGNETISM (5)  
Prerequisites: Geology 452. Origin and interpretation of natural magnetism of rocks; origin of geomagnetic field; application to problems in petrology, structural geology and geodynamics.
- 460 GEOCHEMISTRY (3)  
Prerequisites: Math 122 or 220, Chem 122, 123, Geol 306. Application of principles of physical chemistry to the study of origin of rocks and minerals.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 500 SPECIAL PROJECTS IN EARTH SCIENCE (2-5)  
Prerequisite: permission of instructor. Special projects under supervision.
- 507 COASTAL GEOLOGY (4)  
Prerequisite: Geol 310 or 340. Coastal processes and morphology; waves, tides, and currents; sea level changes, coastal sedimentation; research methods.
- 510 FIELD PROBLEM (2-5)  
Prerequisite: Geol 410 or recognized summer field camp. Field mapping problem and report in geology.
- 511 ADVANCED STUDIES IN PHYSICAL GEOLOGY (3)  
Prerequisite: Geol 420 or permission of department. Independent or class study of recent advances in physical geology.
- 512 ADVANCED STUDIES IN HISTORICAL GEOLOGY (3)  
Prerequisite: Geol 316 or permission of department. Independent or class study of recent advances in historical geology.
- 513 GEOCHEMISTRY OF SOLIDS (3)  
Prerequisite: Geol 306. Internal structure of crystals.
- 514 FLUVIAL GEOMORPHOLOGY (3)  
Prerequisite: Geol 310. Stream processes, origin and evolution of fluvial features.
- 516 PROBLEMS IN BIOSTRATIGRAPHY (3)  
Prerequisite: Geol 316. Advanced work in the biostratigraphy of invertebrates, vertebrates, microfossils or plant fossils.
- 519 GENESIS OF ORE DEPOSITS (5)  
Investigation of the composition, origin, transportation, and deposition of ore deposits; field and laboratory problems.
- 523 IGNEOUS AND METAMORPHIC PETROLOGY AND GEOCHEMISTRY (5)  
Prerequisite: Geol 423 or 425. Petrogenesis of igneous and metamorphic rocks and minerals.
- 524 SEDIMENTARY PETROLOGY AND GEOCHEMISTRY (3)  
Prerequisite: Geol 420. Application of chemical principles to the study and interpretation of sedimentary rocks. Petrogenesis of sedimentary rocks.
- 546 GEOLOGY OF CLAYS (3)  
Prerequisite: Geol 446. Occurrence, distribution and genesis of clays; including weathering and soils, diagenesis and hydrothermal alteration.
- 552 ADVANCED STUDIES IN GEOPHYSICS (4)  
Prerequisite: Geol 453 or 454, or permission of instructor.
- 570 THESIS (3-12)  
Independent research.



# HISTORY

A minimum grade point average in history of 2.5 is required for graduation and certification for teaching competence.

*Major* Junior and Senior High School 60 credits

History credits should be distributed under advisement as follows:

- United States History 3 courses
- European History 2 courses
- Two courses from these areas:
  - East and South Asia
  - Africa and Middle East
  - Western Hemisphere (outside U.S.)
- History 391, 499, Social Studies Education 426 3 courses
- Electives under advisement

Teaching competence will be certified in history.

*Major Concentration* Senior High School  
History and Social Sciences 95 credits

(Meets major and minor requirements)  
50 credits in Major  
25 credits in Minor  
20 credits in Supporting Courses

History credits should be distributed under advisement as follows:

- United States History 3 courses
- European History 2 courses
- Two courses from these areas:
  - East and South Asia
  - Africa and Middle East
  - Western Hemisphere (outside U.S.)
- History 391, 499, Social Studies Education 426 3 courses
- History electives under advisement

*Professors:* Bultmann (Chairman), Boylan, Hiller, Murray, Radke, Schwarz.

*Associate Professors:* DeLorme, Gough, Hitchman, Jackson, Roe, Roley, Schuler, Thomas.

*Assistant Professors:* Dresbeck, Eklund, Helfgott, Horn, Kaplan, Mariz, Ritter, Truschel.

*Instructor:* Davis.

## BACHELOR OF ARTS IN EDUCATION

*The following statements refer to the junior and senior high school major and the junior and senior high school concentrations:*

It is recommended that students in these programs enroll in two courses from History 105, 106, 107 toward fulfillment of the General Education requirement in Humanities. Credit toward the major will be allowed for one course in the sequence if all three courses are taken.

It is recommended that students in these programs enroll in Option II of the General Education non-western requirement.

It is recommended that students in these programs should consider Option II of the General Education economic and political institutions requirement.

Only five credit hours from the U.S. History sequence 203-204 may be counted toward fulfillment of the major or major concentration.

## History

### *Completion of a Minor in Political Science or Geography*

20 credits in supporting courses in the social sciences (geography, economics, sociology/anthropology, political science) to include two survey courses with the remainder concentrated under advisement in one of the two areas surveyed. The supporting courses must be chosen from other than the field selected for the minor.

Teaching competence will be certified in history and the social sciences.

### *Major Concentration* Junior High School History and Social Sciences 96 credits

(Meets major and minor requirements)

50 credits in Major  
25-30 credits in Minor  
20 credits in Supporting Courses  
for those electing the 25-credit Minor

History credits should be distributed under advisement as follows:

- United States History 3 courses
- European History 2 courses
- Two courses from these areas:
  - East and South Asia
  - Africa and Middle East
  - Western Hemisphere  
(outside U.S.)
- History 391, 499, Social Studies Education 426 3 courses
- History electives under advisement

### *Completion of a Minor in Political Science or Geography, or the Extended Minor in English*

20 credits in supporting courses, required of those who elect the political science or geography minor, from the social sciences (geography, economics, sociology/anthropology, political science) to include two survey courses with the remainder concentrated under advisement in one of the two areas surveyed. The supporting

courses must be chosen from other than the field selected for the minor.

Teaching competence will be certified in history and social science for those electing a minor in political science or geography; competence will be certified in history and English (by the respective departments) for those minoring in English.

### *Major* Elementary 45 credits

- History 203, 204
- Two courses from History 425 through History 448 (except 445b)
- One course from 410 through 420 (except 417)
- Electives under advisement

A minimum grade point average in history of 2.5 is required for graduation and certification of teaching competence. Competence will be certified in history.

### *Minor* 2.5 credits

- History 203, 204
- Electives, including one upper division course, under advisement

### *Minor—East Asian Studies*

This may be added to the major for a major concentration. See Interdepartmental Programs for details.

### *Extended Minor* 35 credits

(Alternate minor for teaching competence recommendation)

Credits should be distributed under advisement as follows:

- United States History 3 courses
- European History 2 courses
- History 391
- Electives under advisement



If History 105, 106 and 107 are taken, one course in the sequence may be counted toward the minor.

If history courses are taken to satisfy the General Education non-western requirement, only *one* course may be counted toward the minor.

Only 5 credit hours from the U.S. History sequence 203-204 may be counted toward the minor.

A minimum grade point average in history of 2.5 is required for graduation and certification of teaching competence.

### *Extended Minor* 33-35 credits

For English majors desiring a combined recommendation appropriate for junior high or middle school.

- History 203, 204
- One Modern European course from 425 through 448 (except 445b)
- One course from History 270, 280, 385
- One upper division U.S. history course
- 10 credits in electives under departmental advisement

A minimum grade point average in history of 2.5 is required for graduation and certification of teaching competence in history.

## BACHELOR OF ARTS

### *Major* 70 credits plus Supporting Courses

For purposes of this program history courses are grouped into the following fields:

- United States
- Europe
- East and South Asia
- Africa and Middle East
- Western Hemisphere  
(outside U.S.)

Credits should be distributed as follows:

- Six courses in one of the above fields
- Four courses in a second field
- Three courses in a third field
- History 499
- Electives under advisement

Students planning to pursue graduate study are strongly advised to select a minor from among the following fields: art history, biology, chemistry, economics, foreign languages, geography, mathematics, philosophy, physics, political science, sociology/anthropology.

The minor should be selected under advisement to complement some key aspect of the major program.

It is recommended that majors enroll in two courses from History 105, 106, 107 toward fulfillment of the General Education requirement in humanities. Credit toward the major will be allowed for *one* course in the sequence if all three courses are taken.

It is recommended that students enroll in Option II of the General Education non-western requirement.

Only five credits from U.S. History sequence 203-204 may be counted toward the major.

It is strongly recommended that majors who elect a six-course history concentration in a field where languages other than English predominate take enough language study to become proficient in an appropriate foreign language. Students planning on graduate study in history are cautioned that many graduate schools require foreign language proficiency for admission. Possession of such proficiency is a requirement for departmental honors at graduation for those who elect a six-course history concentration in a field where English is not predominant.

A minimum grade point average in history of 2.5 is required for graduation.

## History

Minor 25 credits

For purposes of this program history courses are grouped into the following fields:

- United States
- Europe
- East and South Asia
- Africa and Middle East
- Western Hemisphere  
(outside U.S.)

Credits should be distributed as follows:

- Three courses in one of the above fields
- Two courses in a second field
- Electives under advisement

If the three courses History 105, 106, 107 are taken, *one* course will be allowed toward fulfillment of the minor requirement.

Only five credits from the United States history sequence 203-204 may be counted toward fulfillment of the minor.

A minimum grade point average in history of 2.5 is required for graduation.

### Minor—East Asian Studies

This may be added to the major for a major concentration. See Interdepartmental Programs for details.

### DEPARTMENTAL HONORS

A history major who wishes to graduate "with honors" must meet the general requirements for all honors students. He should consult the departmental honors adviser regarding additional requirements.

### GRADUATE STUDY

For concentrations in history leading to the Master of Education or Master of Arts degree, see *Graduate Bulletin*.

## COURSES IN HISTORY

Courses in the Department of History cover a wide range of subject areas. For ready reference, courses may be classified as follows:

General Courses—105, 106, 107, 400, 408, 490, 495, 499, 500, 501, 502, 504, 505, 506, 594, 595, 596, 597, 599

Ancient and Medieval—410, 411, 412, 413, 414, 415, 416a,b,c, 418, 420, 511, 512, 520

Modern Europe—333, 336, 337, 342, 346, 347, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 444, 448, 533, 536, 537, 540

United States—203, 204, 360, 361, 365, 366, 367, 368, 371, 375, 391, 445b, 450, 451, 452, 453, 454, 455, 457, 458, 459, 461, 463, 465, 466, 467, 468, 469, 494, 550, 554, 556, 558, 560, 561, 563, 566, 567, 591

Western Hemisphere—270, 471, 473, 571, 573

Afro-Asia—280, 385, 397a, 480, 481, 482, 483, 484, 485, 486, 487a,b, 488, 581, 582, 583, 584

105, 106, 107 HISTORY OF WESTERN CIVILIZATION (4 ea)

Not open to those who have completed or intend to take General Studies 121, 122, 123. Need not be taken in sequence. Human development in the Western world from earliest times to the present; emphasis upon ideas, institutions, forces and movements shaping contemporary life.

203 AMERICAN HISTORY TO 1865 (5)

American history from the European background to the end of the Civil War.

204 AMERICAN HISTORY SINCE 1865 (5)

American history from the end of the Civil War to the present.

270 THE WESTERN HEMISPHERE (5)

Western hemisphere history from European origins to the present.

280 INTRODUCTION TO EAST ASIAN HISTORY (5)

East Asia from 1500 to the present.

333 SURVEY OF MODERN RUSSIAN HISTORY (5)

Developments in Russia since Peter the Great.

- 337 THE BRITISH EMPIRE (5)  
Development of the overseas Empire of Great Britain from the Elizabethan period to the present.
- 342 POLITICAL MOVEMENTS IN EUROPE SINCE 1789 (5)  
Major political movements such as Liberalism, Fascism and Communism and their impact upon European society.
- 346 TECHNOLOGY AND SOCIETY IN EARLY EUROPEAN HISTORY (5)  
Man's efforts to control his environment; the impact of technological change from the fall of Rome to the Industrial Revolution.
- 347 EUROPEAN INTELLECTUAL HISTORY (5)  
Development of the European mind from the seventeenth century to the present.
- 360 AMERICAN ECONOMIC HISTORY (5)  
American economic development from colonial times to the present, with particular emphasis upon later periods.
- 361 BLACK HISTORY IN AMERICA (5)  
The culture and achievement of black Americans.
- 365 GREAT PERSONALITIES IN AMERICAN HISTORY (3)  
Biographical approach based on evaluation of careers of typical leaders in public affairs, the arts and ideas.
- 366 AMERICAN SOCIETY AND THOUGHT: ORIGINS, 1620-1800 (5)  
Social and intellectual development during the colonial and early national periods.
- 367 AMERICAN SOCIETY AND THOUGHT: 1800-1900 (5)  
Transcendentalism, Romanticism, Slavery, the Utopias; intellectual impact of the Civil War, Social Darwinism as trends in American history.
- 368 AMERICAN SOCIETY AND THOUGHT: THE TWENTIETH CENTURY (5)  
Intellectual developments in twentieth century America.
- 371 HISTORY OF AMERICAN TECHNOLOGY (5)  
Major technological and scientific developments in America; influence upon rise of the United States as a world power.
- 375 THE INDIAN IN AMERICAN HISTORY (5)  
Events and persons critical to history of North American Indians; review of interpretations of Indian cultures and history.
- 385 AFRICA (5)  
African history from 16th century to present.
- 391 HISTORY AND GOVERNMENT OF WASHINGTON (3)  
General history of the Pacific Northwest, state development, samples of local history, and state and local government. Required for certification of elementary teachers and secondary school social studies teachers.
- 397a POWER STRUGGLE OVER THE MID-EAST: ROOTS OF THE CURRENT CRISIS (5)  
Clash of the Great Powers over the Mid-East in the 19th and 20th centuries. Offered Winter, 1971.
- 397b AMERICAN WOMAN IN THE TWENTIETH CENTURY (4)  
Prerequisite: History 204 or equivalent, or permission of the instructor. woman's struggle for rights, status and equality in America.
- 400 SPECIAL PROBLEMS (1-5)  
Prerequisite: permission of department.
- 40B WORLD WARS OF THE TWENTIETH CENTURY (5)  
Military analysis of the Great Wars with emphasis on the strategic and tactical considerations which governed their course.
- 410 ANCIENT NEAR EAST (5)  
Prerequisite: History 105 or Gen Stu 121. Genesis of Western civilization; our cultural debt to the ancient Mesopotamians, Egyptians, Hittites, Phoenicians, Aramaeans, Hebrews, Assyrians, and Persians.
- 411 GREECE TO 404 B.C. (3)  
Prerequisite: History 105 or Gen Stu 121; open to sophomores with permission of instructor. The Greek world from Minoan-Mycenaean period to end of Peloponnesian War.
- 412 GREECE: 404 TO 220 B.C. (3)  
Prerequisite: History 105 or Gen Stu 121; open to sophomores with permission of instructor. Greece from the end of the Peloponnesian War to the intervention of Rome.

## History

- 413 THE ROMAN REPUBLIC (3)  
Prerequisite: History 105 or Gen Stu 121; open to sophomores with permission of instructor. From the foundation of Rome (753 B.C.) to the end of the Republic.
- 414 THE ROMAN EMPIRE (3)  
Prerequisite: History 105 or Gen Stu 121; open to sophomores with permission of instructor. From the foundation of the Roman Empire to the death of Theodosius (395 A.D.) and the division of the Empire.
- 415 THE BYZANTINE EMPIRE (5)  
Prerequisite: History 105 or Gen Stu 121; open to sophomores with permission of instructor. From the dedication of Constantinople to its fall (330-1453).
- 416a,b,c EUROPE IN THE MIDDLE AGES (5 ea)  
416a The Patristic Age, 284-758  
Impact of Christianity and the barbarian invasions upon European society.  
416b Central Middle Ages, 758-1200  
Change from the feudal world to the nation-state.  
416c Transformation of Europe, 1200-1450  
Age of Scholasticism to the waning of the Middle Ages.
- 418 MEDIEVAL ENGLAND (5)  
Political, social and constitutional history of England from the Roman conquest to War of the Roses.
- 420 THE RENAISSANCE AND THE REFORMATION (5)  
Prerequisite: History 106 or Gen Stu 121; open to sophomores with permission of instructor. Transition from the Medieval to the Modern: Western Europe from the eve of the Hundred Years War to the Treaty of Westphalia (1337-1648).
- 425 MODERN EUROPE, 1648-1789 (5)  
Development of the modern state system and the conflict between monarchs and the growing middle class.
- 426 MODERN EUROPE, 1789-1850 (5)  
Political, economic, social, and diplomatic developments between the French Revolution and mid-19th century.
- 427 MODERN EUROPE, 1850-1914 (5)  
From the age of "Realpolitik" to First World War.
- 428 MODERN EUROPE, 1914-1945 (5)  
Results of World War I, attempts at world organization, the Succession States of Central Europe, World War II.
- 429 EUROPE SINCE 1945 (5)  
Major political, economic, and social developments; origin and operation of the cold war and attempts of Europe to adjust to the changing status of the continent.
- 430 GERMANY BEFORE 1815 (5)  
From the Thirty-Years War to the Congress of Vienna; the rise of Brandenburg-Prussia; European affairs.
- 431 GERMANY SINCE 1815 (5)  
Since the Congress of Vienna; national unification, the German state system; role in international affairs.
- 432 RUSSIA, ORIGINS AND DEVELOPMENT TO 1801 (3)  
Political, social, economic, and diplomatic history from the beginnings to 1801; influences on development of the modern Russian state.
- 433 RUSSIA IN THE NINETEENTH CENTURY (1801-1917) (3)  
Political, social, economic, and diplomatic history from 1801 to the Bolshevik Revolution.
- 434 RUSSIA SINCE 1917 (5)  
The revolutions of 1917 and the Soviet regime.
- 435 DIPLOMATIC HISTORY OF SOVIET RUSSIA (3)  
Theory and practice of Soviet foreign policy since 1917.
- 436 ENGLAND, 1485-1688 (5)  
Political, social, economic, and constitutional history of England from the end of the Wars of the Roses to the Glorious Revolution.
- 437 ENGLAND, 1688-1815 (5)  
Political, social, economic, and diplomatic history of England from the Glorious Revolution to end of Napoleonic Wars; constitutional developments of the period.
- 438 ENGLAND, 1815-1906 (5)  
Political, social, economic, and diplomatic history of England from Waterloo to the Liberal Government of 1906; development of parliamentary institutions.
- 439 ENGLAND SINCE 1906 (5)  
Role of England in the World Wars of the twentieth century; impact of these wars on English politics, economics, and society.
- 440 FRANCE, 1643-1815 (5)  
Political, social, and economic development from Louis XIV through Napoleon.

- 441 FRANCE SINCE 1815 (5)  
Political, social, and economic development of France since Napoleon.
- 444 ITALY, 1789-1922 (5)  
Political, social, and economic development from Napoleon to Mussolini.
- 445b CURRENT TRENDS IN AMERICAN HISTORY (1-5)  
Recent and contemporary writings in American history; revisionist and interpretive historical literature.
- 448 EAST CENTRAL EUROPE TO 1945 (5)  
Emphasis on Poland and the Balkans.
- 450 AMERICAN COLONIAL HISTORY (5)  
The colonial period from the discovery of America to the beginning of the Revolution.
- 451 THE AMERICAN REVOLUTION AND CONFEDERATION PERIOD (5)  
Colonial reaction to British imperial policies within the colonies; military and diplomatic aspects of the Revolutionary War; political, economic, and social aspects of the Confederation period to the adoption of the Constitution.
- 452 THE EARLY NATIONAL PERIOD: FEDERALISTS AND JEFFERSONIANS (5)  
Establishment of the federal government and origin of the party system; partisan conflict over constitutional interpretations; economic issues; foreign policy from the Constitutional Convention to War of 1812.
- 453 THE AGE OF JACKSON (5)  
The United States from 1812 through Mexican War.
- 454 THE CIVIL WAR AND RECONSTRUCTION (5)  
Development of rival nationalisms; problems of war in North and South; efforts toward reunion; new problem in 1877.
- 455 THE UNITED STATES, 1877-1900 (5)  
Social, economic, and political development of the American nation after Reconstruction.
- 457 AMERICA ENTERS THE TWENTIETH CENTURY (5)  
American political, socio-economic, and intellectual currents, 1900-1920.
- 458 THE UNITED STATES: 1920-1941 (5)  
Political, social, and economic trends during the interwar years.
- 459 THE UNITED STATES SINCE 1941 (5)  
Internal and international consequences of the rise of the United States as a world power since World War II.
- 461 DIPLOMATIC HISTORY OF THE UNITED STATES (5)  
Relationship of the United States to world politics from colonial times to the present.
- 463 AMERICAN CONSTITUTIONAL HISTORY (5)  
Prerequisite: History 203 or equivalent. Constitutional development from the Revolutionary era to the present.
- 465 THE AMERICAN WEST (5)  
Westward movement from the Allegheny Mountains to the Pacific Ocean, with special emphasis upon the Far West.
- 466 THE RISE OF THE AMERICAN CITY (5)  
The impact of urbanization on American political, social, and economic history from the late 19th century to the present.
- 467 REFORM AND RADICALISM IN TWENTIETH CENTURY AMERICA (5)  
Origin, leadership, objectives, and impact of major reform and radical movements of the period.
- 468 U.S. AND REGIONAL MARITIME HISTORY (5)  
Naval and maritime development of the nation and Pacific Northwest.
- 469 HISTORY OF AMERICAN BANKING (3)  
Development of banking institutions from Colonial times to present.
- 471 CANADA (5)  
From period of French colonization to present.
- 473 LATIN AMERICA (5)  
From the period of early Spanish and Portuguese colonization to the present.
- 480 CHINA TO 756 A.D. (5)  
Formation of Chinese civilization and early development of the Chinese empire.
- 481 IMPERIAL CHINA, 756-1912 (5)  
China from the mid-T'ang period to fall of the empire.
- 482 REPUBLICAN AND COMMUNIST CHINA (5)  
China from the Revolution of 1912 to the present.

## History

- 483 TRADITIONAL JAPAN (5)  
Development of Japanese civilization to the Meiji Restoration of 1868.
- 484 MODERN JAPAN (5)  
Japan from the Meiji Restoration to the present.
- 485 THE COMMUNIST MOVEMENT IN CHINA (3)  
Prerequisite: History 280. The Communist Movement in China prior to 1949.
- 486 MODERN INDIA (5)  
Modern India in its political, social, economic and cultural development.
- 487a,b THE MIDDLE EAST (5 ea)  
487a The Traditional Middle East  
From the 6th Century to 1800  
487b Middle East 1800 to the Present
- 488 CONTEMPORARY AFRICA SOUTH OF THE SAHARA (3)  
European imperialism in Africa in late nineteenth and twentieth centuries; recent development of African nationalism.
- 490 SENIOR SEMINARS (1-5 ea)  
Prerequisite: permission of instructor.  
490a Latin America  
490b Modern American Society and Thought  
490c American Economic and Business History  
490d Canadian-American Relations  
490e Russia  
490f Twentieth Century America  
490g China  
490h The South in American History  
490j The Age of Jackson  
490k European Socialism  
A maximum of two seminars may be counted toward a history major, or one toward a minor.
- 494 HISTORY OF AMERICAN HISTORIOGRAPHY (4)  
Prerequisite: open only to undergraduates of senior standing or fifth year students who are majors or minors in history, with permission of the instructor. Not applicable for graduate credit towards master's programs in history.
- 495 PHILOSOPHICAL PROBLEMS OF HISTORY (5)  
Problems in the critical and speculative aspects of the philosophy of history: explanation, objectivity and causality in historical inquiry; speculative approaches to "meaning" in history; relationship of history to the social and the physical sciences; open to graduate and undergraduate students in history and other departments with permission of instructor.
- 499 HISTORICAL RESEARCH (3)  
Introduction to historical research methods; analysis of an historical field; an assigned special project.
- 500 CONFERENCE (1-5)  
Special problems in history.
- 501 HISTORIOGRAPHY I (4)  
Selected historiographical studies—Western Europe.
- 502 HISTORIOGRAPHY II (4)  
Selected historiographical studies—United States.
- 504 WRITING SEMINAR: THESIS (4)  
Materials and methodology of historical research.
- 505 WRITING SEMINAR: THESIS (4)  
Prerequisite: History 504. Continuation of research begun in History 504.
- 506 WRITING SEMINAR: THESIS (4)  
Prerequisite: History 505.
- 511-591 GRADUATE SEMINARS (4 ea)  
Prerequisite for each of these seminars: completion of undergraduate major in history or permission of department; History 511, 512, 533, 536, 537, 540, 550, 558, 563, 571, 573, 582, 583, 584 require an appropriate upper division course as prerequisite.  
511 Ancient Greece  
512 Roman History  
520 Renaissance and Reformation  
533 Russian History  
536 English History  
537 British Empire and Commonwealth  
540 Modern European History  
550 Colonial American History  
554 Civil War and Reconstruction  
556 Progressive Movement  
558 Recent American History  
560 American Economic and Business History  
561 American Diplomatic History  
563 American Constitutional History  
566 Early American Society and Thought  
567 Twentieth Century American Thought and Society  
571 Canada  
573 Latin America  
581 Imperial China  
582 Republican and Communist China  
583 Traditional Japan  
584 Modern Japan  
591 The Pacific Northwest
- 594\* SEMINAR IN THE TEACHING OF HISTORY (2)  
Prerequisite: permission of department. Alternative teaching strategies at the community and four-year college levels.

595a,b,c\* PRACTICUM IN COLLEGE TEACHING (2)

Prerequisite: permission of department. Directed classroom teaching at college level.

596a,b,c\* PRACTICUM IN COLLEGE TEACHING (4)

Prerequisite: permission of department. Directed classroom teaching at college level.

\*No more than 4 credits from History 594, 595, 596 allowed toward a degree; these courses do not meet requirement for subject matter seminars.

597q,x SEMINAR IN COMMUNITY COLLEGE TEACHING (2 ea)

597y,z PRACTICUM IN COMMUNITY COLLEGE TEACHING (10 ea)

599a,b SEMINARS IN HISTORICAL RESEARCH AND WRITING (4 ea)

Materials and methodology of historical research.



## HOME ECONOMICS

*Professor:* Ramsland (Chairman).

*Associate Professor:* Roberts.

*Assistant Professors:* Barron, Bieler, Larrabee, Reddick.

*Instructors:* Kest, Peach.

*Lecturers:* Aegerter, Frick, Genne, Stewart.

## BACHELOR OF ARTS IN EDUCATION

*Major Concentration* 70 credits

(Satisfies both major and minor)

- Home Econ 100, 101, 120, 150, 151, 164, 175
- Home Econ 210, 224, 230, 253, 260, 272, 361
- Home Econ 310, 320, 321, 334, 338, 353, 370, 375
- Home Econ 410, 420, 424, 432, 441, 442
- Supporting course: Economics 201

It is recommended that Chemistry 115 be taken in meeting the general education chemistry requirement.

*Major: Child Development and Family Relationships* 45 credits

(To be combined with Elementary Education minor)

*Core Requirements* 27-30 credits + 15-18 C.E.C.

- Home Econ 101 or 175; 120; 150 or 250
- Home Econ 224
- Home Econ 320; 321; 361 or 362
- Home Econ 420; 422; 423; 424

## *Home Economics*

*Elective Requirements* chosen from the following:  
15-18 credits

- Home Econ 100, 164, 166, 175, 210, 230, 250, 334, 338, 350, 351, 362, 370, 425, 443, 470 and others as developed

*Supporting Courses* which may be used as electives:

- Education 331, 431, 433, 360; Art 380; Health Ed 350, 450; Library Science 305, 309; Linguistics 201; Music 350; PE 306, 311, 326; Speech 331, 354, 355, 373, 385; Technology 350

*Minor* 25 credits

- Courses selected under departmental advisement. Preliminary consultation is essential before undertaking a minor.

*Minor: Child Development and Family Relationships* 21 credits

(To be combined with Elementary Education major)

*Core Requirements:* 21 credits

- Home Econ 120, 150
- Home Econ 224
- Home Econ 320
- Home Econ 420, 422, 423, 424

*Elective Requirements* chosen from the following:  
4 credits

- Home Econ 100, 164, 175, 210, 250, 334, 338, 350, 351, 361, 362, 370, 425, 443, 470

*Supporting Courses* which may be used as electives are listed under the Child Development and Family Relationships major above.

## *Teaching Competence*

Recommendation for teaching competence in home economics normally requires completion of the major with a grade average of 2.5 or better.

The vocational certificate is granted upon completing the requirements for the Bachelor of Arts in Education including the above major concentration and supervised teaching in home economics.

## **BACHELOR OF ARTS**

### *Major Concentrations*

70 credits plus Supporting Courses

(These concentrations satisfy both a major and a minor.)

*Common core:* Home Econ 100, 101, 120, 150, 166 or 260, 175, 210, 224, 230, 310, 334, 370, 410

In addition to the common core courses, select one of the following concentrations:

### *General Home Economic Emphasis*

- Home Econ 151, 164, 253, 272, 320 or 321, 338, 375, 424, 430 or 432
- Home economics electives: 16-21 credits
- Supporting courses: Chem 115, Econ 201 plus 35 credits under advisement from art, sociology, psychology, economics, chemistry, biology, technology or philosophy

### *Child Development and Family Relationships Emphasis*

- Home Econ 320, 321, 338, 350, 420, 422, 423, 424, 425, 443
- Home economics electives: 14-17 credits
- Supporting courses: Econ 201, Psych 201 and 351, Soc 201, 366 and 481, plus 14 credits under advisement



*Housing, Equipment and Furnishings Emphasis*

- Home Econ 164, 272, 273, 364, 367, 371, 372, 375, 376, 470, 475, 476
- Home economics electives: 8-11 credits
- Supporting courses: 40 credits under advisement from technology, art, physics, economics, speech, sociology/anthropology, or geography

*Minor 25 credits*

- Courses selected under departmental advisement; prior consultation is essential before undertaking a minor

A one or two year program is planned for students who may wish to transfer or who have special needs for less than a degree program. Consult department for details.

**COURSES IN HOME ECONOMICS**

- 100 INTRODUCTION TO HOME ECONOMICS (1)  
 Restricted to home economics majors or minors or admission by permission of department. Orientation in the five areas of home economics and a review of the field in terms of history, philosophy, professional opportunities.
- 101 DESIGN ORIENTATION (3)  
 Not open to students with credit in Art 101, 102, or 103. Fundamental art principles and design concepts, emphasizing color, pattern, texture, and space.
- 120 THE PRE-SCHOOL CHILD IN THE FAMILY (2)  
 Intellectual, physical, social, and emotional development of the pre-school child, with emphasis upon the relationship of the child to the family.
- 150 HUMAN NUTRITION (3)  
 Prerequisite: general education chemistry requirement or high school biology. Basic nutrition principles and nutritive needs of people, food habits, nutrition education.

- 151 HUMAN NUTRITION LABORATORY (2)  
 Prerequisites: Home Econ 150 and permission of department; general education chemistry requirement recommended. Application of methods of dietary studies, research and laboratory experiences.
- 153 SOCIAL AND CULTURAL ASPECTS OF FOOD (2)  
 Prerequisite: Gen Stu 105. Social and cultural development of people as related to the acceptance and use of food.
- 164 TEXTILES FOR THE CONSUMER (3)  
 Identification and evaluation of textiles for clothing and household purposes.
- 166 CLOTHING DESIGN AND SELECTION (2)  
 Prerequisites: Home Econ 101 or Art 101 or 102 and Home Econ 164 recommended; not open to home economics majors with credit in 260. Selection of clothing from aesthetic and consumer aspects.
- 175 PERSONAL ENVIRONMENTAL DESIGN (2)  
 Prerequisite: Home Econ 101 for home economics majors. Introduction to furniture, decorative arts, architecture and landscaping for the home.
- 210 CONCEPTS IN HOME ECONOMICS (1)  
 Prerequisite: Home Econ 100. Concepts common to the five areas of home economics.
- 224 MARRIAGE AND FAMILY LIVING (2)  
 Prerequisite: Gen Stu 105. Interpersonal relationships in dating, mate selection, and marital interaction.
- 230 DECISION-MAKING IN THE FAMILY (2)  
 Home management concepts applied to decision making in the family.
- 250 NUTRITION: ASPECTS OF HUMAN GROWTH (2)  
 Prerequisites: Home Econ 150. Nutritional needs during pregnancy, lactation, growth, and old age; indices of nutritional status.
- 253 FOODS (3)  
 Prerequisites: Home Econ 150; Home Econ 272 recommended. Basic principles of food preparation and selection; laboratory experience and demonstration.
- 260 CLOTHING SELECTION AND CONSTRUCTION (5)  
 Prerequisites: Home Econ 164, Home Econ 101 or Art 102, and permission of department; open only to home economics majors and minors. Selection of clothing from the aesthetic and consumer aspects; new construction techniques and methods.

## *Home Economics*

- 272 HOUSEHOLD EQUIPMENT I (3)  
Evaluation of household equipment; application to the family's management.
- 273 HOUSEHOLD EQUIPMENT II (2)  
Prerequisite or concurrent: Home Econ 253, 272. Non-electrical and electrical appliances in relation to food preparation and demonstration.
- 300 SPECIAL PROBLEMS IN HOME ECONOMICS (1-5)  
(See Home Econ 400)
- 310 HOME ECONOMICS RESEARCH METHODS (1)  
Prerequisite: Home Econ 210. Analysis of research purposes and methods in the five areas of home economics.
- 320 CHILD DEVELOPMENT (3)  
Prerequisites: Home Econ 120, Gen Stu 105. Development of the child from birth to adolescence from a developmental viewpoint.
- 321 ADOLESCENT DEVELOPMENT (2)  
Prerequisite: Psych 351. Development of the adolescent; implications for guidance in the family and group situations.
- 334 CONSUMER ECONOMICS (2)  
Prerequisites: Gen Stu 105, Econ 201. The consumer in the economic world; his responsibilities and protections. Formerly offered as 338.
- 338 FAMILY FINANCE (3)  
Prerequisites: Home Econ 334, Gen Stu 105, Econ 201. Management of family income and expenditures in the changing family cycle.
- 350 CHILD NUTRITION (2)  
Prerequisite: Home Econ 150, Biol 101. Nutrition for human growth and development; indication of nutritional status; application of principles of nutrition to care and feeding of infants and children.
- 351 FIELD STUDIES IN CHILD NUTRITION (2-5)  
Prerequisites: Home Econ 151, 350, and permission of department. Survey and application of research studies with children; supervised field work with programs in early childhood education, public health and governmental agencies.
- 353 FAMILY MEAL MANAGEMENT (3)  
Prerequisites: Home Econ 150, 253, and permission of department. Concepts of management applied to meal service for the family.
- 361 CLOTHING ANALYSIS (2)  
Prerequisite: Home Econ 260. New developments and techniques applied to methods of teaching clothing.
- 362 FAMILY CLOTHING (2)  
Prerequisite: Home Econ 260 or 361, or permission of department. Selection and construction of clothing for the family.
- 364 TEXTILES FOR HOME FURNISHINGS (3)  
Prerequisite: Home Econ 164 and 175 or 375. Historical and contemporary design of decorative and functional textiles for home furnishing.
- 365 NEW FABRICS AND FINISHES (2)  
Prerequisite: Home Econ 164 recommended. New developments in fabrics and finishes.
- 367 WEAVING DESIGN (3)  
Prerequisites: Home Econ 101 and 164. Weaving taught through the use of a variety of looms and materials.
- 370 HOUSING I (3)  
Prerequisites: Home Econ 101 or Art 102; Home Econ 175; permission of department. Housing for the family; historical, aesthetic and cultural implications.
- 371 HOUSING II (3)  
Prerequisite: Home Econ 370 and 372. Housing for the family; its planning and design.
- 372 ADVANCED HOUSEHOLD EQUIPMENT (3)  
Prerequisites: Home Econ 272, 370; Tech 313 recommended. Factors affecting lighting, heating, ventilation and plumbing.
- 375 HOME FURNISHINGS (3)  
Prerequisites: Home Econ 101 or Art 102; Home Econ 175 and permission of department; Home Econ 164 recommended. Laboratory experiences with selection, arrangement, design of home furnishings.
- 376 HISTORY OF FURNITURE AND DECORATIVE ARTS (3)  
Prerequisites: Home Econ 101 or Art 102, Home Econ 175. Development of furniture and decorative arts from ancient to contemporary times.
- 400 SPECIAL PROBLEMS IN HOME ECONOMICS (1-5)  
Prerequisite: permission of department chairman. Advanced students with a creditable record in home economics may work on a special problem by conference arrangement.

## Home Economics

- 410 SEMINAR IN HOME ECONOMICS (1)  
Prerequisite: Home Econ 310. Current issues.
- 418 DESIGN CENTER RESEARCH PROJECT (3)  
Prerequisite: Tech 214 or Home Econ 101 or permission of department. Directed research in design under the auspices of the Western Design Center. (Also listed as Tech 418.)
- 420 LABORATORY EXPERIENCE WITH THE PRE-SCHOOL CHILD (3)  
Prerequisites: Home Econ 120, Psych 351 and permission of department; Ed 331 recommended; a tuberculosis test required in compliance with state law. Observation and participation in nursery school laboratory.
- 422 NURSERY EDUCATION (3)  
Prerequisite: Educ 431 or permission of department. Development of curriculum for nursery school age children emphasizing experiences that develop language and physical coordination, inquiry and creativity. Also offered as Ed 432.
- 423 ADVANCED CHILD DEVELOPMENT (3)  
Prerequisites: Home Econ 320 and permission of department. Examination and analysis of theories in the areas of child development.
- 424 FAMILY RELATIONSHIPS (3)  
Prerequisite: Home Econ 120 and 224; Soc 351 recommended. Concepts of the family; current issues, family life education.
- 425 FAMILY COUNSELING (3)  
Prerequisites: Home Econ 424; permission of department. Analytical consideration of causes and development of family problems; counseling techniques.
- 430 HOME MANAGEMENT (2)  
Prerequisites: Home Econ 230, senior standing and permission of department. Philosophy and theory of management and decision making in the family from an interdisciplinary standpoint.
- 432 HOME MANAGEMENT LABORATORY (3)  
Prerequisites: Gen Stu 105, Home Econ 353, 230, and permission of department. Application of concepts and principles of home management to group and home living.
- 441 HOME ECONOMICS EDUCATION (3)  
Prerequisites: Psych 371, senior status, and 36 credits in prescribed home economics; to be taken immediately preceding student teaching. Philosophy and curriculum, emphasizing current concepts in home economics programs of the junior and senior high school.
- 442 CURRICULUM IN HOME ECONOMICS EDUCATION (3)  
Prerequisite: Home Econ 441 and student teaching or teaching experience. Development of a functional home economics program for junior and senior high and adult education through analysis and synthesis of concepts with emphasis on courses of study, scope and sequence, department management and planning department facilities.
- 443 ADULT AND PARENT EDUCATION (3)  
Principles and procedures for working with adult groups and individuals.
- 448 EVALUATION IN HOME ECONOMICS (2)  
Prerequisite: Home Econ 441 or equivalent, supervised teaching in home economics or graduate status. Application of current concepts in evaluation to home economics.
- 450 PROBLEMS IN NUTRITION (3)  
Prerequisite: Home Econ 150, Bio1 101; senior status or permission of department. Significant current research in human nutrition.
- 451 RESEARCH PROJECTS IN NUTRITION (2-5)  
Prerequisites: Home Econ 151, 450, general education chemistry requirement; permission of department. Techniques of nutritional research, application to selected problems.
- 455 EXPERIMENTAL FOODS (3)  
Prerequisite: Home Econ 253, general education chemistry requirement, and permission. Application of scientific principles and experimental procedures to food processes.
- 461 CLOTHING AND HUMAN BEHAVIOR (3)  
Implications and significance of clothing in Western society, with special emphasis on stages of life cycle, development of self, and the phenomenon of fashion.
- 470 HOUSING AND SOCIETY (3)  
Prerequisite: Soc 366. The personal environment and its relation to the community.
- 475 ADVANCED HOME FURNISHINGS (3)  
Prerequisites: Home Econ 164, 175, 375, and permission of department. Traditional and contemporary design in home furnishings; advanced planning problems.
- 476 CONTEMPORARY DESIGN IN HOME FURNISHINGS (2)  
Prerequisite: Home Econ 175. American and international influences on contemporary design.

497p CONSUMER EDUCATION IN HOME ECONOMICS (2)

Role of consumer education in home economics curriculum with implications for developing performance objectives for middle, junior and senior high schools.

497q EXPERIMENTAL TEXTILES AND CLOTHING (2)

Prerequisites: home economics teaching experience and permission of department.

497r MATERIALS FOR CONSUMER EDUCATION (3)

Prerequisites: home economics teaching experience and permission of department.

498 SCANDINAVIAN TOUR OF DESIGN AND ART (5)

Prerequisite: permission of department. Summer tour of Norway, Sweden, Finland, and Denmark; study of art, design, architecture, home furnishings, industrial design, arts and crafts.

500 SPECIAL PROBLEMS IN HOME ECONOMICS (1-5)

(See Home Econ 400.)

## MATHEMATICS

*Professors:* Abel, Chaney, Hashisaki, Reay, Rygg, Woll.  
*Associate Professors:* Froderberg (Chairman), Atncosen, Craswell, Duemmel, Gray, F. Hildebrand, J. Hildebrand, Jewett, Kelley, Levin, Sanderson, Witter.  
*Assistant Professors:* Chalice, Hu, Ives, Kauffman, Lindquist, May, Menninga, Read, Webb.  
*Instructor:* Thomas.  
*Lecturer:* Purtill.



The study of college level mathematics should begin with Math 122 for the student who has a command of:

- (a) one and one-half years of algebra
- (b) one year of geometry
- (c) one-half year of trigonometry
- (d) one additional year of work including mathematical logic, sets, and the real number system, equations, inequalities, and functions and their graphs

Math 121 is offered for students needing a knowledge of the topics listed in (d). The student who is deficient in (a) should enroll in Math 100; students deficient in (c) should enroll in Math 105. These courses, if needed, should be completed before enrolling in Math 122.

Transfer students must complete at this institution a minimum of nine upper division credits for a major in mathematics or five upper division credits for a minor.

## BACHELOR OF ARTS IN EDUCATION

*Major* Elementary 45 credits

- Math 121, 122, 222
- Math 281, 481
- Not less than 12 credits numbered 300 or above
- Electives under departmental advisement

*Major* Secondary 45 credits

- Math 122, 222
- Math 201 and 202 or 223 and 301
- Math 483
- Not less than 13-16 credits in approved courses numbered 300 or above

*Minor* 24-30 credits

- Math 122, 222
- Math 201 and 202, or 223 and 301
- Math 483
- Not less than 3 courses numbered 300 or above

### *Combined Major Concentration*

See Chemistry Department section for Mathematics-Chemistry Combination

### *Teaching Competence*

Recommendation for teaching competence normally requires completion of the appropriate major with a minimum grade point average of 2.20.

Qualification for teaching competence for junior high school level mathematics may be obtained as above, or by completing with a minimum grade point average of 2.20, an augmented minor which includes Math 122, 222, 223, 201 and 202, or 301, 241 or 305, 360 or 460, 321 or 401, 483.

## BACHELOR OF ARTS

*Major* 60 credits plus Supporting Courses

- Math 122, 222, 223
- Math 301 or both 201 and 202
- Not less than 20 credits in approved courses numbered 400 or above
- Electives under departmental advisement
- Supporting courses: one of the following completed sequences—
  - Physics 231, 232, 233
  - Econ 201, 202, 301, 302
  - Psych 306, 307, 413
  - Computer Science 310, 322, 312
  - Chem 121 and 122 or 124; 123, 127
- Language competency in French, German or Russian strongly recommended

*Minor* 25 credits

- Math 122, 222, and 223
- Either Math 201 and Math 202 or Math 301
- Electives under departmental advisement

### *Computer Science*

*Major* 64-66 credits plus Supporting Courses

- Computer Science 210, 211, 301, 310, 311, 312, 335, 375, 410, 440
- Math 122, 222, 223, either 201 and 202, or 301
- 12 additional credit hours in 400 level computer science courses, which may include a maximum of 6 credit hours of Computer Science 400
- At least one approved one year sequence in a field other than computer science or the student's minor

## Mathematics

Minor 25 credit hours

(Not available to Mathematics majors)

- Computer Science 210, 301
- Math 122 or 220
- 13 additional credit hours in computer science or mathematics as advised, of which at least 7 must be in computer science

## Combined Majors

The Mathematics Department cooperates with other departments in offering combined (or double) majors for students wishing to achieve considerable depth in both areas. These concentrations satisfy both the major and the minor for an Arts and Sciences degree.

*Economics-Mathematics*—See Economics Department section for details.

*Physics-Mathematics*—See Physics Department section for details.

*Physics-Mathematics Special Honors Concentration*—See Physics Department section for details.

*Geology-Mathematics*—See Geology Department section for details.

*Mathematics-Computer Science*—80 credits plus Supporting Courses (Satisfies both a major and a minor)

- Math 122, 222, 223; either 201 and 202 or 301; 331, 332 or 430, 312, 401, 420
- Computer Science 210, 310, 311, 312, 375, 475, 476
- 18 additional credits in computer science and mathematics as advised
- Supporting courses: Physics 231, 232, 233 or 15 credits as advised in an area related to the major

## DEPARTMENTAL HONORS

### *Arts and Sciences*

In order to graduate with "honors in mathematics," a student must complete Math 331, 401, 402, 403, 424, 425, 426; 18 additional upper division or graduate credits in mathematics as advised by the Honors Committee, at least 12 credits of which must be at the 400 or 500 level; attain a 3.5 grade average in the courses taken for the above, and a 3.0 grade average on all college courses; complete an Arts and Sciences major in mathematics together with supporting courses; complete two non-departmental Honors colloquia; be recommended by the departmental Honors Committee and the Honors Board.

In special cases, with the approval of the departmental Honors Committee, the student may elect to write a senior thesis.

### *Teacher Education*

In order to graduate with "honors in mathematics," a student must complete Math 312, 401, 425, two quarters of geometry, and additional upper division credits in mathematics as advised by the Honors Committee to total 30 credits; attain a 3.5 grade average in the above courses and a 3.0 grade average in all college courses; complete the requirements for a teacher education major in mathematics; complete two non-departmental Honors colloquia; be recommended by the departmental Honors Committee and the Honors Board.

In special cases, with the approval of the departmental Honors Committee, the student may elect to write a senior thesis.

## GRADUATE STUDY

For concentrations in mathematics leading to Master of Education, Master of Arts, or Master of Science degrees, see the *Graduate Bulletin*.

COURSES IN MATHEMATICS

(See also Computer Science courses listed below.)

- 100 ALGEBRA (4)  
Prerequisites: clearance of mathematics entrance test; one year of high school algebra. For students who do not have sufficient preparation for college level mathematics. Credit not allowed for students with 3 years high school mathematics.
- 105 TRIGONOMETRY (3)  
Prerequisites: clearance of mathematics entrance test; one and one-half years high school algebra or Math 100 and one year high school geometry. Angles and angle measurement, logarithms, trigonometric functions, identities, conditional equations, inverse functions, solution of plane triangles, complex numbers.
- 121 INTRODUCTION TO COLLEGE MATHEMATICS (5)  
Prerequisites: clearance of mathematics entrance test; one and one-half years of algebra, one-half year of trigonometry. Mathematical logic, sets, the real number system, equations, inequalities, and functions and their graphs.
- 122 ANALYTICAL GEOMETRY AND CALCULUS (5)  
Prerequisite: Math 121 or equivalent. Coordinate geometry of the plane; limits, the derivative, differentiation, the differential, and elementary applications of differential calculus; introduction to integration.
- 151 INTRODUCTION TO MATHEMATICS (3)  
Prerequisite: clearance of mathematics entrance test. Logic, sets, and the real number system. Not open to students who have credit in Math 121.
- 201, 202 INTRODUCTION TO LINEAR ALGEBRA (3 ea)  
Prerequisite: Math 121 or 220; 201 prerequisite to 202. Vector spaces, subspaces, dependence, independence, bases, linear transformations, matrices.
- 220 INTRODUCTION TO CALCULUS (5)  
Prerequisite: Math 100. An intuitive approach to the integral and differential calculus especially designed for students majoring in biology, economics, psychology, and other social sciences. Not open to students who have credit in Math 122.
- 222, 223 ANALYTIC GEOMETRY AND CALCULUS (5, 4)  
Prerequisite: Math 122; 222 prerequisite to 223. Elementary treatment of coordinate geometry of the plane and solid spaces. Math 222—the integral and integration, the differentiation of transcendental functions, and parametric equations; Math 223—methods of integration, improper integrals, indeterminate forms, infinite series, series expansion of functions, partial differentiation, and multiple integration.
- 240 INTRODUCTION TO STATISTICS (3)  
Prerequisite: Math 100 or equivalent. Statistical reasoning treating the nature of statistics; statistical description; ideas of probability, measurement, sampling distributions, and organization of data.
- 241 INTRODUCTION TO PROBABILITY (3)  
Prerequisite: Math 100 or 121. Introduction to probability with applications.
- 281 THEORY OF ARITHMETIC (4)  
Prerequisite: any one of the courses Math 100, 105, 121, 151; not open to students with credit in Math 301 or 321. Systems of numeration, sets, relations and number systems, and integration of these concepts.
- 301 VECTORS AND MATRIX ALGEBRA (4)  
Prerequisite: Math 223 or permission of instructor. Not open to students who have had Math 202. Linear spaces, subspaces, dimension, linear transformations, matrices of transformations, and determinants.
- 305 NUMBER THEORY (4)  
Prerequisite: Math 222; not open to students who have had Math 401. The properties of integers, Euclid's algorithm, Diophantine equations, congruences, continued fractions and residues.
- 312 MAPPINGS AND CONTINUITY (4)  
Prerequisites: Math 223 and either Math 202 or Math 301. Open and closed sets in the line and plane; sequences; definitions and elementary properties of continuous functions, Bô-Zano-Weierstrass theorem and applications.
- 321 THE ALGEBRAIC FOUNDATION OF MATHEMATICS (4)  
Prerequisite: Math 222; not open to students with credit in 400 level courses. Algebraic systems; the concept of order and completeness; the natural numbers and construction of rational and real numbers.

## Mathematics

- 331 APPLIED ANALYSIS (4)  
Prerequisite: Math 223 and corequisites either Math 202 or 301. Sequences and series, improper integrals, absolute convergence, uniform convergence, power series and Taylor's series, the gamma function, Fourier series and orthogonality, nonlinear differential equations.
- 332 APPLIED ANALYSIS (4)  
Prerequisite: Math 331. General existence theorems, systems of equations, phase space, differential inequalities, linear differential equations and the Laplace transform, the Dirac distribution, series solutions, Legendre functions, Bessel's equation, Green's function.
- 335 Please refer to Computer Science 335.
- 341, 342 STATISTICAL METHODS (4 ea)  
Prerequisites: Math 121, 241, Computer Science 210; 341 prerequisite to 342. Elementary course in statistical methodology with emphasis on point estimates and confidence interval estimation, hypothesis testing, and analysis of variance.
- 360 EUCLIDEAN AND NON-EUCLIDEAN GEOMETRY (3)  
Prerequisites: Math 202, 223; not open to students with credit in 400 level mathematics. Metric development of Euclidean geometry, and consideration of non-Euclidean geometries.
- 375 NUMERICAL METHODS (4)  
Prerequisite: Computer Science 210; Math 223. Elementary discussion of error, solution of nonlinear algebraic equations, polynomial interpolation, least squares approximation, numerical quadrature, Gaussian solution of systems of linear equations; same as Computer Sci 375.
- 381 MATHEMATICS FOR ELEMENTARY TEACHERS (3)  
Prerequisite: one year of teaching or Math 281. Informal geometry; measurement; data collection and organization.
- 396a,b,c HONORS TUTORIAL (2 ea)  
Prerequisite: permission of department.
- 399 MATHEMATICS SEMINAR (1-3)
- 400 SPECIAL PROBLEMS (1-5)  
An opportunity for individual study under departmental supervision.
- 401, 402, 403 INTRODUCTION TO ABSTRACT ALGEBRA I, II, III (4 ea)  
Prerequisites: Math 223 and either 202 or 301, or permission of instructor; each course prerequisite to the next. Vector spaces, linear transformations, matrices and determinants, introduction to algebraic structure, groups, rings, integral domains, fields and field extensions.
- 404 LINEAR ALGEBRA (4)  
Prerequisites: Math 202 or 301, plus junior standing. Vector spaces, subspaces, linear independence, span, bases, dimension, linear transformations, the matrix of a linear transformation with respect to two given bases, rank and nullity of linear transformations, systems of linear equations, determinants, Cramer's rule, inner products, the transpose of a linear transformation, characteristic polynomials, eigenvalues, eigenvectors, reduction of a symmetric linear transformation to diagonal form by means of an orthogonal change of basis.
- 412 METRIC TOPOLOGY (3)  
Prerequisite: Math 312. Metric spaces and metric topology; product metrics; uniform equivalence and homeomorphism; compactness and other topological properties.
- 417 SEMINARS IN SPECIALIZED AREAS  
417a,b Qualitative Theory of Ordinary Differential Equations (3 ea)  
Prerequisite: Math 332 or 426. 417a prerequisite to 417b.  
417c Curriculum Development in Secondary School Mathematics: Course I (UICSM) (9)  
417d Curriculum Development in Secondary Mathematics: Vector Geometry I (UICSM) (9)
- 420, 421 DIFFERENTIAL GEOMETRY (4 ea)  
Prerequisites: Math 202 or 301; 223; 420 prerequisite to 421. Differential geometry of submanifolds of  $E^3$  from the point of view of moving frames; the Frenet formulas; integration of differential forms and Stokes' theorem; curvature; introduction to Riemannian geometry.
- 423 ADVANCED CALCULUS (4)  
Prerequisite: Math 312. Uniform continuity, theory of Riemann integration, uniform convergence.
- 424, 425, 426 MATHEMATICAL ANALYSIS (4 ea)  
Prerequisite: Math 423; corequisite: Math 404; to be taken in sequence. Metric spaces; normed spaces; continuous linear operators on normed spaces; differential and integral calculus of several variables; differential equations including Sturm-Liouville theory and their physical significance.



- 430 APPLIED ANALYSIS (4)  
Prerequisite: Math 331. Line integrals in the plane and Green's theorem; divergence theorem, Stoke's formula, line integrals in space with applications to field theory, fluid flow, heat flow, and hydrodynamics, partial differential equations including the vibrating string, the Dirichlet problem, double Fourier series, solutions by integrals, and elliptic, parabolic and hyperbolic equations.
- 431 INTRODUCTION TO COMPLEX VARIABLES (4)  
Prerequisite: Math 312 or 425 or 331. Differentiation and integration of complex-valued functions; Cauchy integral theorem; calculations of residues.
- 435, 436 ADVANCED MATHEMATICAL PROGRAMMING (4 ea)  
Prerequisites: Math 312, CS 335; 435 prerequisite to 436. Convex programming; duality and Lagrange multipliers; Kuhn-Tucker conditions and gradient methods; introductory dynamic programming; algorithms and applications.
- 441, 442, 443 MATHEMATICAL STATISTICS (4 ea)  
Prerequisites: Math 202 or 301, 312; each course prerequisite to the next. Probability theory; development of distributions; generating functions; averages, moments, regression, correlation, variance, and statistical inference.
- 445 CURRENT TOPICS IN MATHEMATICS  
445a Current Topics in Computer Science (4)  
Prerequisite: Math 325, 202 or 301 and permission of the Summer Institute Director.  
445b Current Topics in Differential Equations (4)  
Prerequisite: Math 325 or permission of instructor.
- 460 MODERN GEOMETRY (4)  
Prerequisite: Math 202 or 301. General geometric structures, topics from affine and projective geometries.
- 461 MODERN GEOMETRY (4)  
Prerequisites: Math 401. Bilinear functions, orthogonal groups, general symmetries.
- 475, 476 NUMERICAL ANALYSIS (4 ea)  
Prerequisites: CS 375; Math 202 or 301, Math 331; 475 prerequisite to 476. Numerical solution of ordinary differential equations, solution of systems of linear equations, calculation of eigenvalues and eigenvectors, numerical solution of partial differential equations. Same as Computer Sci 475, 476.
- 481 MATHEMATICS IN GRADES 1 THROUGH 8 (4)  
Prerequisite: Math 281 or permission of instructor. The teaching of mathematics in terms of objectives and methods of presentation.
- 483 MATHEMATICS IN THE SECONDARY SCHOOL (3)  
Prerequisites: upper division courses in algebra and in geometry. Mathematics content of advanced high school courses from teacher's viewpoint; the major experimental programs.
- 496a,b,c HONORS TUTORIAL (2 ea)  
Prerequisite: permission of department.
- 497j MATHEMATICS FOR TEACHERS, GRADES 1-8 (3)  
Methods for developing important mathematical concepts. Algorithm development, with emphasis on providing for individual learning problems. Special problems in development of materials for individualized instruction or construction of useful models and manipulative materials.
- 497m LINEAR ALGEBRA (4)  
(See Math 404 for description.)
- 499 MATHEMATICAL SEMINAR (1-3)
- 500 SPECIAL PROBLEMS (1-5)  
Prerequisites: advanced standing and permission of instructor.
- 501, 502, 503 ADVANCED ABSTRACT ALGEBRA (3 ea)  
Prerequisite: Math 403 or permission of instructor; to be taken in sequence. Topics selected from theory of fields and Galois theory, theory of rings and ideals, representation theory and groups with operators.
- 505 THEORY OF NUMBERS (5)  
Prerequisite: permission of instructor. Properties of natural numbers, divisibility, Euclidean algorithm, congruences, primitive roots, quadratic residues, and diophantine equations.
- 510, 511 INTRODUCTION TO ALGEBRAIC TOPOLOGY (3 ea)  
Prerequisite: Math 424 or 520; 510 prerequisite to 511. Theory of complexes, homology, co-homology theory, homotopy theory.
- 517, 518, 519 TOPOLOGY (3 ea)  
Prerequisite: Math 426; to be taken in sequence. Topological spaces, metric spaces, convergence, connectedness, compactness, product and quotient spaces, function spaces.
- 520 INTRODUCTION TO ANALYSIS (4)  
Prerequisite: Math 426. Metric spaces, topological space and concepts.

## Mathematics

### 521, 522 ANALYSIS (3 ea)

Prerequisite: Math 520 or equivalent; 521 prerequisite to 522. Measure theory, Lebesgue integration, Fourier series, function spaces.

### 525, 526, 527 THEORY OF FUNCTIONS OF A REAL VARIABLE (3)

Prerequisite: Math 522 or permission of instructor; to be taken in sequence. Topological concepts in analysis; general measure theory; integration in locally compact Hausdorff spaces,  $L_p$  spaces, abstract Hilbert spaces; classical representation theorems; related topics.

### 531, 532, 533 COMPLEX VARIABLES (3 ea)

Prerequisite: Math 426; to be taken in sequence. Complex numbers as a field; function theory including analytic functions; exponential and logarithmic functions; derivatives; linear and bilinear transformations; the complex integral calculus; Cauchy-Goursat Theorem; Cauchy Integral Formula; power series, residues and poles; conformal mappings.

### 550 MATHEMATICAL LOGIC AND SETS (5)

Prerequisite: graduate status in mathematics. Introduction to formal symbolic logic and to set theory with an emphasis on mathematical examples.

### 555 HISTORY OF MATHEMATICS (5)

Prerequisite: permission of Summer Institute Director. Introduction to history of mathematics, with emphasis on evolution of branches of current importance and on mathematicians most prominent in this development.

### 561 MODERN GEOMETRY (4)

Prerequisite: graduate status or permission of instructor. Modern geometry approached from the standpoint of linear algebra and convex sets.

### 570 THESIS (variable credit)

### 580 MATHEMATICS SEMINAR AND SPECIAL PROBLEMS (1-4)

### 581a,b,c RESEARCH DESIGN AND LITERATURE IN MATHEMATICAL LEARNING (2 ea)

Critical examination of research studies; emphasis on research design, the findings, and their implications.

### 582 PROBLEMS OF CONCEPT DEVELOPMENT AND MATHEMATICAL LEARNING (3)

The current state and applicability of topics for cognition, child development, concept attainment, memory, perception, attention, and other human factors important in mathematical learning.

### 583 CURRICULUM DEVELOPMENT IN SCHOOL MATHEMATICS (3)

Underlying assumptions on which programs were generated; curriculum design and modification; problems in individualization of instruction; experience in mathematics media laboratory.

### 590 SEMINAR ON SPECIAL METHODS IN MATHEMATICS EDUCATION (1)

Prerequisite: admission to the Master-Teacher program. The mathematics curriculum in the public schools.

### 598 RESEARCH (variable credit)

### 599 MATHEMATICS SEMINAR (1-3)

### 699 MATHEMATICS SEMINAR (1-3)

Prerequisite: graduate course in the area of the seminar.

## COURSES IN COMPUTER SCIENCE\*

### 110 INTRODUCTION TO PROGRAMMING (3)

Prerequisite: Math 100 or equivalent. Design and construction of computer programs; application of an algorithmic programming language to solve simple numerical and non-numerical problems. Not open to students who have credit in Computer Science 210.

### 210 INTRODUCTION TO COMPUTER SCIENCE I (3)

Prerequisite: Math 122 or 220 or permission. (Primarily intended for computer science majors.) Logical structure of computers; binary arithmetic; machine language; solution of simple problems using a procedure-oriented language (PL/1).

\*The facilities of the Computer Center, including an IBM 360/40 with large scale disk capacity and telecommunications capability, are available to qualified students free of charge for instruction in computer techniques, for research, and for general education in computer applications. Computer Science 110 or 210 provides basic instruction in the use of the computer.

- 211 INTRODUCTION TO COMPUTER SCIENCE II (2)  
Prerequisite: Computer Science 210. Advanced features of a procedure-oriented programming language; numerical and non-numerical projects.
- 301 INTRODUCTION TO DISCRETE STRUCTURES (4)  
Prerequisite: Computer Science 210. Basic algebraic structures; Boolean algebra and propositional logic; elementary graph theory; applications to computer science.
- 310, 311, 312 COMPUTERS AND ASSEMBLER LANGUAGE PROGRAMMING (3 ea)  
Prerequisite: Computer Science 210. Computer structure and system organization. Machine language, instruction execution, addressing techniques and digital representation of data; structure of assemblers; program segmentation and linkage; input/output and interrupts; operating system services; laboratory computer experience.
- 335 INTRODUCTION TO MATHEMATICAL PROGRAMMING (4)  
Prerequisites: Math 202 or 301; Computer Science 210. Linear and quadratic programming; applications to game theory and to allocation and transportation problems.
- 375 NUMERICAL METHODS (4)  
Prerequisites: Computer Science 210, Math 223. Elementary discussion of error, solution of nonlinear algebraic equations, polynomial interpolation, least squares approximation, numerical quadrature, and numerical differentiation. Also offered as Math 375.
- 400 SPECIAL PROBLEMS (1-5)  
An opportunity for individual study under departmental supervision.
- 401 INTRODUCTION TO AUTOMATA THEORY (4)  
Prerequisite: Computer Science 301 or permission. Finite- and infinite-state machines, recursive functions, effective computability, the halting problem and other unsolvable problems.
- 410 PROGRAMMING LANGUAGES (4)  
Prerequisite: Computer Science 301, 312. Introduction to the structure of programming languages; syntax and semantics; properties of algorithmic languages; special purpose languages.
- 420 COMPUTER ORGANIZATION (4)  
Prerequisites: Computer Science 301, 312. Basic digital circuits, Boolean algebra and combinatorial logic, digital arithmetic; input-output facilities, system organization, reliability; features for multiprogramming, multi-processing, and real-time systems; alternate organizations.
- 435, 436 ADVANCED MATHEMATICAL PROGRAMMING (4 ea)  
Please refer to Math 435, 436.
- 440 DATA STRUCTURES (4)  
Prerequisites: Computer Science 301, 312. Basic concepts of data; storage management and operations on structures; searching and sorting; data structures in programming languages.
- 450 COMPILER DESIGN AND IMPLEMENTATION (4)  
Prerequisites: Computer Science 410, 440. Lexical and syntactical analysis; code generation and optimization; implementation of compilers and interpreters.
- 460 OPERATING SYSTEMS (4)  
Prerequisites: Computer Science 420, 440. Batch processing; multi-programming and multi-processing; time-sharing; input-output; storage allocations; file system design and management.
- 475, 476 NUMERICAL ANALYSIS (4 ea)  
Prerequisites: Computer Science 375; Math 202 or 301, Math 331. Numerical solution of ordinary differential equations, solution of systems of linear equations, calculation of eigenvalues and eigenvectors, numerical solution of partial differential equations; also offered as Math 475, 476.
- 497a TOPICS IN COMPUTER SCIENCE (4)  
Prerequisite: permission of the Summer Institute Director. Computer methods for solving equations and systems of equations for solving elementary combinatorial problems, and for solving applied problems from such areas as operations research.
- 497j PROGRAMMING LANGUAGES (4)  
Prerequisites: Computer Science 273 and 372. Introduction to the structure of programming languages; syntax and semantics; properties of algorithmic languages; special purpose languages.
- 497k DATA STRUCTURES (4)  
Prerequisites: Computer Science 273 and 372. Basic concepts of data; storage management and operations on structures; searching and sorting; data structures in programming languages.

# MUSIC

*Professors:* Frank, North, Regier, Schaub.  
*Associate Professors:* Ager (Chairman), Biasini, Cole, Glass, Hamm, LaBounty, Scandrett, Stoner, Walter.  
*Assistant Professors:* McIntyre, Terrey-Smith, Wellman, Zoro.  
*Affiliates:* Baerg, Block, Bochar, Bussard, Davenport, Forbes, Hamstreet, Matthies.

## MUSIC PERFORMANCE

All students majoring in music must be members of a major performance group on their major instrument during each quarter of residence except the quarter in which teacher education students are enrolled in student teaching. Pianists in the Arts and Science program may, under advisement, substitute up to 6 credits in Chamber Music for this requirement.

## APPLIED PERFORMANCE PROFICIENCY

All entering students in applied instrumental or vocal private study will be expected to demonstrate their proficiency before a faculty committee to assist in their proper placement in the program. This placement audition will be arranged for all incoming students during the first week of the quarter in which the student enters the program. All applied private music study is included in the student's regular fees. All music majors (except Elementary) are expected to study privately during each quarter in residence except during the student teaching quarter.

Minimum applied performance proficiency levels required for entrance to private applied music study are as follows:

*PIANO*—Classic, Romantic and Contemporary literature of the difficulty of Bach, *SHORT PRELUDES* and *INVENTIONS*. Clementi, Haydn, Mozart, and Beethoven *SONATINAS*; Bartok, *MIKROKOSMOS*, Books 3 and 4. Major and harmonic minor scales, hands together 4 octaves.

*VOICE*--Two songs of contrasting styles demonstrating potential beauty and body of tone, innate sensitivity to pitch and rhythm.

*ORGAN*—Ability to play, at the piano, a Bach *CHORALE* and a Bach *TWO-PART INVENTION*.

*VIOLIN*—Mazas, *SPECIAL STUDIES*, opus 36, Book 1, edited by Hermann or Saenger; Handel, Corelli, Vivaldi or other sonatas. Solo pieces through 5 positions; scales 2 octaves (major and melodic minor).

*VIOLA*—Handel, Purcell or other sonatas; Telemann Concerto in G major or Vivaldi Concerto in E minor. Scales 2 octaves (major and melodic minor).

*VIOLONCELLO*—Completion of the Lee, *METHOD* Book 1 or Dotzauer *STUDIES*, Book 1 or Gutzmacher, *STUDIES*, Book 1; *SHORT PIECES* or a *SONATA* of the difficulty of Vivaldi or Marcello. Scales through the fourth position.

*DOUBLE BASS*—Smandl, *NEW METHOD FOR THE DOUBLE BASS*, Book 1. Scales through half, first and second positions.

*FLUTE, OBOE, CLARINET, BASSOON, SAXOPHONE, FRENCH HORN, TRUMPET*—Units one and two as described in the outline of the Rubank *ADVANCED METHOD* Vol 1 by Voxman and Gower; major and minor scales through four sharps and four flats.

*TROMBONE*--Units one and two as described in the outline of the Rubank *ADVANCED METHOD FOR TROMBONE AND BARITONE*, Vol 1 by Voxman and Gower. Major and minor scales through four sharps and four flats.

**BARITONE AND EUPHONIUM**—See the requirements for Trombone.

**TUBA**—Units one and two as described in the outline of the Rubank *ADVANCED METHOD FOR TUBA*. Major and minor scales through four sharps and four flats.

**PERCUSSION**—Demonstrate ability on the snare drum and/or timpani, including ability to read at sight percussion parts from Class A High School Band or Orchestra Literature.

### UPPER DIVISION APPLIED MUSIC

Students wishing to take upper division applied music (Music 311-315, 411-415) must have the recommendation of their applied instructor and also perform a satisfactory upper division jury examination. All major programs require some upper division credit. Information concerning repertoire and performance standards may be obtained from individual applied instructors or the Music Department Office.

### THEORY PLACEMENT EXAMINATION—TRANSFERS

A placement examination is required for all incoming transfer music students to determine their correct status in the theory program. This examination will be given to all transfers prior to the opening of the quarter in which they enroll. Transfers will be advised as to time and requirements at final registration. Additional information can be obtained from the Music Department Office.

### CONCERT ATTENDANCE

All music majors and all freshmen enrolled in first year theory courses are required to attend at least six concerts each quarter, with the exception of the quarter spent in supervised teaching, in order to complete their total departmental music program.

### PIANO COMPETENCY

All music majors are required to pass a piano competency examination in order to complete this program. Students who enter as freshmen must take it by the end of their sophomore year. Transfer students should take the examination during their first quarter at Western; they must take it before completing their first full year at this college.

### SCHOLARSHIPS

In addition to general college scholarships, several awards are available from off-campus music organizations. For further information, consult the Music Department.

### BACHELOR OF ARTS

*Major*                      70 credits plus Performance Requirement

- Theory: Music 131, 132, 133, 231, 232, 233, 331, 332, 333
- History: Music 341, 342, 343; Music 443 (one course in the series)
- Conducting: Music 309, 310, or Music 307, 308
- Applied Music: major performing instrument or voice, each quarter of residence, three of which must be in courses numbered 411-415
- Additional study in major applied instrument or voice, or all or part in a secondary instrument or voice, 6 credits
- Music 326 or 327, 3 credits
- Major performing group as stated above for all majors
- Approved Senior Recital
- Concert attendance and piano competency requirements as stated above

## Music

### Minor 25 credits

- Theory: Music 131, 132, 133, 231, 232
- History: one from Music 341, 342, 343, under advisement
- Applied Music: major performing instrument or voice, 4 credits
- Piano competency requirement as stated above for all majors and minors

Note Music 131, 132, 133 are prerequisite to all other non-performance courses in the minor.

## BACHELOR OF ARTS IN EDUCATION

### Major Concentration 64 credits plus Performance Requirement

This Specialist in Music Education concentration satisfies requirements for both a major and a minor.

- Theory: Music 131, 132, 133, 231, 232, 233
- History: Music 341, 342, 343
- Conducting: Music 309, 310, or Music 307, 308
- Music 351
- Music 451, 452 (Elementary emphasis), or
- Music 462, 464 (Secondary emphasis)
- Methods: Music 105, 106, 204, 205, 301, 302 plus two courses selected from Music 107, 206, 207, 303. Those with voice as major instrument, replace Music 105, 106, 107 with equal credits in music electives
- Applied Music: major performing instrument or voice, minimum of 11 credits, with a minimum of 5 credits numbered 311-315 or above
- Major performing group as stated above for all majors
- Concert attendance and piano competency requirements as stated above

### Major Elementary 39 credits plus Performance Requirement

- Theory: Music 131, 132, 133, 231, 232
- History: Music 341, 342, 343
- Education: Music 351 (for Music 350) in Elementary Teaching minor; Music 451
- Methods: Music 105, 106, 107. Those with voice as major instrument, replace Music 105, 106, 107 with equal credits in music electives under advisement
- Applied Music: major performing instrument or voice, minimum 6 credits, with a minimum of 3 credits numbered 311-315 or above
- Major performing group as stated above for all majors
- Concert attendance, piano competency requirements as stated above
- Music 233 recommended as an elective as it is prerequisite to graduate study

### Minor 25 credits

- Theory: Music 131, 132, 133, 231, 232
- History: one from Music 341, 342, 343
- Methods: Music 105
- Applied Music: major performing instrument or voice, 3 credits in courses numbered 211-215 or above
- Piano competency as stated above

Note: Music 131, 132, 133 are prerequisite to all other non-performance courses in the minor.

### Applied Music Challenge

A student transferring without credit in applied music may challenge any level below that on which he is entering as a student (e.g. students entering as juniors could challenge 200 level courses).

### Teaching Competence

Recommendation for teaching competence in music normally requires completion of the major with a grade average of 2.5 or better.

*Supervised Teaching*

Students enrolling in the 64 credit major will complete a 16 credit supervised teaching assignment in secondary or elementary music; those enrolling in the 39 credit elementary major will complete supervised teaching in elementary music and in a general elementary assignment.

**GRADUATE STUDY**

For concentrations in music leading to the Master of Arts and Master of Education degrees, see the *Graduate Bulletin*.

**COURSES IN MUSIC**

101, 102, 103 BEGINNING CLASS PIANO (1 ea)

Prerequisite: open to music majors and minors only; each course prerequisite to the next. Functional techniques for utilizing the piano as a tool for musical study, and preparation for competency examination.

105, 106, 107 CLASS VOICE AND PEDAGOGY (1 ea)

Prerequisite: open to music majors and minors only; each course prerequisite to the next. Tone production, song repertoire, interpretation and pedagogy.

121 WESTWIND CHORUS (1 ea)

Open to all women students who demonstrate ability to sing part-songs.

130 FUNDAMENTALS OF MUSIC (2)

Basic components of music notation; rhythm and melody; major and minor scales, intervals, chords, and keys.

131, 132, 133 MUSICIANSHIP I (4 ea)

Each course prerequisite to the next. Sound sources and the nature of sound. Writing skills and use of the musical symbol: notation. Basic vocabulary of music. Formal, stylistic and historical concepts and principles from music literature: evolution of concepts, technics and processes. The scale and melody, harmony, counterpoint; the score and the concepts of mensuration and instrumentation; the emergence of modality-tonality and resultant 20th century practices. Performance skills: rhythmic, melodic and harmonic drill, invention and dictation, keyboard skills, score reading and score construction; the impact of modern technology and cultural forces on expanding uses of non-traditional technics, sound-sources and formal organization. Implementation through organic combination of three major activities: performance, composition and analysis. Introduction to form and forms.

140 THE ART OF LISTENING TO MUSIC (3)

Non-technical basis for enjoyable listening to music; performance practices relating to symphony orchestras, instrumental ensembles, opera, choral groups, and solo performance.

201, 202, 203 INTERMEDIATE CLASS PIANO (1 ea)

Prerequisite: Music 103; open to music majors and minors only; each course prerequisite to the next; continuation of Music 101, 102, 103. Sonata literature.

204 BRASS TECHNIQUES AND PEDAGOGY (1)

Basic principles and techniques of playing and teaching brass instruments.

205 CLARINET TECHNIQUES AND PEDAGOGY (1)

Basic principles and techniques of playing and teaching clarinet.

206 PERCUSSION TECHNIQUES AND PEDAGOGY (1)

Basic principles and techniques of playing and teaching percussion instruments.

207 WOODWIND TECHNIQUES AND PEDAGOGY (1)

Prerequisite: Music 205 or equivalent. Basic principles and techniques of playing and teaching flute, oboe, and bassoon.

211-215 INDIVIDUAL INSTRUCTION (1 ea)

Prerequisite: Minimum Applied Performance Placement audition (see above); active enrollment in a major performing group. One half hour private lesson per week.

- 211 Organ
- 212 Piano
- 213 Strings
- 214 Band instruments
- 215 Voice

217 BEGINNING GUITAR INSTRUCTION (1)

Fundamentals of playing the guitar. Primary emphasis on chords.

221 COLLEGE SINGERS (1)

Preparation and performance of major choral works. Open to all interested students having the ability to sing mixed voice part-songs.

223 SYMPHONIC BAND (1)

Open to all students with band experience.

229 WORKSHOP BAND (1)

Prerequisite: permission of instructor. Performance and interpretation of contemporary jazz in an ensemble situation; recent developments in the idiom; performance of student compositions and arrangements.

## Music

- 231, 232, 233 MUSICIANSHIP II (3 ea)  
 Each course prerequisite to the next. Sound sources and the nature of sound. Writing skills and use of the musical symbol: notation. Basic vocabulary of music. Formal, stylistic and historical concepts and principles from music literature: evolution of concepts, technics and processes. Performance skills: rhythmic, melodic and harmonic drill, invention and dictation, keyboard skills, score reading and score construction; the impact of modern technology and cultural forces on expanding uses of non-traditional technics, sound-sources and formal organization. Implementation through organic combination of three major activities: performance, composition and analysis. Advanced study of traditional forms and of new musical practices which deny older formal and aesthetic formulae in the making of music.
- 280 ELEMENTARY COMPOSITION (1-2)  
 Prerequisite: permission of instructor. Elementary craft of melodic, harmonic, rhythmic, instrumental and contrapuntal writing; participation in concomitant composition seminars.
- 297c See Music 217
- 301, 302, 303 STRING TECHNIQUE AND PEDAGOGY (1 ea)  
 Each course prerequisite to the next. Principles and techniques of playing and teaching string instruments.
- 307, 308 INSTRUMENTAL CONDUCTING (3 ea)  
 Prerequisites: Music 232 and 236. Music 307 prerequisite to 308. Instrumental conducting techniques, score reading, and interpretative analysis.
- 309, 310 CHORAL CONDUCTING (3 ea)  
 Prerequisites: Music 232 and 236. Music 309 or 308 prerequisite to 310. Choral conducting techniques, score reading, and interpretative analysis.
- 311-315a,b INDIVIDUAL INSTRUCTION (1-2 ea)  
 Prerequisite: upper division examination; active participation in a major performing group. One half hour private instruction per week for "a" courses, one credit; one hour per week for "b" courses, two credits. ("b" courses require permission of area coordinator.) See Upper Division Applied Music statement on page  
 311a,b Organ  
 312a,b Piano  
 313a,b Strings  
 314a,b Band Instruments  
 315a,b Voice
- 321 CONCERT CHOIR (1)  
 Prerequisite: permission of instructor. Selected group experience, vocal ability, reading skill, musicianship, and interest in serious choral music considered for membership.
- 322 COLLEGE SYMPHONY ORCHESTRA (1)  
 Prerequisite: permission of instructor; open to all students who qualify.
- 323 WIND ENSEMBLE (1)  
 Prerequisite: permission of instructor.
- 326 CHAMBER MUSIC (1)  
 Prerequisite: permission of instructor. Participation in small string and wind ensembles; string trio, quartet, brass and woodwind.
- 327 CHAMBER CHOIR (1)  
 Prerequisite: permission of instructor. Trios, quartets, and madrigal groups.
- 330 HARMONIC STRUCTURE AND FORM (3)  
 Traditional harmonic usage emphasizing harmonic analysis and the function of harmony in musical forms.
- 331, 332, 333 COUNTERPOINT (3 ea)  
 Prerequisite: Music 232. Vocal and instrumental counterpoint from the 16th through the 19th centuries in theory and practice.
- 341 HISTORY OF MUSIC TO 1600 (3)  
 Prerequisite: Music 232. Music styles, forms and composers up to 1600; performance of representative composition.
- 342 HISTORY OF MUSIC FROM 1600-1800 (3)  
 Prerequisites: Music 232, 341. Main styles, forms and composers in 17th-18th centuries; performance of representative compositions.
- 343 HISTORY OF MUSIC 1800 TO PRESENT (3)  
 Prerequisites: Music 232, 342. Main styles, forms and composers from 1800 to present; performance of representative compositions.
- 344 MUSIC HISTORY PERSPECTIVES (3)  
 Prerequisite: 343 or equivalent. Music history from the time of the Ancient Greeks to the present day reviewed in terms of historical periods, musical styles, forms and representative composers.
- 350 MUSIC FOR ELEMENTARY TEACHERS (3)  
 For elementary classroom teachers, *not music majors*. The skills of singing, reading, writing, playing, and hearing music; techniques and materials used in the elementary grades.



- 351 **ELEMENTARY MUSIC EDUCATION (3)**  
Prerequisite: Music 232 and music major. Teaching techniques, materials, and organization of the elementary music program; observations and laboratory experience.
- 400 **SPECIAL PROBLEMS (1-5)**  
Individual study under departmental supervision.
- 402 **VOCAL PEDAGOGY (1)**  
Prerequisite: 1 year of private voice study or permission of instructor. Vocal problems and their corrections; suitable collections of repertoire.
- 403 **VOCAL PEDAGOGY (1)**  
Prerequisite: Music 402. Vocal problems and their corrections; suitable collections of repertoire.
- 404 **VOCAL PEDAGOGY (1)**  
Prerequisite: Music 403. Vocal problems and their corrections; suitable collections of repertoire.
- 405 **VOCAL TECHNIQUE AND PEDAGOGY (2)**  
Vocal problems and their corrections; suitable collections of repertoire for young soloists.
- 406 **PRINCIPLES OF PRONUNCIATION FOR VOCALISTS- (2)**  
Principles of pronunciation and diction relative to Italian, French, and German texts in vocal music.
- 411a,b-415a,b **INDIVIDUAL INSTRUCTION (1-2 ea)**  
Prerequisite: upper division examination; active participation in a major performing group. One half hour private instruction per week for "a" courses, one credit; one hour per week for "b" courses, two credits ("b" courses require permission of area coordinator). See Upper Division Applied Music statement on page  
411a,b Organ  
412a,b Piano  
413a,b Strings  
414a,b Band Instruments  
415a,b Voice
- 417a **SYMPHONY ORCHESTRA (1)**  
Prerequisite: permission of instructor. Rehearsal of standard symphonic repertoire leading to a public concert.
- 424 **OPERA PRODUCTION (1)**  
Admission by audition. Preparation of opera scenes and a major musical production offered for public performance.
- 426 **APPLIED CHAMBER MUSIC (2)**  
Open to string, woodwind, and piano performers by permission of instructor. Summers only.
- 431 **ORCHESTRATION (3)**  
Orchestration, with special reference to the needs of the instrumental director.
- 432 **TWENTIETH CENTURY HARMONIC PRACTICE (3)**  
Harmonic techniques since the period of Brahms, Wagner, and Franck; correlated sight singing, dictation, and analysis.
- 433 **LATE 19TH CENTURY MUSICAL STYLES (4)**  
Harmonic and formal materials of prominent composers of the period; e.g., Wagner, Brahms, Strauss, Franck, Tchaikowsky, Scriabin.
- 435, 436 **COMPOSITION (3 ea)**  
Prerequisite: Music 335. Writing pieces in part forms, variation form, and sonata form, for solo instruments, voice, and small ensembles.
- 437 **STAGE BAND ARRANGING (3)**  
Prerequisite: Music 232 or permission of instructor. Scoring and arranging for ensembles in jazz and other contemporary popular idioms.
- 438 **CONTEMPORARY AND FUTURISTIC MUSIC (3)**  
Analysis and compositional techniques employed in current contemporary music practice with emphasis on the implications for future development in the music.
- 440 **COLLEGIUM MUSICUM (1)**  
Study of musical literature and historical performance practices.
- 443 **HISTORY OF MUSICAL MEDIA (4 ea)**  
Prerequisite: Music 343. Development and literature of important musical media from their origin to the present.  
443a Choral Music  
443b Solo Song  
443c Opera  
443d Keyboard Music  
443e Chamber Music  
443f Symphonic Music  
443g Concerto  
443h Symphonic Music in the 20th Century
- 451 **MUSIC LISTENING AND LITERATURE FOR ELEMENTARY SCHOOLS (3)**  
Literature, activities, and teaching techniques; correlation with other classroom studies; out-of-classroom activities and programs.
- 452 **CONTEMPORARY MUSIC TEACHING METHODS FOR ELEMENTARY SCHOOLS (3)**  
Introduction to Kodaly method as used in elementary and middle schools.

## Music

- 453 ADVANCED MUSIC CONCEPTS FOR ELEMENTARY TEACHERS (1-5)  
Techniques, activities, and materials in a program of music development for grades one through six.
- 454 STRING TECHNIQUES AND MATERIALS (2)  
Summers only.
- 455 BRASS AND PERCUSSION TECHNIQUES AND MATERIALS (2)
- 456 WOODWIND TECHNIQUES AND MATERIALS (2)
- 459 COACHING SMALL ENSEMBLES (3)  
Organization, coaching, and repertoire for small vocal and instrumental ensembles of high school students.
- 460 MARCHING BAND TECHNIQUES (3)  
Marching band organization, parade marching, and show routine.
- 462 THE PUBLIC SCHOOL INSTRUMENTAL PROGRAM (3)  
Problems, organization, techniques, and materials of an elementary and secondary program in instrumental music.
- 463 MUSIC IN GENERAL EDUCATION (3)  
Organization, content, literature, and methods of teaching the structure and understanding of music in secondary school humanities courses, music classes, and performance groups.
- 464 THE PUBLIC SCHOOL CHORAL PROGRAM (3)  
Problems, organization, techniques, and materials of the secondary program in choral music.
- 465 GENERAL MUSIC WORKSHOP (2)  
Offered summers only.
- 466 STRING TEACHER WORKSHOP (2)  
Offered summers only.
- 467 BIRCH BAY BAND MUSIC WORKSHOP (2)  
Offered summers only.
- 468 CHORAL MUSIC WORKSHOP (2)  
Offered summers only.
- 500 SPECIAL PROJECTS (1-5)  
Individual study under departmental supervision.
- 501 INSTRUMENTAL CONDUCTING AND REHEARSAL TECHNIQUES (3)  
Advanced work in baton technique, interpretation, score preparation, and rehearsal technique.
- 502 CHORAL CONDUCTING AND LITERATURE (3)  
Techniques in developing and conducting choral groups; score analysis of outstanding choral works; laboratory experience in conducting.
- 503 RESEARCH MATERIALS IN MUSIC (4)  
Sources and availability of music recordings, and literature about music through its entire history; preparation of a bibliography in an area of concentration.
- 504 RESEARCH TECHNIQUES IN MUSIC (5)  
Prerequisite: Music 503. General research methods in music with concentrated study and research techniques related to the thesis area.
- 505 THESIS (6)
- 506 SEMINAR IN CURRENT ISSUES AND TRENDS OF MUSIC EDUCATION (3)  
Curriculum, teaching practices, and trends of public school music.
- 507 INTRODUCTION TO GRADUATE STUDY IN MUSIC (3)  
Documentation, standard references, abstract writing, paraphrasing, annotation and technique of writing about music.
- 511-515 ADVANCED INDIVIDUAL INSTRUCTION - GRADUATE LEVEL (2 ea)  
*Offered for 1 credit only during Summer Session.*  
Prerequisite: permission of department.  
511 Advanced Organ  
512 Advanced Piano  
513 Advanced Strings  
514 Advanced Band Instruments  
515 Advanced Voice
- 516, 517 PERFORMANCE MASTER CLASS (3 ea)  
Study and performance of solo and ensemble literature; musical style, interpretation and technique.
- 531 ARRANGING (3)  
Practical techniques in arranging and composing for large and small ensembles. Summer only.

533 ADVANCED COUNTERPOINT (4)

Prerequisite: Music 333. Writing and analytical study of contrapuntal forms and literature of the 16th to the 18th centuries.

534 COMPOSITION (4)

Prerequisite: Music 436. Composition in the classic forms for solo instruments or small ensembles.

535 COMPOSITION (4)

Prerequisite: Music 436. Composition for solo voice accompanied by piano or small ensembles; composition of choral works both a capella and accompanied.

536 COMPOSITION (4)

Prerequisite: Music 436. Composition for large instrumental groups: band, orchestra, or a combination of these with chorus, voice, or solo instrument.

541 SEMINAR IN THE HISTORY OF MUSIC (5)

Prerequisite: permission of instructor. Detailed study of a particular period or phase of the history of music designed to give students a first-hand acquaintance with one special area of musical literature and with musicological method.

552 SUPERVISION OF ELEMENTARY SCHOOL MUSIC (3)

Advanced work in methods, materials, organization, and supervision of the music program. Summer only.

554 DIRECTED READINGS AND RESEARCH (3)

Seminar discussion of areas of needed research in music education. To be taken concurrently with Educ 501.

555 CURRICULUM FOR PERFORMANCE GROUPS (3)

Content, literature, sequence, teaching techniques, and demonstration used to meet the broad aims of music in general education.



# PHILOSOPHY

*Professor:* Daugert (Chairman).  
*Associate Professors:* Fleetwood, Karason, Montague, Purtillo.  
*Assistant Professors:* Downing, Morrow.

## BACHELOR OF ARTS

*Major* 50 credits

- Philosophy 111 or 113
- Philosophy 102, 202, 220, 303, 310
- Philosophy 304, 306, 407
- One course from Philosophy 305, 307, 308
- Philosophy 404, 410, 420, 425
- Electives under departmental advisement

*Minor* 25 credits

- Philosophy 102, 111 or 113, 202, 220, 303, 310
- Electives under departmental advisement

## TEACHER EDUCATION

*Minor* 25 credits

- Philosophy 102, 111 or 113, 202, 220, 303, 310
- Electives under departmental advisement

## DEPARTMENTAL HONORS

A philosophy major who wishes to graduate "with honors" must meet the general requirements for all honors students. In addition, he must take advanced courses in philosophy beyond the major. He must achieve a grade average of 3.3 in philosophy courses.

## COURSES IN PHILOSOPHY

- 102 INTRODUCTION TO LOGIC (3)  
Introduction to the techniques of formal reasoning. Acceptable general education alternative to Math 151 for students with 3 years high school mathematics.
- 111 INTRODUCTION TO PHILOSOPHY (3)  
Great recurrent philosophical problems and some of the answers which have been developed; reading and discussion of selected writings, up to but not including contemporary philosophy.
- 113 INTRODUCTION TO CONTEMPORARY PHILOSOPHY (3)  
Prerequisite: Phil 102 or 111 recommended. Philosophical problems and answers in the 20th century, excluding existentialism.
- 202 LOGIC FOR PHILOSOPHY (4)  
Prerequisite: Phil 102; intended primarily for philosophy majors and minors. Systems of logic and their application to philosophical problems.
- 210 PHILOSOPHY AND PERSONAL VALUES (3)  
Philosophical and critical exploration of personal values; the literature of personal values.
- 215 INTRODUCTION TO EXISTENTIALISM (3)  
Prerequisites: Phil 111, 113, or permission of instructor. Major philosophers of the existentialist school, philosophical problems and answers as seen by existentialism.
- 220 INTRODUCTION TO THE PROBLEMS OF ETHICS (3)  
Nature of moral problems and judgments; emphasis upon meaning of such concepts as "goodness," "rightness," "evil," "duty," and "happiness."
- 250 PROBLEMS IN THE PHILOSOPHY OF RELIGION (3)  
Definition of religion, existence and nature of God, free will, immortality, and such problems.
- 302 ADVANCED LOGIC (4)  
Further development of the tools and techniques of logic; applications in mathematics, science, and philosophy.
- 303 PHILOSOPHY OF LANGUAGE (3)  
Prerequisite: Phil 202. The nature of symbols; notions of synonymy, meaning, and reference; semantical and syntactical analysis applied to natural and artificial languages.

- 304 HISTORY OF PHILOSOPHY: ANCIENT TO EARLY MIDDLE AGES (4)  
Prerequisite: Phil 102 or 202 and one additional philosophy course, or permission of instructor. Great philosophical thinkers from the early Greeks to the early Middle Ages; special attention to Plato and Aristotle.
- 305 HISTORY OF PHILOSOPHY: MIDDLE AGES TO RENAISSANCE (4)  
Prerequisite: Phil 102 or 202 and one additional philosophy course, or permission of instructor. Great philosophical thinkers from the 12th to the 17th centuries, including St. Thomas Aquinas, St. Bonaventure, Duns Scotus, William of Occam, Roger and Francis Bacon.
- 306 HISTORY OF PHILOSOPHY: RENAISSANCE TO THE AGE OF REASON (4)  
Prerequisite: Phil 102 or 202 and one additional philosophy course, or permission of instructor. Great philosophical thinkers including Descartes and the rationalists, Locke and the empiricists.
- 307 HISTORY OF PHILOSOPHY: THE NINETEENTH AND TWENTIETH CENTURIES (4)  
Prerequisite: Phil 102 or 202 and one additional philosophy course, or permission of instructor. Kantian and post-Kantian philosophy with some attention to other significant movements such as utilitarianism, early existentialism, and pragmatism.
- 308 AMERICAN PHILOSOPHY (3)  
Prerequisite: Phil 102 or 202 and one additional philosophy course, or permission of instructor. Main currents in American philosophical thought from Jonathon Edwards to the present.
- 310 THEORY OF KNOWLEDGE (3)  
Prerequisites: Phil 202 and one course numbered above 200. The attempt to understand the possibility, nature, origins, and limits of knowledge; problems and concepts.
- 330 SOCIAL AND POLITICAL PHILOSOPHY (3)  
Prerequisite: Phil 220 or permission of instructor. Concepts and principles involved in analysis and appraisal of social institutions with attention to natural rights, natural laws, social utility, social function and justice.
- 350 ORIENTAL PHILOSOPHY AND RELIGION (3)  
Major philosophical and religious traditions of the Orient.
- 397a PHILOSOPHY AND FANTASY (3)  
Examination of some philosophical themes in the imaginative writing of C. S. Lewis, J. R. R. Tolkien and others.
- 400 CONFERENCE IN PHILOSOPHY (2-5)  
Prerequisite: permission of instructor, Special problems for individual students.
- 404 SEMINAR IN PHILOSOPHY (3)  
Prerequisite: permission of instructor. Concentration upon the thought of an individual philosopher, a particular problem, or a movement.
- 405 AESTHETICS (3)  
Philosophical study of beauty and of the creation, appreciation, and criticism of works of art.
- 407 CONTEMPORARY PHILOSOPHY (4)  
Prerequisite: permission of instructor. Critical discussion of the "analytic" and "linguistic" trends; such figures as Moore, Wittgenstein, and J. L. Austin.
- 410 METAPHYSICS (3)  
Prerequisite: Phil 202 and one additional course numbered above 200. Philosophical issues surrounding such notions as particular and universal, space, time, existence, substance and attribute; views of contemporary and traditional philosophers.
- 411 PHILOSOPHY OF SCIENCE (3)  
Prerequisite: permission of instructor. Varying theories as to the nature, presuppositions, limitations and inter-relations of the sciences.
- 420 ETHICAL THEORY (3)  
Prerequisite: Phil 220 or permission of instructor. Critical analysis of writings of several major theorists in ethics—ancient, modern, and contemporary—and their treatment of ethical problems.
- 425 PHILOSOPHY OF MIND (3)  
Prerequisite: Phil 202 and one additional course numbered above 200, or permission of instructor. The nature of mind and the meaning of such concepts as intelligence, attention, will, emotion, and feeling and imagination.
- 460 PHILOSOPHY OF HISTORY (3)  
Prerequisite: seven credits in philosophy or permission of instructor. The idea of history; concepts and categories allied to it—process, permanence and change, cause, time.
- 483 SOCIAL CHANGE AND THE MORAL ORDER IN LITERATURE (4)  
Also offered as Eng 483 and Soc 483.
- 515 PHILOSOPHY OF EDUCATION (3)  
Critical analysis of theoretical positions in educational philosophy; emphasis on modern and contemporary discussions of educational theory. Also offered as Ed 515.

# PHYSICAL EDUCATION, HEALTH EDUCATION

## MEN'S DEPARTMENT

*Professor:* Tomaras (Chairman).

*Associate Professors:* Lappenbusch, Long, Lounsberry, Wiseman.

*Assistant Professors:* Bowman, Bryant, Hamilton, Randall.

## WOMEN'S DEPARTMENT

*Professor:* Aitkin (Chairman).

*Associate Professors:* Arnett, Hansen.

*Assistant Professors:* Gutchow, Hamilton, Wiseman.

*Instructors:* Ewing, Gallemore.

*Lecturer:* Amcs.

The departmental programs encompass activity courses as electives; professional study in fields of physical education, health education, and recreational leadership; intramural sports and dance; intercollegiate athletics.

## BACHELOR OF ARTS IN EDUCATION (MEN)

*Major* Secondary 45 credits plus Supporting Courses

- PE 203m, 208m, 209m, 232m, 236m, 238m, 242m, 244m, 245m, 247m, 251m, 256m
- PE 302, 303, 304 (or HE 252), 307, 308m, 401m, 404m, 407, 490
- Health Ed 450
- Supporting courses: HE 350, Zool 348
- Elective under departmental advisement

Students must establish competence in activities listed in the 200 series above before approval is granted for student teaching in physical education.

Successful performance in each activity is also a prerequisite to teaching competence recommendation for certification.

*Major* Elementary 45 credits plus Supporting Courses

- PE 203m, 208n, 211, 238m, 242m, 244m, 245m, 247m, 251m, 256m (Prerequisite to this series is a skill and knowledge test scheduled by the department or completion of a 100 level course in aquatics, basketball, wrestling, soccer, and volleyball)
- PE 302, 307, 313, 326, 402, 403
- Health Ed 252, 350, 450
- Supporting course: Zool 348
- Electives under departmental advisement:

## Major Concentration (Specialist)

70 credits plus Supporting Courses

Specialist in Physical Education and Health Education for grades K-12; satisfies both the major and minor requirement.

- PE 203m, 208m, 209m, 232m, 236m, 238m, 242m, 244m, 245m, 247m, 251m, 256m
- PE 302, 303, 304, 307, 308, 311, 313, 343, 401, 403, 404m, 407, 410m, 490
- Health Ed 350 450
- 8 credits from PE 217, 380m, 381m, 382m, 383m, 384m
- Supporting course: Zoology 348

## Minor—Physical Education 25 credits

- 10 credits from: PE 203m, 208m, 209m, 232m, 236m, 238m, 242m, 244m, 245m, 247m, 251, 256m
- PE 301m, 304 (or HE 252), 307, 308m
- Electives under departmental advisement

**Minor—Athletic Coaching** 25 credits

(This minor is not open to PE majors.)

- PE 301m, 304, 406, 441
- 8 credits from PE 217, 251m, 380m, 381m, 382m, 383m, 384m, 498

**Minor—Health Science** 25 credits

- Health Ed 252, 350, 447, 450
- Home Economics 150
- Zoology 348, 349
- Electives under departmental advisement

**BACHELOR OF ARTS  
IN EDUCATION (WOMEN)**

All students entering the women's physical education majors will take beginning knowledge and skill tests in badminton, basketball, folk and square dance, rhythms, soccer, softball, swimming, tennis and volleyball. Competency above the beginning level must be established before taking courses from the professional sequence. Beginning courses in the above areas cannot be applied to the major and minor requirements.

**Major Secondary** 48 credits plus Supporting Courses

- Professional activities—12 credits selected from PE 203w, 209w, 211, 223w, 232w, 234w, 236w, 241w, 242w, 244w, 250w, 251w, 256w
- Advanced proficiency—4 credits; intercollegiate or performing activities and/or officiating selected from one of the following areas: team sports, individual and dual sports, dance or aquatics
- PE 201w, 202w, 302a, 303a, 307, 401w, 402, 404w, 407, 490
- Health Ed 252
- Supporting courses: Zool 348-349

**Major Elementary** 39 credits plus Supporting Courses

- Professional activities—6 credits from PE 203w, 211, 223w, 244w, 251w, 256w and other activities in the professional sequence
- Advanced proficiency—2 credits in intercollegiate or performing activities selected from one of the following areas: team sports, individual and dual sports, dance, or aquatics
- PE 201w, 202w, 302a, 303a, 307, 311, 313, 326, 402, 403
- Health Ed 252
- Supporting courses: Zool 348-349

**Major—Dance** 40 credits plus Supporting Courses

- Professional activities—8 credits from PE 203w, 209w, 211, 223w, 251w and other selected professional activities
- 4 credits in advanced techniques class, PE 220
- PE 201w, 302a, 307, 313 or 401w
- PE 225, 226, 322, 324, 326, 424, 425
- Supporting courses: Zool 348-349

**Major Concentration—Specialist** 62 credits plus Supporting Courses

For the specialist in elementary and secondary girls' physical education; includes a major and a health science minor.

- Professional activities—12 credits selected from PE 203w, 209w, 211w, 223w, 232w, 234w, 236w, 241w, 242w, 244w, 250w, 251w, 256w
- Advanced proficiency—4 credits in intercollegiate or performing activities and/or officiating selected from one of the following areas: team sports, individual and dual sports, dance or aquatics
- PE 201, 202, 302a, 303a, 307, 311, 313 or 401w, 326, 402, 403, 404w, 407
- Health Ed 252, 350, 447, 450
- Supporting courses: Home Econ 150; Zool 348-349

## *Physical Education*

### *Minor—Physical Education* 27-28 credits

- Professional activities—10 credits selected from PE 203w, 209w, 211, 223w, 232w, 234w, 236w, 241w, 242w, 244w, 250w, 251w, 256w
- Advanced proficiency—2 credits in intercollegiate or performing activities and/or officiating selected from one of the following areas: team sports, individual and dual sports, dance or aquatics
- Select from 201w, 202w, 307 and 404w (secondary) or 311, 313, 403 (elementary)
- Health Ed 252
- Four to six credits selected under advisement

Minors must plan, under departmental advisement, to take additional course work to attain teaching competency.

### *Minor—Dance* 25 credits

- PE 122, 126, 225, 226
- PE 220, 322, 324, 326, 425
- PE 424
- Electives under advisement

### *Minor—Health Science* 25 credits

- Health Ed 252, 350, 447, 450
- Home Econ 150
- Zool 348-349
- Electives under advisement

### *Teaching Competence*

Recommendation for teaching competence for girls' physical education normally requires completion of a major or an augmented minor with a minimum grade average of 2.5. Participation in intramural activities is required of all women majors and minors during four quarters of the first two years.

## **BACHELOR OF ARTS (MEN AND WOMEN)**

### *Major—Dance* 85 credits

- PE 122, 126, 128, 225, 226, 227, 321, 322, 323, 324, 325, 326, 424, 425, 426
- 4 credits in PE 220
- Supporting courses: Zool 348-349; PE 302; Art 190; six credits from Art 193, 194, 195; Music 140; Phil 405; three credits from Phil 111, 113; Soc 201; Psych 201; five credits from Soc 361, 362, 363, 364; Speech 130

### *Minor—Dance* 25 credits

- PE 122, 126, 128, 225, 226, 322, 324, 325, 425, or 426
- Philosophy 405
- 6 credits under departmental advisement

### *Minor—Health Science* 25 credits

- Health Ed 350, 447
- Zool 348-349, Home Econ 150
- 6 credits selected under departmental advisement

### *Major Concentration—Recreation*

See Interdepartmental Programs, page 204, for detailed requirements.

### *Minor—Recreation*

See Interdepartmental Programs, page 204, for detailed requirements.

## **GRADUATE STUDY**

For concentrations in physical education leading to the Master of Education degree, see *Graduate Bulletin*.



## ACTIVITIES COURSES

*Activities courses, with the exception of varsity sports, may not be repeated for credit. Courses marked "m" are for men students only; those marked "w" are for women only.*

*Beginning courses, or equivalent, are prerequisite to intermediate courses, which are in turn prerequisite to advanced courses in any given activity.*

- 101-109 DEVELOPMENTAL (1 ea)
- 101 Adapted Physical Education  
Prerequisite: PE Placement Exam.
- 102 Developmental Physical Education  
Prerequisite: PE Placement Exam.
- 103 Jogging  
(repeatable to a maximum of 3 credits)
- 108m Weight Training  
(repeatable to a maximum of 3 credits)
- 110-119 AQUATICS (1 ea)
- 112 Beginning Swimming  
(For non-swimmers.)
- 113 Intermediate Swimming  
Prerequisite: PE 112 or ability to swim twenty-five yards and support self in deep water.
- 114 Advanced Swimming  
Prerequisite: PE 113 or ability to swim 100 yards with one stroke and to use a variety of other strokes.
- 115 Aquatic Art  
Prerequisite: PE 114 or equivalent.
- 116 Advanced Aquatic Art
- 118 Scuba Diving (2 credits)  
(The student pays cost of basic equipment.)
- 120-129 DANCE (1 ea)
- 120 Beginning Social Dance
- 122 Beginning Folk and Square Dance
- 123 Intermediate Folk and Square Dance
- 125 Modern Dance
- 126 Intermediate Modern Dance
- 128 Beginning Ballet
- 130-139 DUAL SPORTS (1 ea)
- 130 Beginning Handball
- 131 Beginning Squash
- 132 Beginning Badminton
- 133 Intermediate Badminton
- 134 Fencing
- 135 Intermediate Fencing  
Prerequisite: PE 134 or equivalent.
- 136 Beginning Tennis
- 137 Intermediate Tennis
- 138m Beginning Wrestling
- 139 Beginning Racketball  
The student furnishes equipment for PE 130, 131, 136, 137.
- 140-149 TEAM SPORTS (1 ea)
- 141w Field Hockey

- 142m,w Basketball
- 143m,w Softball
- 144m,w Speedball and Soccer
- 145m,w Volleyball
- 148w Lacrosse
- 150-165 INDIVIDUAL SPORTS (1 ea)
- 150 Archery
- 151m,w Gymnastics and Tumbling
- 152 Beginning Bowling  
(Bowling alley fee, \$8.)
- 153 Intermediate Gymnastics  
Prerequisite: PE 151m or w or equivalent.
- 154 Beginning Golf
- 156m,w Track and Field
- 157 Beginning Skiing
- 158 Intermediate Skiing
- 159 Advanced Skiing
- 160 Sailing and Canoeing  
Prerequisite: swimming exemption test.
- 161 Mountain Climbing
- 162 Basic Horsemanship
- 163 English or Western Equitation
- 164 Intermediate Mountain Climbing (2 credits)  
Prerequisite: PE 161 or permission of instructor.
- 165 Bait and Fly Casting
- The student enrolling in 157, 158, 159, 160, 162, 163 pays cost of transportation and individual instruction. Students in 157, 158, 159, 161, 164, 165 also furnish equipment.
- 180-193 INTERCOLLEGIATE SPORTS (1 ea)
- 180m Intercollegiate Football
- 180w Intercollegiate Field Hockey
- 181m,w Intercollegiate Basketball
- 182m Intercollegiate Baseball
- 183m,w Intercollegiate Track and Field
- 184m Intercollegiate Wrestling
- 185m Intercollegiate Golf
- 186m,w Intercollegiate Tennis
- 188m Intercollegiate Swimming
- 189m Intercollegiate Cross Country
- 190m Intercollegiate Crew
- 191w Intercollegiate Gymnastics
- 192w Intercollegiate Volleyball
- 193w Intercollegiate Badminton

## PROFESSIONAL COURSES

- 200 INDIVIDUALIZED STUDY (Sports Conditioning) (1)  
Conference course permit required.
- 201w BIOMECHANICS I (2)  
Prerequisites: physical education major or minor, physical education placement examination. Analysis of prerequisites of efficient movement, including physical qualities of strength, flexibility and endurance, and basic mechanical principles of gravity, equilibrium, force and leverage; basic locomotor movements and calisthenic-type activities.

## Physical Education

### 202w BIOMECHANICS II (2)

Prerequisite: PE 201w. Application of basic mechanical principles to sports, rhythmic and aquatic skills; buoyancy and motion; use of implements; angles of spin and rebound; trajectory of projectiles.

### 203w-256w PROFESSIONAL ACTIVITIES, WOMEN

Required of majors and/or minors in women's physical education. Prerequisite: competency in skills and knowledges as established by proficiency tests given when student enters the major field.

203w Aquatics (1)

209w Social, Folk and Square Dance (2)

223w Modern Dance (1)

Prerequisite: PE 125 or equivalent.

232w Badminton (Intermediate Level) (1)

234w Fencing (1)

236w Tennis (1)

241w Hockey (1)

242w Basketball (1)

244w Soccer—Speedball (1)

245w Volleyball (1)

250w Archery—Golf (1)

251w Gymnastics (Olympic) (1)

256w Track and Field (1)

### 203-256 PROFESSIONAL ACTIVITIES COURSES, MEN

Prerequisites: skill and knowledge test or completion of a 100 level course in the following activities: aquatics, badminton, tennis, basketball, wrestling, soccer, volleyball.

203m Aquatics (1)

Prerequisite: intermediate level swimmer.

208m Weight Training (1)

209m Dance (1)

232m Badminton (1)

236m Tennis (1)

238m Wrestling (1)

242m Basketball (1)

244m Soccer (1)

245m Volleyball (1)

247m Football (1)

251m Gymnastics (2)

256m Track and Field (2)

### 211 EDUCATIONAL GYMNASTICS (1)

Experience in gymnastics using apparatus on a non-competitive basis.

### 216 LIFESAVING AND WATER SAFETY (2)

Prerequisite: advanced level in swimming proficiency test. Instruction leading to qualification for the American Red Cross Lifesaving Certificate.

### 217 WATER SAFETY INSTRUCTORS' COURSE (2)

Prerequisite: current American Red Cross Senior Life-saving Certificate. Stroke analysis and methods of teaching lifesaving and aquatics skills; instruction leading to qualification as an American Red Cross Water Safety Instructor.

### 220 CONTEMPORARY DANCE TECHNIQUE (2)

Prerequisites: PE 125, 223w or permission of instructor. Development and practice of skills to enhance the body as an instrument of dance; emphasis on control, discipline and refinement of movement technique; may be repeated.

### 225 INTRODUCTION TO DANCE (2)

Dance as an art form; its historical background in education; range of vocational opportunities.

### 226 FUNDAMENTALS OF RHYTHM (2)

Prerequisite: PE 125 or equivalent. Inherent factors of rhythm as applied to the forms of nature, art, and movement.

### 227 MOVEMENT NOTATION (3)

Labanotation—a system of reading and notating bodily movements emphasizing the elements of direction, level, leg and arm movements.

### 301m SCIENTIFIC FOUNDATIONS FOR ATHLETIC COACHING (5)

Not open to students with credit in Zool 348, PE 302, 303. Essential elements of human anatomy, kinesiology, and physiology related to athletic coaching.

### 302 KINESIOLOGY (3)

Prerequisite: Zool 348 or equivalent. Important muscles of the body; origin, insertion, and action; principles of human movement; performance analysis of basic locomotor movements, daily living activities, and sports skills.

### 302a KINESIOLOGY (5)

Prerequisite: Zool 348 or equivalent. Important muscles of the body; origin, insertion, and action; principles of human movement; performance analysis of basic locomotor movements, daily living activities, and sports skills; laboratory work included.

### 303 PHYSIOLOGY OF MUSCULAR EXERCISE (3)

Prerequisite: Zool 348. Application of physiological facts to the problems of conditioning; relation to physical activities.

- 303a PHYSIOLOGY OF EXERCISE (4)  
Prerequisites: Zool 348, 349. Nature of neuromuscular activity, circulation and respiration adjustment during exercise, metabolic and environmental aspects, fatigue and training, fitness and health; includes laboratory experiments.
- 304 ATHLETIC INJURIES AND TRAINING (3)  
Prerequisite: Zool 348. Treatment for injuries; procedures for building physical stamina; experience in taping procedures.
- 306a,b PHYSICAL EDUCATION FOR ELEMENTARY SCHOOL (3)  
Prerequisite: Psych 352. Purposes and requirements of the program; developmental aspects of curriculum.  
(a) Emphasis in grades K-3  
(b) Emphasis in grades 4-6  
(ab) General elementary grades K-6
- 307 MOTOR LEARNING (3)  
Prerequisite: 10 credits in PE professional sequence. Neuro-physiological theories of learning, individual differences, retention of skills, transfer of training, reinforcement, visual and kinesthetic perception, motivation; methods of instruction.
- 308m METHODS AND MATERIALS OF PHYSICAL EDUCATION FOR BOYS (2)  
Prerequisite: completion of activities requirements for majors and minors, or permission. Programs, organization and methods of instruction for secondary school physical education.
- 311 MOVEMENT DISCOVERY FOR CHILDREN (3)  
Prerequisite: permission of instructor. Use of movement experiences in child centered education; methods, activities in gymnastics, games and sports, gross motor skills for pre-school through grade six.
- 313 PHYSICAL EDUCATION LABORATORY EXPERIENCE WITH CHILDREN (1-3)  
Prerequisites: PE 306 or 311.
- 321 MUSICAL ACCOMPANIMENT AND MOVEMENT (3)  
Prerequisite: PE 226. Music mediums: instrumental, voice, percussion, electronic; music structures and their relationship to movement and dance.
- 322 ELEMENTARY DANCE COMPOSITION (3)  
Prerequisite: PE 126 and 226. Fundamentals of composition emphasizing theme and development; form or design; time, force and spacial aspects in solo and duet studies.
- 323 ADVANCED DANCE COMPOSITION (3)  
Prerequisite: PE 322. Composition in pre-classic and modern forms.
- 324 THEORY AND PRACTICE OF CONTEMPORARY DANCE (2)  
Prerequisites: PE 125, 126, or equivalent. Backgrounds for various dance styles provided by professional schools of modern dance.
- 325 CONCERT DANCE (1)  
Prerequisite: permission of instructor. Group and individual experience in dance as a theatre art; participation in the dance concert.
- 326 DANCE FOR CHILDREN (3)  
Dance activities for the elementary school-age child; singing games, creative dance, and dramatizations, ball and rope rhythms, simple square and folk dances.
- 341w, 342w, 343w OFFICIATING IN WOMEN'S SPORTS (1 ea)  
Officiating techniques in volleyball, basketball, tennis, track and field.
- 343m OFFICIATING IN TEAM SPORTS (3)  
Principles, techniques and practice of officiating in team sports for men.
- 380m COACHING FOOTBALL (3)  
Theory of football, with methods and materials of organization.
- 381m COACHING BASKETBALL (3)  
Theory of basketball with methods and materials of organization.
- 382m COACHING BASEBALL (2)  
Theory of coaching baseball with methods and materials of organization.
- 383m COACHING TRACK (2)  
Theory of track and field events and organization and administration of a track meet.

## *Physical Education*

### 384m COACHING WRESTLING (2)

Practical and theoretical aspects of teaching wrestling with special consideration to wrestling skills, methodology, class organization, equipment and officiating.

### 400 SPECIAL PROJECTS IN PHYSICAL EDUCATION (2-5)

Prerequisites: senior status and permission of instructor and department chairman. Individual instruction in special projects under supervision.

### 401m SUPERVISED FIELDWORK IN PHYSICAL EDUCATION (1-3)

Prerequisites: professional activity requirements, PE 308. Practical experience in teaching activity classes under supervision. (One credit is given for each activity class; two credits required in major.)

### 401w LABORATORY EXPERIENCES IN SECONDARY SCHOOLS (1-3)

Prerequisite: PE 307. Preparing and presenting materials to activity classes.

### 402 CORRECTIVE PHYSICAL EDUCATION (3)

Prerequisites: Zool 348-349 or equivalent; PE 302. Implications of growth patterns, coordinations and postural deviations relating to the physical education program; conditioning techniques, corrective procedures.

### 403 PHYSICAL EDUCATION PROGRAM FOR THE ELEMENTARY SCHOOL (3)

Prerequisites: Psych 352; PE 313, 326 or permission of instructor. Criteria for selecting activities; selection and maintenance of facilities and equipment; evaluative procedures and techniques; administrative policies.

### 404m ADMINISTRATION OF PHYSICAL EDUCATION IN SCHOOLS (3)

Prerequisite: PE 308m. Organization and administration of the secondary school program for boys: service, intramural, recreational, and athletic.

### 404w ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION FOR SECONDARY SCHOOL GIRLS (3)

Prerequisites: PE 307. Criteria for the selection of activities, the organization of classes, departmental personnel and policies, purchase and care of equipment.

### 406 THE ADMINISTRATION OF ATHLETICS (3)

Prerequisite: senior status or permission of instructor. Organization and administration of policies and procedures for competitive athletic programs with special emphasis on management of contests, financing, care and maintenance of facilities and equipment.

### 407 HISTORY AND PHILOSOPHY OF PHYSICAL EDUCATION (3)

Prerequisite: PE major or minor; senior status. Philosophical and historical considerations, social, cultural and aesthetic aspects of sports and dance.

### 410m INTRAMURAL SPORTS (3)

Problems, planning, and content of intramural sports programs in schools and colleges.

### 410w INTRAMURAL AND INTERSCHOOL PROGRAMS FOR GIRLS (2)

Tournaments, play days, sports days, G.A.A. and leadership activities for secondary schools.

### 424 DANCE PRODUCTION (2)

Lighting, costuming and make-up; formulating, developing, and presenting various types of dance programs.

### 425 HISTORY AND PHILOSOPHY OF THE DANCE TO 1450 (3)

Historical and philosophical development of the dance from primitive man through the late middle ages.

### 426 HISTORY AND PHILOSOPHY OF THE DANCE SINCE 1450 (3)

Historical and philosophical development of the dance from the Renaissance through the contemporary period.

### 441 SOCIAL-PSYCHOLOGICAL ASPECTS OF SPORT AND COACHING (3)

Introduction to the social-psychological aspects of sport with emphasis placed on their application to teaching and coaching.

- 445 CURRENT TRENDS IN PHYSICAL EDUCATION (3-6)
- 445a Physical Education for the Elementary School (3)
- 445b Modern Concepts in Coaching Baseball (3)
- 445c Developmental Physical Education for Children (6)
- 445e Individualized Instruction for Secondary Physical Education (2)  
Prerequisite: teaching experience.
- 445f Coaching Clinic for Women (2)  
Prerequisite: senior or graduate status.
- 445h Workshop in Athletic Coaching and Administration (2)
- 485 HUMAN GROWTH AND MOTOR DEVELOPMENT (3)  
Growth characteristics and sequence of motor development to maturity; implications for motor performance.
- 490 MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION (3)  
Prerequisite: Psych 371 or permission of instructor. Application of measurement theory to physical education; selection and administration of appropriate tests and interpretation of results.
- 491m FIELD EXPERIENCE IN AFTER-SCHOOL ACTIVITIES (3)  
Prerequisites: senior standing and permission of department. Practical experience in local public schools in conducting activity programs.
- 495 PHYSICAL EDUCATION FOR THE MENTALLY RETARDED (4)  
Prerequisite: senior or graduate status. The characteristics and needs of the mentally retarded child as they relate to physical education; adaptation of methods, materials and techniques.
- 498 STRAIGHT LINE PHILOSOPHY (3)  
Administration of human conduct in activities as straight-line enclosures. Not limited to those with athletic experience.
- 499 PHYSICAL FITNESS AND THE PUBLIC SCHOOL (3)  
Prerequisite: senior or graduate status. Organization and development of physical fitness programs in the public schools.
- 500 PROBLEMS IN PHYSICAL EDUCATION (2-5)  
Prerequisite: teaching experience. Controversial issues in the field; the professional problems pertinent to the individual members of the group.
- 501 SURVEY OF PROFESSIONAL LITERATURE (3)  
Prerequisite: teaching experience. Selected research, published books, dissertations and periodicals which have influenced physical education thought and practice.
- 502 DEVELOPMENTAL AND ADAPTED PHYSICAL EDUCATION (3)  
Prerequisites: Zool 348, PE 302 and 402. Development of programs of adapted activities for the low-fitness and handicapped elementary and secondary school student, with emphasis on common postural deviations, screening techniques and adapted activities.
- 503 PHYSICAL EDUCATION EQUIPMENT AND FACILITIES (2)  
Functional design and planning of gymnasiums and other physical education facilities, and the purchase and care of athletic and physical education equipment.
- 504 CURRICULUM IN PHYSICAL EDUCATION (3)  
Prerequisite: teaching experience. Physical education programs based on the needs, interests, abilities of students.
- 506 RESEARCH DESIGN AND TECHNIQUE IN PHYSICAL EDUCATION (5)  
Prerequisite or concurrent: PE 303, Ed 501. Utilization of laboratory equipment and techniques pertinent to research; design of experiments, conduct of laboratory research, evaluation of research reports.
- 507 MOTOR LEARNING: ADVANCED (3)  
Prerequisites: PE 307 or permission of instructor. Factors affecting the acquisition of skill; individual and group differences, retention, transfer of training, motivation in learning motor skills.
- 530 SEMINAR: ADMINISTRATION OF PHYSICAL EDUCATION AND ATHLETICS (3)  
Prerequisite: teaching experience. Administration of school physical education and athletic programs; current problems, plant, personnel, structure and organization, public relations and emergent patterns.
- 531 SEMINAR: COMPARATIVE PHYSICAL EDUCATION (3)  
Prerequisite: PE 407. Physical education systems in major countries; backgrounds, types, aims and present function; comparison with the American system.
- 532 SEMINAR: CURRENT DEVELOPMENTS IN PHYSICAL EDUCATION (3)  
Prerequisite: teaching experience. Developments of current significance in the field of physical education, including health education, athletics, and recreation.
- 533 SEMINAR: CURRICULUM AND SUPERVISION IN ELEMENTARY PHYSICAL EDUCATION (2)  
Prerequisite: permission of instructor. Design and development of curriculum and materials, administrative policies, supervision, facilities and equipment.

## Physical Education

- 534 SEMINAR: SUPERVISION OF INSTRUCTION IN PHYSICAL EDUCATION (3)  
Prerequisite: teaching experience. Fundamentals for supervision of physical education instruction in the public schools; procedures, organization, evaluation of programs.
- 540 SEMINAR: EXERCISE PHYSIOLOGY (3)  
Prerequisite or concurrent: PE 506. Review of research in exercise physiology; topics such as: cardiovascular dynamics, stress, fatigue, neural control of muscular activity and metabolism.
- 541 SEMINAR: SPORT PSYCHOLOGY (3)  
Prerequisite: teaching experience. Application of data from psychology to sport activity, athletics, performance and coaches.
- 542 SEMINAR: SOCIOLOGY OF SPORT (3)  
Prerequisite: teaching experience. Role and nature of sport in society: affluence and sport, urban life and leisure, amateur and professional sport, politics and sport.
- 543 SEMINAR: BIOMECHANICS (3)  
Prerequisite: PE 302. Application of mechanical principles to analysis of motor skills and athletic events.
- 544 SEMINAR: ELECTROMYOGRAPHY IN PHYSICAL EDUCATION RESEARCH (2)  
Prerequisite or concurrent: PE 506. Electromyographic instrumentation and techniques applicable to motor performance analysis.
- 545 SEMINAR: PERCEPTUAL-MOTOR DEVELOPMENT: IMPLICATIONS FOR PROGRAM (3)  
Prerequisite: PE 485. Review of research in perceptual-motor development and application to program in physical education and special education.
- 150 CONSUMER HEALTH (1)  
Analysis, selection, and evaluation of health products and services; appraisal of health information, misconceptions, superstitions; consumer protection agencies.
- 151 SOCIETY AND DRUGS (2)  
Psychopharmacology, classification; use and misuse of drugs; research; public law.
- 152 SOCIETY AND SEX (1)  
Sociological, psychological, and biological aspects of human sexuality.
- 252 FIRST AID (2)  
First aid for common injuries and illnesses based on the American Red Cross Standard and Advanced First Aid courses. The student qualifies for the American Red Cross Certificate.
- 350 CURRENT INFORMATION FOR HEALTH INSTRUCTION (3)  
Topics covered are human sexuality, family life education, drug education, consumer health, chronic, degenerative and behavioral diseases. (Not available to those who have taken H Ed 150, 151.
- 352 THE FIRST AID INSTRUCTOR (1)  
Prerequisite: H Ed 252 or a current advanced American Red Cross First Aid Certificate; instruction leading to qualification for the American Red Cross First Aid Instructor Certificate.
- 447 COMMUNITY HEALTH (3)  
Prerequisite: 10 credits in biology or health education. Analysis of community, national and world health problems; environmental health; government and non-government health agencies.
- 450 HEALTH EDUCATION IN THE PUBLIC SCHOOLS (3)  
Prerequisite: H Ed 350 or equivalent. Basic principles and application of methods in health instruction; curriculum resource materials, school health services.
- 451 FIELD EXPERIENCE IN PUBLIC HEALTH (1-3)  
Prerequisites: H Ed 350, 447, and health science minor. Practicum in public health agencies and programs.
- 497a SEMINAR ON DRUG EDUCATION (2)  
Seminar on drug usage in society, studying effects on the individual, pharmacological, medical, psychological and sociological areas. Review of legal and economic aspects and political-community action possible.
- 500 PROBLEMS IN HEALTH EDUCATION (2-5)  
For the graduate student concerned with a special problem in the field.

## COURSES IN HEALTH EDUCATION

# PHYSICS

*Professors:* McLeod (Chairman), Lindsay, Veit.  
*Associate Professors:* Atneosen, Barrett, Brown, Davidson, Dittrich, Rupaal, Sprague.  
*Assistant Professors:* Maksymowicz, Quigley, Spanel, Tholfsen, Vawter.

## BACHELOR OF ARTS IN EDUCATION

### *Recommendation for Teaching Competency*

Students are certified for academic competency in physics upon completion of the physics minor or equivalent. Consultation with and approval by the department chairman is required.

*Major* Secondary 45 credits plus Supporting Courses

- Physics 231 to meet the general education requirement
- Physics 232, 233, 335 or 355, 381, 382, 398 (one credit)
- Physical Science 492 or Physics 492
- Electives under departmental advisement, 15 credits
- Supporting courses: 15 credits in mathematics including calculus

*Minor* 25 credits plus Supporting Courses

- Physics 231 (or 131) to meet the general education requirement
- Physics 232, 233 (or Physics 132, 133)
- Physics 381
- Physical Science 492 or Physics 492
- Electives, 3 credits (or 6 credits if Physics 131, 132, 133 is taken)
- Supporting courses: 15 credits in mathematics including calculus

## *Major Concentration—Physics-Mathematics*

70 credits

This concentration provides depth leading to recommendation for teaching competence in both areas; it satisfies requirements for both a major and a minor.

- Mathematics 121 and Physics 231 to meet the general education requirement
- 20 credits in physics under departmental advisement
- 20 credits in mathematics under departmental advisement
- 20 additional credits including methods courses in one or both of these fields

## BACHELOR OF ARTS

*Major* 52 credits plus Supporting Courses

- Physics 231 to meet the general education requirement
- Physics 232, 233, 355, 371, 381, 382, 383, 391, 392
- Either Physics 407 or Gen Sci 405
- Upper division electives, 8 credits, recommended are statistical mechanics, mechanics and optics
- Supporting courses: 30 credits in mathematics, including Math 121, 122, 222, 223, 301 (or 201-202), 331, 332

Also recommended: reading knowledge of a foreign language and 10 credits in chemistry.

*Minor* 25 credits plus Supporting Courses

- Physics 231 for general education requirement
- Physics 232, 233
- Physics 371 and either of 355 or 471; or Physics 381 and 382; or Physics 391 and 392
- Electives, 2 credits
- Supporting courses: 18 credits in mathematics including Math 222

## Physics

### Major Concentration—Physics-Mathematics

110 credits

This combined concentration provides depth in both fields and satisfies the requirements for both a major and a minor.

- Math 121 and Physics 231 for general education requirements
- 100 credits in mathematics and physics under advisement

Recommended courses include Physics 232, 233, 371, 381, 382, 383, 391, 392 and other upper division electives; Computer Science 210; Math 222, 223, 301 (or 201, 202), 331, 332, and upper-division electives. Courses will normally be distributed equally between mathematics and physics, depending somewhat on the student's high school background. Ten to fifteen credits in related courses may be included.

### Major Concentration—Physics-Mathematics

#### Honors Program 107 credits plus Supporting Courses

This combined major satisfies requirements for a major and a minor. It is open to superior students; a grade average of 3.0 is required for admission to and continuation in this program. Apply for admission jointly to the departments of mathematics and physics during the second year of college study in lower division calculus and general physics.

- Math 121, 122, 222, 223, 301, 312, 331, 332, 420, 421
- Computer Science 270
- 8 credits from approved 300 and 400 level courses (at least 4 credits in the latter)
- Physics 231, 232, 233, 371, 381, 382, 383, 391
- 15 credits in upper division courses, including Physics 392, 441, 442 or Physics 485, 486, 489
- Supporting courses: 10 credits under advisement

## DEPARTMENTAL HONORS

Physics majors who wish to graduate "with honors" should consult the department chairman for special requirements.

## GRADUATE STUDY

For concentrations in physics and in physical science leading to the Master of Education and the Master of Science degrees, see *Graduate Bulletin*.

## COURSES IN PHYSICS

*Laboratory instruction is included in Physics 131, 132, 133, 155, 231, 232, 233, 235, 255, 312, 335, 355, 381, 382, 401, 402, 403, 435, 455*

### 101 ELEMENTARY PHYSICS (4)

Not available for credit to students with high school physics nor to science majors. Introduction to physical methods through a survey of topics in mechanics, electricity, magnetism, optics, and modern physics; historical and philosophical foundations.

### 102 MODERN PHYSICS FOR NON SCIENTISTS (3)

Prerequisite: Physics 101 and completion of mathematics general education requirement. Selected topics in modern physics using Physics 101 as a foundation; not available for credit to science majors.

### 103 ELEMENTARY ASTRONOMY (4)

Prerequisite: one and one-half years of high school algebra, or Math 100, or permission of instructor. Not open to those who have completed or intend to take Physics 131. Not normally approved as a substitute for 101. A survey of astronomy including the solar system, stellar evolution, galactic structure, and cosmology. Intended for the general student.

### 105 INTRODUCTION TO SOLAR SYSTEM ASTRONOMY (3)

Prerequisite: one and one-half years high school algebra or Math 100. High school physics or chemistry recommended. The real and apparent motion of stars; the solar system's physical characteristics and theories of origin.

### 131 PRINCIPLES OF PHYSICS (4)

Prerequisites: high school algebra and geometry or equivalent; concurrent enrollment in college level algebra recommended. Classical mechanics.

### 132 PRINCIPLES OF PHYSICS (4)

Prerequisite: Physics 131. Electricity and magnetism.



- 133 PRINCIPLES OF PHYSICS (4)  
Prerequisite: Physics 132. Introduction to relativity, quantum theory and nuclear physics.
- 155 ELEMENTARY ELECTRONICS (2)  
Prerequisite: one and one-half years high school algebra or Math 100 or 151, or permission of instructor. A.C. and D.C. circuits, design of rectifiers, amplifiers, and oscillators.
- 201, 202, 203 MATHEMATICAL METHODS IN THE PHYSICAL SCIENCES (2 ea)  
Prerequisite: Math 121 or permission; Physics 201 prerequisite to 202, 203. (Math 122 recommended concurrent with 201.) Application to solution of physical problems; use of differential equations, linear algebra, and matrices; vector integration; elementary computer methods and applications.
- 205 INTRODUCTION TO STELLAR ASTRONOMY (3)  
Prerequisite: one and one-half years high school algebra and 3 credits in college physics. Physical characteristics of stars, nebulae and galaxies studied through inferential methods.
- 231 GENERAL AND ENGINEERING PHYSICS (5)  
Prerequisite or concurrent: Math 222, or permission of instructor. Basic concepts of physics using calculus; particle mechanics.
- 232 GENERAL AND ENGINEERING PHYSICS (5)  
Prerequisite: Physics 231. Rigid body mechanics, kinetic theory and thermodynamics.
- 233 GENERAL AND ENGINEERING PHYSICS (5)  
Prerequisite: Physics 232. Electricity and magnetism.
- 235 INTRODUCTION TO OPTICS (3)  
Prerequisites: Math 100 and 102, or equivalents. Reflection and refraction at plane and spherical surfaces; thin lenses and their aberrations; optical instruments; interference, diffraction at single and multiple slits, diffraction grating, resolving power; production and detection of polarized light; lecture and laboratory.
- 300 SPECIAL PROJECTS OR PROBLEMS (1-2)  
Prerequisites: 15 credits in physics and permission of instructor. Projects or independent study under supervision.
- 311 RADIATION BIOPHYSICS (3)  
Prerequisite: Physics 133 or 233 and Math 121 or permission of instructor. Physical and biological effects of penetrating radiations.
- 321, 322 ATMOSPHERE SCIENCE (3 ea)  
Prerequisites: one year of college physics; Physics 321 prerequisite to 322. The nature and motion of the atmosphere.
- 335 PHYSICAL OPTICS (4)  
Prerequisites: one year college physics and Math 222. Interference; laser light and theory of coherence; interferometers; Fraunhofer and Fresnel diffraction; polarization; laboratory.
- 341 ANALYTICAL MECHANICS (4)  
Prerequisites: Physics 233 and Math 222. Vector treatment of the laws of motion; Lagrange's equations. Offered summers only, recommended for returning physics teachers.
- 355 FUNDAMENTALS OF ELECTRONICS (3)  
Prerequisite: Physics 233 or permission of instructor. A.C. circuit analysis, A.C. bridges, filters, network theorems, vacuum tubes, solid state diodes and transistors, transistor amplifiers; laboratory.
- 356 ELECTRONIC CIRCUITS (3)  
Prerequisites: Math 222, Physics 355 or permission of instructor. Multistage amplifiers, feedback and feedback oscillators, modulation and demodulation; laboratory.
- 361 THERMODYNAMICS (3)  
Prerequisite: Physics 233 and Math 223 or permission of the instructor. Kinetic theory and the laws of thermodynamics.
- 362 STATISTICAL MECHANICS (3)  
Prerequisite: Physics 233 and either Physics 381 or 391. Many body mechanics; Maxwell, Fermi and Bose statistics; applications to metals, astrophysics; photons and phonons.
- 371 ELECTRICITY AND MAGNETISM (4)  
Prerequisites: Physics 233 (or 133) and Math 222. Laws of electrostatics; dielectrics; magnetic fields of steady currents, magnetic induction, induced electromotive forces, magnetic properties of matter; alternating current.
- 381, 382, 383 MODERN PHYSICS (4 ea)  
Prerequisites: Physics 233 (or 133), Math 222; to be taken in sequence. Theory of relativity; basic interactions of elementary particles; quantum properties of waves and particles; atomic models; quantum mechanics applied to atomic structure; multielectron atoms; molecular physics, structure and property of solids; structure, properties, and decay of atomic nuclei; basic nuclear reactions; laboratory.

## Physics

- 391, 392 INTRODUCTION TO QUANTUM MECHANICS (4, 3)  
Prerequisite or concurrent registration: Physics 233 and Math 223; 391 prerequisite to 392. Introduction to quantum mechanics. Physics 391—basic postulates and foundations, conservation laws, solutions of wave equation, wave packets, angular momentum. Physics 392—steady-state perturbation theory, identical particles, time-dependent perturbations, scattering theory, applications.
- 397e PHYSICS AND ENVIRONMENTAL PROBLEMS (3)  
Prerequisite: General Ed Science program. Examination of environmental problems, including nuclear power and weapons production, thermal pollution, radiation hazards, air pollution and atmospheric transport, etc.
- 397f ENVIRONMENTAL MEASUREMENTS LABORATORY (3)  
Prerequisite: permission of department. Instrumental techniques in making laboratory and field measurements and instrument calibration.
- 398 LABORATORY DEVELOPMENT (1 ea quarter)  
Laboratory programs and instructional methods in general physics laboratories. Limited to maximum of three credits.
- 399 SEMINAR IN PHYSICS (1)  
Prerequisites: 25 credits in physics and permission of instructor.
- 400 SPECIAL PROJECT OR PROBLEMS (1-3)  
Prerequisite: permission of instructor. Special projects or independent study under supervision.
- 401, 402 SENIOR LABORATORY (2-3 ea)  
Prerequisites: Physics 371, 381. Advanced experimentation in classical and modern physics.
- 403 SENIOR LABORATORY (3)  
Prerequisite: Physics 382. Advanced experiments in nuclear reaction physics.
- 407 FOUNDATIONS AND PHILOSOPHY OF PHYSICS (3)  
Prerequisite: one year college physics. Development of concepts from the Greek period through the 20th century.
- 431 INTRODUCTION TO SOLID STATE PHYSICS (4)  
Prerequisites: Physics 381, Math 331 (or concurrent). Theoretical and experimental description of mechanical, electrical, and magnetic properties of solids.
- 435 SPECTROSCOPY (3)  
Prerequisites: Physics 335 and 381. Advanced topics in optics with emphasis on interferometry and spectroscopy in the visible region; holography; laboratory
- 441, 442 CLASSICAL DYNAMICS (3 ea)  
Prerequisites: Physics 233 and a course in differential equations. Lagrangian mechanics, perturbation techniques for dynamical systems, theory of oscillations, central forces and scattering theory.
- 451 ELEMENTS OF NUCLEAR PHYSICS (3)  
Prerequisites: Physics 371, 382; Math 331. Basic nuclear properties, nuclear models; interaction of radiation with matter; radioactive decay; elementary nuclear reactions.
- 455 PULSE AND DIGITAL EQUIPMENT (3)  
Prerequisite: Physics 356 or permission of instructor. Pulse switching and digital circuits; design and operation of computers and other digital research equipment; laboratory.
- 471 INTRODUCTION TO ELECTROMAGNETIC THEORY (3)  
Prerequisites: Physics 371 and Math 331; Potential theory, Maxwell's field equations, electromagnetic waves.
- 485, 486 MATHEMATICAL METHODS OF PHYSICS (3 ea)  
Prerequisites: 30 credits in physics and Math 332, or permission of instructor; courses not necessarily sequential. Complex variable, evaluation of integrals, integral transforms, special functions, numerical methods, probability and statistics, tensor analysis, group theory.
- 489 RELATIVITY THEORY (3)  
Prerequisites: 30 credits in physics and Math 332, or permission of the instructor. Review of special relativity, transformation properties of Maxwell's equations, stress-energy tensor, complete tensor, curved spaces, Riemann tensor and general relativity.
- 490 APPLIED PHYSICS (3)  
Prerequisites: Physics 383 and 486. Application of physical theories and mathematical methods to solve problems commonly encountered in scientific laboratories. Examples of typical problems are transport phenomena, hydrodynamics and fluid flow, stress systems, acoustics and ultrasonics, plasmas, lasers, course to include project and report.
- 491 ASTROPHYSICS (3)  
Prerequisites: Physics 381, 382, 441; Math 331; permission of instructor. Theories of stellar processes and stellar evolution.

- 492 HIGH SCHOOL PHYSICS PROGRAMS (3)  
Prerequisites: general physics; Physics 381 (or concurrent). Materials and methods of curricula such as P.S.S.C. and H.P.P.
- 498 RESEARCH PROJECTS IN PHYSICS (6)  
Prerequisite: permission of instructor. Investigation of a problem in physics under the sponsorship and supervision of the physics faculty; project must extend over a minimum of two quarters.
- 499 SEMINAR IN PHYSICS (1-3)  
Prerequisite: junior or senior status and permission of instructor.
- 500 SPECIAL PROBLEMS IN ADVANCED PHYSICS (1-3)  
Prerequisite: graduate standing and permission of the instructor. Detailed study of a special problem in physics.
- 531, 532 SOLID STATE PHYSICS (3 ea)  
Prerequisites: 45 credits in physics; Physics 531 prerequisite to 532. Properties of solids and the experimental basis of the modern theory of solids.
- 541, 542, 543 CLASSICAL DYNAMICS (3 ea)  
Prerequisite: 45 credits in physics including Physics 486. Selected topics in advanced classical dynamics.
- 551, 552 NUCLEAR THEORY (3 ea)  
Prerequisite: 45 credits in physics; Physics 551 prerequisite to 552. Theory and experimental basis for the structure of the atomic nucleus and nuclear properties and reactions.
- 571, 572 ELECTROMAGNETIC THEORY (3 ea)  
Prerequisite: 45 credits in physics; Physics 571 prerequisite to 572. General properties of vector fields, electromagnetic field equations, and boundary value problems; wave propagation.
- 581, 582 QUANTUM THEORY (3 ea)  
Prerequisite: 45 credits in physics including 486; Physics 581 prerequisite to 582. Advanced concepts in quantum theory including matrix formalism, quantization of the electromagnetic field, the Dirac theory of the electron, the interaction of radiation with matter.
- 598 GRADUATE SEMINAR (1-3)
- 599 RESEARCH (3-9)  
Prerequisite: permission of instructor and department chairman. Investigation of an original problem in physics under supervision.



# POLITICAL SCIENCE

*Professors:* Payne, Schwarz, Vernon, Wuest.  
*Associate Professors:* Rutan (Chairman), Clarke, Hebal.  
*Assistant Professors:* Arkley, Chard, Foisy, Hogan, Kepl, Krauss, Miner, Ziegler.

## BACHELOR OF ARTS

*Major* 65 credits

- Political Science 101, 150, 201
- Additional credits selected from not fewer than four of the areas listed below; at least 20 credits in one area; at least 10 credits in another area. No course may be counted in more than one area.

*Comparative Politics:* Political Science 291, 301-309, 372, 406, 417a, 417b, 417c, 417d, 430, 431, 432, 435, 454, 475

*Politics and Government:* Political Science 265, 340, 346, 353, 417a, 423, 426, 427, 429, 440, 441, 442, 450, 454, 455, 480, 481

*Public Administration:* Political Science 265, 320, 346, 353, 417e, 420, 421, 422, 423, 424, 426, 427, 428, 429, 454, 481

*Public Law:* Political Science 210, 310, 315, 410, 411, 412, 428

*Political Theory:* Political Science 265, 360, 424, 442, 460, 461, 462, 463, 465, 480

*International Relations:* Political Science 270, 370, 375, 376, 411, 417a, 417b, 417c, 417d, 474, 475, 476

*Minor* 25 credits

- Political Science 101 and/or 201
- Political Science 150
- Remaining credits from at least 2 areas

*Minor-East Asian Studies* 30 credits

This may be added to the major for a Major Concentration.

See Interdepartmental Programs, page 201, for specifications.

## TEACHER EDUCATION

*Major*

No teacher education major is offered. Students interested in political science as a teaching field, see Social Studies Major, or combine an extended minor of 33-35 credits with a major in history. Recommendation for teaching competence for junior or senior high school may be obtained in this way.

*Minor* 25 credits.

- Political Science 101 and/or 201
- Political Science 150
- Remaining credits from at least 2 areas

*Minor—East Asian Studies* 30 credits

See Interdepartmental Programs, page 201, for specifications.

*Minor—Canadian and Canadian American Studies*  
30 credits

See Interdepartmental Programs, page 201, for specifications.

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a political science major who wishes to graduate "with honors" must complete: Political Science 496 with the advice of the departmental honors adviser and two years of foreign language (or a satisfactory

reading knowledge of a foreign language). He must also submit a senior thesis and have a grade average of 3.5 in upper division political science courses.

## INTERNSHIPS

Students are encouraged to obtain internships in state, local, or national government agencies, political parties, and interest groups. Credit may be obtained by prior arrangement. The academic relevance and adequacy must be determined by the department through a written evaluative report.

## GRADUATE STUDY

For a concentration in political science leading to the Master of Arts degree, see *Graduate Bulletin*.

## COURSES IN POLITICAL SCIENCE

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| <p>101 GOVERNMENT IN THE MODERN WORLD (5)<br/>Introduction to concepts of politics; types of governments, and political problems in the world today.</p> <p>150 THE AMERICAN POLITICAL SYSTEM (5)<br/>Consideration of the system and process of American politics and government with primary focus on the national level.</p> <p>201 INTRODUCTION TO POLITICAL SCIENCE (5)<br/>Introduction to the study of political phenomena; scope and methods of the discipline; role of political science as an academic discipline and in the community.</p> <p>210 INTRODUCTION TO CONSTITUTIONAL LAW (5)<br/>Introduction to the general role of Judicial Review in U.S. Constitutional Democracy in the past with some emphasis on the most relevant contemporary developments in Constitutional Law.</p> <p>265 RESEARCH METHODS IN POLITICAL SCIENCE (5)<br/>Prerequisite: Pol Sci 101 or permission of instructor. Empirical research methods, techniques, and materials and their application in analysis and evaluation of political phenomena.</p> <p>270 INTRODUCTION TO INTERNATIONAL POLITICS (5)<br/>Interaction of states and other factors in the international system in terms of basic relationships of war and peace.</p> | <p>291 INTRODUCTION TO COMPARATIVE POLITICS (5)<br/>Basic structures, functions, and socio-cultural environments of foreign political systems; methods of comparative study.</p> <p>301 BRITISH MODEL PARLIAMENTARY SYSTEMS (5)<br/>Introduction to Parliamentary political systems; analysis of selected structures; examination and comparison of selected parliamentary polities.</p> <p>302 WESTERN EUROPE (5)<br/>Prerequisite: Pol Sci 101 or 291 or permission of instructor. Governments and politics of selected western European states.</p> <p>303 SOVIET UNION AND EASTERN EUROPE (5)<br/>Prerequisite: Pol Sci 101 or 291 or permission of instructor. The political system of the Soviet Union and other communist states in Eastern Europe.</p> <p>304 LATIN AMERICA (5)<br/>Prerequisite: Pol Sci 101 or permission of instructor. Political, socio-economic and cultural problems of Latin America.</p> <p>305 THE MIDDLE EAST (3)<br/>Prerequisite: Pol Sci 101 or permission of instructor. Political, cultural, and governmental problems of the Middle East.</p> <p>306 CENTRAL EUROPE (5)<br/>Governments and politics of selected central European states.</p> <p>307 EAST ASIA (5)<br/>Prerequisite: Pol Sci 101 or 291 or permission of instructor. Survey course covering China, Japan, and Korea since the mid nineteenth century.</p> <p>308 SUB-SAHARAN AFRICAN POLITICAL SYSTEMS (5)<br/>Prerequisite: Pol Sci 101 or permission of instructor. Politics of independent black African states with emphasis on nation-building and economic development; governments of white dominated southern portion.</p> <p>309 SOUTHEAST ASIA (5)<br/>Prerequisite: Pol Sci 101 or 291 or permission of instructor. Selected political systems.</p> <p>310 AMERICAN CONSTITUTIONAL LAW (5)<br/>Prerequisite: Pol Sci 210. Significant Supreme Court decisions interpreting major parts of the Constitution in practice. Emphasis on Separation of Powers and Federal Division of Powers.</p> |
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## *Political Science*

- 315 LAW AND SOCIETY (3)  
Prerequisite: Pol Sci 150 or permission of instructor. Jurisprudence, the legal order, sources of law and the judicial process.
- 320 PUBLIC ADMINISTRATION (5)  
Prerequisite: Pol Sci 150, or one course from Soc/Anth 201 or 340 or Psych 201 or 340, Econ 201, or BA 101. The conduct of public business with emphasis on the executive branch of government; some treatment of other countries.
- 340 POLITICAL PARTIES (5)  
Prerequisite: Pol Sci 101 and 150, or permission of instructor. Political parties and party systems in the West.
- 346 POVERTY, MINORITIES, AND GOVERNMENT (5)  
Prerequisite: Pol Sci 150 or permission of instructor. Federal, state, and local programs affecting minorities and the poor especially in large city ghettos; some emphasis on Washington State.
- 353 STATE AND LOCAL POLITICAL SYSTEMS (5)  
Prerequisite: Pol Sci 150 or permission of instructor. Sub-national levels of government and intergovernmental relations; developing and administering policies for problems of race, population, pollution, crime, poverty, housing, resource depletion.
- 360 INTRODUCTION TO POLITICAL THEORY (5)  
Prerequisites: Pol Sci 101 and 150, or permission of instructor. Origin and evolution of major concepts of political theory.
- 370 WAR AND PEACE (5)  
Prerequisite: Pol Sci 270. Causes of war and proposals for preventing it; special attention to arms races, disarmament, negotiation.
- 372 POLITICAL CHANGE: AN INTRODUCTION TO POLITICAL DEVELOPMENT (5)  
Prerequisite: Pol Sci 101. Basic concepts such as modernization, social mobilization, institutionalization examined in a few selected countries.
- 375 FOREIGN POLICIES (5)  
Prerequisite: Pol Sci 270. International politics on the level of foreign policy decision making; emphasis on major powers other than U.S.; simulated foreign policy problems.
- 376 AMERICAN FOREIGN POLICY (5)  
Prerequisite: Pol Sci 270 or permission of instructor. Background organization of American foreign policy; the conduct of diplomatic relations with other states; current issues and problems in foreign affairs.
- 397b STUDENTS, THE COMMUNITY AND CONTROVERSIAL ISSUES (3)  
Objective analyses of selected controversial issues: such as, the Vietnam War, drug usage, environmental pollution, student activism, and ethnic minorities. Resource persons drawn from the college and community.
- 397x COMPARATIVE COLONIAL ADMINISTRATION IN BLACK AFRICA (3)
- 400 SELECTED READINGS AND RESEARCH (2-5)  
Prerequisite: permission of department. Supervised readings and/or research in a selected area of political science.
- 406 CANADA (5)  
Prerequisite: Pol Sci 291 or permission of instructor. Canadian social and political systems; governmental structures and functions; social, political, economic problems and foreign relations.
- 410 THE SUPREME COURT AND CIVIL RIGHTS (3)  
Prerequisites: Pol Sci 150, 210 and 310. Leading decisions regarding First Amendment freedoms, procedural rights in trials. Fourteenth Amendment liberties, due process of law, and equal protection of the laws.
- 411 INTERNATIONAL LAW (5)  
Prerequisite: Pol Sci 270 or permission of the instructor. Origin, principles, and problems.
- 412 THE WARREN COURT (3)  
Prerequisite: Pol Sci 150 and 210. Case method approach to revolutionary and unique era of the U.S. Supreme Court under Chief Justice Earl Warren; primary emphasis on constitutional law and civil rights not covered in Pol Sci 310 and 410
- 417 SEMINARS IN SPECIAL PROBLEMS (3 ea)
- 417a State Policy, Espionage, and Intelligence Utilization  
Prerequisite: permission of instructor.
- 417b Seminar in International Politics  
Prerequisite: Pol Sci 270.
- 417c Seminar in Political Development  
Prerequisite: Pol Sci 372.
- 417d Selected Problems in East Asian Politics  
Prerequisite: Pol Sci 307 or permission of instructor.
- 417e The Budgetary Process  
Prerequisite: Pol Sci 320 or permission of instructor.

- 420 ENVIRONMENTAL POLITICS AND ADMINISTRATION (5)  
Prerequisite: Pol Sci 320 or permission of instructor. Problems in air and water pollution, forest policies, food supply, minerals, recreation and wilderness areas, and power.
- 421 METROPOLITAN AREA GOVERNMENT (5)  
Prerequisite: Pol Sci 353 or permission of instructor. Decision-making structures of central city and suburban political systems; regional interaction, federal-state-local relations; problems related to minorities, poverty, and growth.
- 422 STAFFING THE PUBLIC BUREAUCRACY (3)  
Prerequisite: Pol Sci 320 or permission of instructor. Comparative analysis of public personnel systems in selected countries, with special attention to the United States; general principles of public administration and specialized aspects such as recruitment, training, and employee morale.
- 423 THE AMERICAN EXECUTIVE (3)  
Prerequisite: Pol Sci 150 or permission of instructor. The executive branch, its organization and problems.
- 424 ADMINISTRATIVE THEORY (3)  
Prerequisite: Pol Sci 320 or permission of instructor. Organizational theory relevant to public administrative settings.
- 426 POLITICS AND PUBLIC FINANCE (5)  
Prerequisite: Pol Sci 150. Consideration of the American political system as it relates to the development and maintenance of the structure of taxation and the distribution of governmental benefits.
- 427 POLICY-MAKING AND POLICY ANALYSIS (5)  
Prerequisite: Pol Sci 150. Consideration of the relationships between political, economic and social inputs into policy-making systems and the nature and consequences of policy outputs for various groups and sectors of the polity. Particular attention is paid to the possibility and problems of objective analysis conducted from within the boundaries of the subject political system.
- 428 THE REGULATORY PROCESS (3)  
Prerequisite: Pol Sci 320 or permission of instructor. Administrative regulation in relation to the political process.
- 429 ADMINISTRATION AND THE DEMOCRATIC STATE (5)  
Prerequisite: Pol Sci 320 or permission of instructor. Relationships of various administrative forms, processes, and behaviors to varying theoretical conceptions and empirical descriptions of democracy.
- 430 MODERN CHINESE POLITICS (5)  
Prerequisite: Pol Sci 307 or permission of instructor. Governments and political movements in the twentieth century.
- 431 MODERN JAPANESE POLITICS (5)  
Prerequisite: Pol Sci 307, or permission of instructor. Governments and politics since the Meiji Restoration.
- 432 MODERN KOREAN POLITICS (3)  
Prerequisite: Pol Sci 307 or permission of instructor. The development of modern Korean political systems from the 19th century to the present. The contemporary political systems of both North and South Korea will be considered.
- 435 CONTEMPORARY CANADIAN POLITICS (3)  
Prerequisite: Pol Sci 406 or permission of instructor. Examination of the governmental, political, and socio-economic problem areas of modern Canada and analysis of selected problems.
- 440 THE LEGISLATIVE PROCESS: THE STATE LEGISLATURE (5)  
Prerequisite: Pol Sci 353, or permission of instructor. Interaction of elected executives, legislators, administrators, political parties, pressure groups, the press, and public in the legislative process at the state level, with some emphasis on Washington State. Field research in Olympia.
- 441 THE LEGISLATIVE PROCESS: THE NATIONAL CONGRESS (3)  
Prerequisite: Pol Sci 101, 150. The politics and policies of the National Congress in the internal organization of the U.S. Senate and House of Representatives and in their external relations with the President, the Bureaucracy, Interest Groups, and the Voters.
- 442 POLITICAL BEHAVIOR (5)  
Prerequisites: Pol Sci 265 and 340 or permission of instructor. Human action in political settings, with emphasis on social class analysis, voting, and legislative behavior.
- 450 THE ELECTORAL PROCESS (5)  
Prerequisite: Pol Sci 340 or permission of instructor. The electoral process and voting behavior stressing the correlates of voting; reference to survey and aggregate data.

## *Political Science*

- 454 COMPARATIVE SUB-NATIONAL POLITICAL SYSTEMS (3)  
Prerequisite: Pol Sci 353 or permission of instructor. Sub-national political systems with emphasis on decision-making structures and selected problems, primarily in North America and Europe.
- 455 COMMUNITY POLITICAL SYSTEMS (5)  
Prerequisite: Pol Sci 353 or permission of instructor. Interrelation of formal and informal decision-making structures at metropolitan and regional levels and below; power structure and "elite" literature.
- 460 POLITICAL THEORY: ANCIENT AND MEDIEVAL (3)  
Prerequisite: Gen St 121 or Pol Sci 360 or permission of instructor. Origin and evolution of major concepts in Western political thought from Pericles to Machiavelli.
- 461 POLITICAL THEORY: RENAISSANCE AND MODERN (3)  
Prerequisite: Gen St 122 or Pol Sci 360 or permission of instructor. Origin and evolution of major concepts in Western political thought from Machiavelli to Edmund Burke.
- 462 POLITICAL THEORY: CONTEMPORARY IDEOLOGIES (3)  
Prerequisite: Gen St 123 or Hist 107 or Pol Sci 360 or permission of instructor. Origin and evolution of major concepts in Western political thought from Edmund Burke to the present; development of modern conservatism, liberalism, Marxism, and Fascism or National Socialism.
- 463 AMERICAN POLITICAL THOUGHT (5)  
Prerequisites: History 203, 204, or equivalent, or Pol Sci 101 and/or 150. Major concepts in American political thought from the Colonial period to the present.
- 465 ANALYTICAL CONCEPTS OF POLITICAL THEORY (3)  
Prerequisite: Pol Sci 360 or permission of instructor.
- 474 INTERNATIONAL ORGANIZATION (3)  
Prerequisite: Pol Sci 270 or permission of instructor. Development, organization, and activities of various types of international institutions, including the United Nations.
- 475 AUTHORITARIAN AND TOTALITARIAN CIVIC CULTURES (3)  
Prerequisite: Pol Sci 101 or permission of instructor. An examination and analysis of the political-social structures of selected authoritarian/totalitarian polities.
- 476 AMERICAN-EAST ASIAN RELATIONS (5)  
Prerequisite: Pol Sci 307 or permission of instructor. Relations among the United States, China, Japan and Korea.
- 480 POLITICS, GOVERNMENT, AND RELIGION (3)  
Prerequisite: permission of instructor. Relationships between political activity and government structures on the one hand, and religious perceptions and organizations on the other; problem areas in relationships between politics, government, and religion; role of religion (perceptions and organizations) in modern political life and governmental structures.
- 481 POLITICAL SOCIALIZATION (5)  
The content, process, and function of political socialization at individual, institutional and societal levels.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 497g CONTEMPORARY TOTALITARIAN POLITICAL SYSTEMS (3)  
An analysis of the general characteristics of recent and contemporary totalitarian and authoritarian political systems (Italian fascism; Peronism; Falangist Spain; Leftist-Nationalist regimes in Arab and Latin American countries; Anarchistic movements; Revisionist Marxist regimes, etc.) with emphasis on environment, party, regime, origins, ideological and governmental principles, and developmental contexts.
- 497h RADICAL POLITICAL THOUGHT - IN UNITED STATES (3)  
An analysis of radical political thought in the United States; its origin, tradition, evolution and meaning. The scope of the course will focus upon the significance and place of radical political thought in the development and context of the American political system (past, present and future).
- 497j TEACHING POLITICAL SCIENCE IN THE SECONDARY SCHOOL (3)  
Prerequisite: at least one year of teaching experience or permission of instructor. A seminar designed to analyze, develop, and apply professional programs of classroom instruction in the subject matter of political science for the secondary school. The course will provide teachers the opportunity to study, in depth, both curriculum matters (planning, preparation, and use) and instructional methods and media relevant to the teaching of political science in the secondary school.
- 500 SPECIAL PROBLEMS (3-5)  
Individual studies to meet the needs of a student's program.



- 501 POLITICAL SCIENCE AS A DISCIPLINE (5)  
History of political science; description and critique of fields; trends and challenges.
- 502 RESEARCH TECHNIQUES IN POLITICAL SCIENCE (5)
- 505 SEMINAR IN COMPARATIVE GOVERNMENT AND POLITICS (3)  
Principles of government and politics in existing and developing states.
- 510 SEMINAR IN AMERICAN PUBLIC LAW (3)  
The tradition and emerging trends.
- 511 SEMINAR IN INTERNATIONAL LAW AND ORGANIZATION (3)  
Intensive concentration on international law and specific problems in the field of the "Law of the Sea."
- 520 SEMINAR IN PUBLIC ADMINISTRATION (3)  
Organizational theory and practice in public settings; comparative aspects.
- 530 SEMINAR IN MODERN CHINESE POLITICS (3)  
Prerequisite: Pol Sci 430 and permission of instructor. Individual readings and research.
- 531 SEMINAR IN MODERN JAPANESE POLITICS (3)  
Prerequisites: Pol Sci 431 and permission of instructor.
- 540 SEMINAR IN THE POLITICAL PROCESS (3)  
The influence of organizations and individuals in the formation of public policy.
- 550 SEMINAR IN STATE AND LOCAL GOVERNMENT (3)  
Problems at sub-national levels, both American and other, internally and in relation to national levels.
- 560 SEMINAR IN POLITICAL THEORY (3)  
Function and history of political theory; the crisis in traditional theory; emerging trends.
- 570 SEMINAR IN INTERNATIONAL AFFAIRS (3)  
The contemporary international scene, emerging international problems and possible solutions.
- 575 SEMINAR IN FOREIGN POLICY AND DIPLOMACY (3)  
Process of policy formation; emerging trends in modern diplomacy.
- 599 THESIS (6-9)

## PSYCHOLOGY

*Professors:* Meyer (Chairman), Adams, Blood, Budd, Elich, Kintz, Kuder, Mason, Meade, Mees, Nugent, Ross, R. Thompson, Woodring.  
*Associate Professors:* Carmean, Crow, Diers, Jones, L. Lippman, Lonner, MacKay, Miller, Panek, C. Taylor, Tyler, Wilkins.  
*Assistant Professors:* Brislin, Cvetkovich, Grote, Helgoe, Klepac, Kleinknecht, M. Lippman, Marx, Prim, Rees, Shaffer, Smiley, S. Taylor, Thorndike.

## BACHELOR OF ARTS IN EDUCATION

### *Major* Elementary

Prospective elementary teachers are advised to take the Arts and Science concentration in Child Development.

### *Minor* 20 credits

- Psychology 201
- 15 credits in psychology other than the required professional educational psychology courses; recommended courses include 306, 307

Students with an Elementary Education major minoring in psychology are advised to elect course work beyond the required 20 credits. A minimum of 25 credits is suggested.

## Psychology

### BACHELOR OF ARTS

*Major* 40 credits plus Supporting Courses

- Psychology 201, 306, 307 (305 recommended)
- Two courses from Psych 402, 403, 406, 407, 408, 409
- One course from Psych 421, 422, 423
- 12 credits in psychology under advisement
- Supporting courses: Phil 102, or one of the following: 111, 113, 202, 302, 310, or 411 and one of the following sequences:
  - (a) Chemistry 121, 122, 123, plus 5 credits advanced work
  - (b) Physics 131, 132, 133, plus 5 credits of advanced work
  - (c) Math 220, 241, CS 210
  - (d) Zool 348, 349; one course from Biol 301, 371, or Zool 366, 368, 461

Recommended additional electives: one year of a foreign language, upper division mathematics or science courses.

Students planning master's degree work in psychology should consult the *Graduate Bulletin* for prerequisite courses.

*Major* Child Development 55 credits\*

- Psychology 201, 306, 307, 352
- One course from Psych 402, 403, 404, 405, 406, 407, 408, 409
- Three courses from Psych 457, 458, 459, 460, 461
- Electives; recommended courses include: Psych 305, 313, 340, 341, 402, 403, 406, 407, 408, 409, 410, 411, 413, 421, 422, 423, 424, 455, 456, Biology 371

Students planning to pursue graduate study are advised to take one of the supporting sequences of chemistry, physics, math, or biology listed above.

\*Prospective teachers electing concentration in Child Development are advised to take Psych 408 or 461 in lieu of Psych 351.

*Minor* 24 credits

- Psychology 201
- Two courses from Psych 306, 307, 313, 320, 340, 341, 352, 402, 403, 407, 408, 409, 413
- Electives under advisement

(Psych 341, 343, 403, 407, 409, 410 are recommended for biology majors; Psych 320 for economics majors)

### DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a psychology major who wishes to graduate "with honors" will work out a program of studies with the departmental honors adviser, complete Psychology 401 and prepare a thesis which he will defend before a faculty committee.

### GRADUATE STUDY

For concentrations in psychology leading to the Master of Education, the Master of Arts, or the Master of Science degrees, see *Graduate Bulletin*.

### COURSES IN PSYCHOLOGY

*Courses in educational psychology include Psych 331, 352, 371, 431. With the exception of Psych 352, these courses are not applicable to the arts and sciences major.*

#### 201 GENERAL PSYCHOLOGY (5)

Examination of basic psychological processes utilizing results of research investigations; participation in at least two experiments or equivalent activities.

#### 300 SPECIAL PROBLEMS (1-3)

Prerequisite: permission of instructor.

- 305 ADVANCED GENERAL PSYCHOLOGY (5)  
Prerequisite: Psych 201. Extended examination of selected topics in general psychology.
- 306 EXPERIMENTAL PSYCHOLOGY AND STATISTICS I (5)  
Prerequisite: Psych 201. Introduction to experimental methodology in psychology and statistical treatment of results. Lectures and laboratory.
- 307 EXPERIMENTAL PSYCHOLOGY AND STATISTICS II (5)  
Prerequisite: Psych 306. Design and conduct of psychological research investigations and statistical treatment of results; individual research project; lectures and laboratory.
- 313 PERSONALITY (5)  
Prerequisite: Psych 201. Theoretical approaches to personality; major philosophical assumptions, historical position, and experimental data considered in evaluating personality theories.
- 320 INDUSTRIAL PSYCHOLOGY (4)  
Prerequisite: Psych 201 or Gen St 105. Application of psychological principles to industrial problems of personnel selection and appraisal, human relations, marketing, training and engineering psychology.
- 340 SOCIAL PSYCHOLOGY (5)  
Prerequisite: Psych 201. The human as a social animal.
- 341 PHYSIOLOGICAL PSYCHOLOGY (5)  
Prerequisite: Psych 201. Biological foundations of behavior.
- 343 COMPARATIVE PSYCHOLOGY (5)  
Prerequisite: Psych 201. Phylogenetic comparison of animal behavior, learning, motivation, and sensory processes in selected species of animals.
- 351 PRINCIPLES OF HUMAN LEARNING (3)  
Prerequisite: Gen St 105; not open to those with credit in Psych 408. Application of psychological principles of learning to classroom teaching.
- 352 HUMAN DEVELOPMENT AND PERSONALITY (5)  
Prerequisites: Psych 351; Biol 101; not open to students who have credit in Psych 456. Basic principles of development and personality with special attention to the school age child; implications for educational practices.
- 361 FIELD EXPERIENCES IN MENTAL HEALTH (2)  
Prerequisites: psychology major or minor; upper division status; permission of instructor. Research and treatment programs in mental health and mental retardation; volunteer service work at Northern State Hospital.
- 371 EVALUATION IN THE PUBLIC SCHOOL (3)  
Prerequisite: Psych 351. Evaluating pupil achievement; construction of instruments for determining what a student has learned and how much he has developed; use of standardized tests.
- 396a,b,c HONORS TUTORIAL (2-5)
- 400 ADVANCED PSYCHOLOGICAL RESEARCH PROBLEMS (3)  
Prerequisite: Psych 307 and permission of instructor. Individual project in psychology based on empirical research.
- 401 HONORS SEMINAR (3)  
Prerequisite: permission of instructor. Intensive examination of selected problems in psychology.
- 402 MOTIVATION (5)  
Prerequisite: Psych 306. Experimental findings, and theoretical interpretations of the biological and psychological aspects of motivation; lectures and laboratory.
- 403 ANIMAL BEHAVIOR (5)  
Prerequisite: Psych 306, 343. Bases of animal behavior, phyletic differences, modification and parameters of behavior, lectures and laboratory.
- 404 SENSORY FUNCTIONS (5)  
Prerequisite: Psych 306, 341. Sensory receptors and the central nervous system transformation of operant activity in relation to psychophysical evidence and to adaptive significance of behavior; lectures and laboratory.
- 406 EXPERIMENTAL SOCIAL PSYCHOLOGY (5)  
Prerequisites: Psych 306 and 340. Psychological problems of man in a social setting. Lectures and laboratory.
- 407 PERCEPTION (5)  
Prerequisite: Psych 306. Sensory processes and stimuli necessary to perception; perceptual theory, classical and contemporary; lectures and laboratory.
- 408 LEARNING (5)  
Prerequisite: Psych 306. Students with credits in Psych 351 admitted by department approval only. Major principles of learning, empirical evidence underlying them, and their theoretical interpretation; lectures and laboratory.

## Psychology

- 409 PSYCHOPHYSIOLOGY (5)  
Prerequisite: Psych 306. Interrelationships between physiological and psychological aspects of behavior with special reference to human subjects. Lecture and laboratory.
- 410 SUBHUMAN PRIMATE BEHAVIOR (3)  
Prerequisite: Psych 306. Variations in patterns of behavior in experimental settings; field studies in major groups of subhuman primates.
- 411 PSYCHOPATHOLOGY (3)  
Prerequisite: Psych 313. Psychoses, neuroses, and other forms of behavior deviation; conceptions regarding these conditions.
- 413 FOUNDATIONS OF PSYCHOLOGICAL MEASUREMENT (3)  
Prerequisite: Psych 306. Theory basic to construction and other application of psychological tests and scaling techniques.
- 421 SEMINAR IN HISTORY AND SYSTEMS OF PSYCHOLOGY (3)  
Prerequisites: graduate or senior status, Psych 307, and permission of instructor. Historical development of the systematic viewpoints of psychology.
- 422 SEMINAR IN PSYCHOLOGICAL THEORY (3)  
Prerequisites: senior status, Psych 307, and permission of instructor. The logic of theory development in psychology and special problems of psychology as an independent discipline.
- 423 SEMINAR IN RECENT PSYCHOLOGICAL LITERATURE (3)  
Prerequisites: senior status, Psych 307, and permission of instructor. Selected topics which vary from year to year.
- 431 INTRODUCTION TO GUIDANCE SERVICES (3)  
Prerequisites: 15 credits in psychology and senior status. Roles of teacher, principal, psychologist, counselor, and other specialists in an integrated program; guidance and counseling techniques.
- 440 HUMAN CONFLICT AND UNDERSTANDING (3)  
Prerequisite: Psych 306, 340. Recent empirical and theoretical work on human conflict, aggression and competition.
- 441 CULTURAL CONDITIONING OF PSYCHOLOGICAL PHENOMENA (3)  
Prerequisite: Psych 306. Theories, methodology and research data related to psychological phenomena as conditioned by culture.
- 442 SOCIAL BEHAVIOR IN ANIMALS (3)  
Prerequisite: Psych 306 or permission of instructor. Comparison of social organization and behavior patterns in various species; aggression, population control, communication systems; evolution of behavior.
- 443 COGNITION (3)  
Prerequisites: Psych 306, 406. Cognition, thinking, and the higher mental processes.
- 445 CURRENT TRENDS IN PSYCHOLOGY  
445a Advanced Human Learning (3)  
Prerequisite: Psych 351 or equivalent. Major concepts; recent developments in learning theory as related to the teaching-learning process.
- 453 INDIVIDUAL DIFFERENCES (3)  
Behavioral differences among individuals.
- 455 ADVANCED CHILD PSYCHOLOGY (3)  
Prerequisite: Psych 352 or equivalent. Research and theory in child development and behavior.
- 456 PSYCHOLOGY OF ADOLESCENCE (3)  
Prerequisite: Psych 352 or equivalent. Advanced study of development characteristics, behavior problems, personal and social adjustments of children and youth; implications for secondary education and guidance programs.
- 457 DEVELOPMENTAL PSYCHOLINGUISTICS (5)  
Prerequisites: Psych 306 or permission of instructor. Experimental findings and theoretical interpretations of the biological, psychological, and linguistic aspects of language; special attention to implications for a theory of language acquisition.
- 458 COGNITIVE DEVELOPMENT (5)  
Prerequisite: Psych 306 or permission of instructor. Historical, theoretical, and empirical aspects of cognitive development of children; critical analysis of research and methodology.
- 459 EARLY EXPERIENCE (5)  
Prerequisite: Psych 306 or permission of instructor. Effects of early experience upon behavior of the organism at different stages of development.
- 460 SOCIAL DEVELOPMENT (5)  
Prerequisite: Psych 306 or permission of instructor. Development of social behavior from infancy to adulthood.

- 461 CHILD LEARNING (5)  
Prerequisites: Psych 305, 306. Early learning considered from a developmental viewpoint. Emphasis upon experimental factors affecting early growth and maturation.
- 466 THE BRIGHT AND GIFTED CHILD (3)  
Prerequisite: teaching experience, permission of instructor, or 11 credits in psychology. Identification procedures, curriculum, and teaching methods suited to children with superior and special abilities.
- 471 STANDARDIZED TESTS (3)  
Prerequisite: Psych 371 or 413, or permission of instructor. Standardized group tests commonly used in the public schools; selection and administration of tests; interpretation of norms.
- 480 OPERANT CONDITIONING (3)  
Prerequisite: Psych 306. Free-operant behavior, schedules of reinforcement; application to problem areas; lecture and laboratory.
- 481 BEHAVIORAL MODIFICATION OF CHILDREN (3)  
Application of behavior principles to academic and social problems of children; lecture and laboratory.
- 491 LABORATORY IN PREPARATION OF INSTRUCTIONAL PROGRAMS (6)  
Prerequisite: admission to teacher education, and permission of department. Individual study of learning principles and their application in cooperating schools; selecting and justifying objectives and defining them operationally; designing plans, selecting strategies and materials to implement plans, adapting to actual pupils in the schools. (Also offered as Ed 491.)
- 492 LABORATORY IN INTERACTION AND EVALUATION (6)  
Prerequisite or concurrent: Psych 491. Implementing significant learning objectives through interaction with pupils; evaluation of learning under guidance of cooperating public school teachers and college faculty. (Also offered as Ed 492.)
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 500 SPECIAL PROBLEMS (1-3)  
Prerequisite: permission of instructor.
- 501a-f PRO-SEMINAR IN PSYCHOLOGICAL FOUNDATIONS (2 ea)
- |      |                       |
|------|-----------------------|
| 501a | Systems of Psychology |
| 501b | Perception            |
| 501c | Learning              |
| 501d | Motivation            |
| 501e | Social                |
| 501f | Personality           |
- 502, 503 DESIGN AND ANALYSIS OF EXPERIMENTS (3 ea)  
Prerequisite: Psych 306; 502 prerequisite to 503. Multi-dimensional analysis of variance, trend analysis, and analysis of covariance.
- 504 MULTIVARIATE ANALYSIS (3)  
Prerequisite: Psych 306, 503. Topics in correlation theory and application, including factor analysis and regression analysis.
- 511 INSTRUMENTATION FOR PSYCHOLOGICAL RESEARCH (2)  
Typical technological solutions to problems encountered in original research; lecture and laboratory.
- 512 CONSTRUCTION OF PSYCHOLOGICAL MEASURING DEVICES (2)
- 520 SEMINAR IN PERCEPTION (3)  
Prerequisite: Psych 501b.
- 521 SEMINAR IN LEARNING (3)  
Prerequisite: Psych 501c.
- 522 SEMINAR IN MOTIVATION (3)  
Prerequisite: Psych 501d.
- 523 SEMINAR IN SOCIAL PSYCHOLOGY (3)  
Prerequisite: Psych 501e.
- 524 SEMINAR IN PERSONALITY (3)  
Prerequisite: Psych 501f.
- 525 SEMINAR IN PHYSIOLOGICAL PSYCHOLOGY (3)  
Prerequisite: permission of instructor.
- 526 SEMINAR IN COMPARATIVE PSYCHOLOGY (3)  
Prerequisite: permission of instructor.
- 527 SEMINAR IN DEVELOPMENTAL PSYCHOLOGY (3)  
Prerequisite: permission of instructor.
- 528 SEMINAR IN BEHAVIOR PATHOLOGY (3)  
Prerequisite: permission of instructor.
- 529 SEMINAR IN ADVANCED MEASUREMENT THEORY (3)
- 550 INTRODUCTION TO STUDENT PERSONNEL ADMINISTRATION (3)  
Prerequisite: admission to the program. The services commonly included in student personnel programs of colleges and universities; emphasis on purpose, scope, function and effect of student services; their conceptual framework and relationship to faculty, other administrative offices and students.

## Psychology

- 551a,b,c SEMINARS: COLLEGE STUDENT PERSONNEL ADMINISTRATION (5 ea)  
Prerequisite: Psych 550 and concurrent substantial employment in a college student personnel position. Intensive examination of the purposes, functions and operation of the various services; major issues in Student Personnel Work; observation and participation in research programs appropriate to the various services; major papers and extensive use of case studies.
- 553 INTRODUCTION TO CLINICAL AND COUNSELING PSYCHOLOGY (5)  
Prerequisites: admission to clinical, counseling, or school psychologist program and permission of instructor; students in school psychology should also have Psych 431 (or concurrent). Theories of psychological counseling related to philosophical positions, social conditions, personality, and learning theory.
- 554 CLINICAL COUNSELING INTERVIEW (3)  
Prerequisites: Psych 553 and permission of instructor. Counseling and clinical interview with laboratory.
- 555 PSYCHOLOGY OF OCCUPATIONS (3)  
Prerequisite: Psych 431 or permission of instructor. Sources of occupational materials; theories of career development; applications to vocational counseling.
- 557 INDIVIDUAL APPRAISAL IN COUNSELING (3)  
Prerequisite: Psych 471 or 413, 306, and 553. Collection, evaluation, application, and interpretation of data available to the school counselor.
- 558 INDIVIDUAL INTELLIGENCE TESTING (4)  
Prerequisites: Psych 553 and permission of instructor. Theory and principles underlying construction of individual intelligence tests; supervised practice in administration of tests.
- 560 PERSONALITY ASSESSMENT (4)  
Prerequisites: Psych 553, 554, 558. Clinical appraisal with special attention to value and limitations of personality and interest measures.
- 562 PRACTICUM IN PSYCHOLOGICAL EVALUATION (3)  
Prerequisites: Psych 560 and permission of instructor. Diagnostic and interpretative work with selected cases under direct supervision.
- 564 PSYCHOTHERAPY AND COUNSELING: INDIVIDUAL (3)  
Prerequisites: Psych 553, 554 and permission of instructor. Systematic presentation of approaches in individual counseling and psychotherapy with emphasis on theory, goals, and techniques; work with cases under direct supervision.
- 565 PSYCHOTHERAPY AND COUNSELING: GROUP (2)  
Prerequisites: Psych 553, 554 and permission of instructor. Group approaches in counseling and psychotherapy with emphasis on theory, goals, and techniques; direct experience in group settings under supervision.
- 566 BEHAVIORAL THERAPIES (3)  
Prerequisite: permission of instructor. Theories and techniques of behavior modifications; intensive research review, opportunities for supervised practice.
- 570 COUNSELING PRACTICUM (2-10)  
Prerequisite: permission of instructor. Practicum experience in counseling in selected settings with major responsibility for several cases under supervision.
- 573 CLINICAL PRACTICUM (2-10)  
Prerequisite: Psych 562 and permission of instructor. Practicum experience in clinical psychology with major responsibility for several cases under supervision.
- 575 SEMINAR IN CASE PRESENTATION (3)  
Prerequisite: concurrent with 570 or 573. Presentation of actual cases to allow for team interaction and interdisciplinary evaluation by a variety of specialists as to procedure, referral, interaction, and follow-up.
- 576 SEMINAR IN CLINICAL AND COUNSELING RESEARCH (3)  
Prerequisite: permission of instructor, Psych 501. Research investigation of selected theoretical and practical problems in psychopathology, clinical and counseling psychology. Each student will design an original research study.
- 580 SEMINAR IN COLLEGE TEACHING OF PSYCHOLOGY (3)
- 581 PRACTICUM IN COLLEGE TEACHING OF PSYCHOLOGY (3-12)
- 582 PRACTICUM IN RESEARCH IN PSYCHOLOGY (3-12)
- 599 THESIS (6-12)
- 648 PROFESSIONAL INTERNSHIP IN SCHOOL PSYCHOLOGY (1-3)  
Prerequisites: master's degree in psychology or school psychology, and permission of department. An academic year of college supervised work during the first year in professional school psychology; this course and two years of experience required for State Standard Certificate in school psychology.

# SOCIOLOGY / ANTHROPOLOGY

*Professors:* Anastasio, Mazur, Taylor.  
*Associate Professors:* Cali (Chairman), Bosch, Harris.  
*Assistant Professors:* Allen, Drake, Gossman, Grabert,  
Moser, Paulus, Stephan.  
*Lecturers:* Jacobs, Mahoney, Tweddell.

## BACHELOR OF ARTS IN EDUCATION

*Major* Elementary 45 credits

- Two courses from: Soc/Anth 200, 201, 202
- One course from: Soc/Anth 370, 392
- Two courses from: Soc/Anth 361, 362, 363, 364, 451, 462, 463
- Soc/Anth 350 or Psych 340
- Electives under departmental advisement

(Note: no major is offered in secondary education.)

*Minor* 25 credits

- Two courses from Soc/Anth 200, 201, 202
- Electives under departmental advisement

## BACHELOR OF ARTS

*Major* 55 credits

- Two courses from Soc/Anth 200, 201, 202
- Soc/Anth 370, 375, 392
- One course from Soc/Anth 361, 362, 363, 364, 451, 462, 463
- Electives under departmental advisement
- Supporting course: Soc/Anth 350 or Psych 340

*Minor—Sociology/Anthropology* 25 credits

- Two courses from Soc/Anth 200, 201, 202
- Electives under departmental advisement

*Minor—Linguistics* 25 credits

- Linguistics 200, 201, 301, 302, 303
- Soc/Anth 448
- Electives under departmental advisement

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a sociology/anthropology major who wishes to graduate “with honors” must demonstrate a reading knowledge of a foreign language and submit a senior thesis.

## COURSES IN SOCIOLOGY/ANTHROPOLOGY

### 200 HUMAN EVOLUTION AND PREHISTORY (5)

The development of man; human origins and prehistory; criteria and theories of race classification; human diffusion, contacts and problems.

### 201 CULTURE AND SOCIETY (5)

Human behavior in our own and other societies; case studies leading to development of basic concepts, problems and points of view in the study of society.

## *Sociology/Anthropology*

- 202 PRINCIPLES OF SOCIOLOGY (5)  
Introduction to the analytical study of social phenomena.
- 270 FIELD COURSE IN ARCHEOLOGY (10)  
Prerequisites: Soc/Anth 200 or 201 or equivalent; permission of instructor. On-site training in methods and techniques of archeological survey and analysis.
- 300 SPECIAL PROJECTS (1-3)  
Prerequisites: 10 credits in Soc/Anth and permission of instructor. Supervised reading and/or research in selected areas.
- 310 THE RISE OF CIVILIZATIONS (5)  
Prerequisites: Soc/Anth 200, 201 or permission of instructor. Village agricultural societies as revealed by archeology; crystallization of village farming societies into urban civilizations in the Near East, Egypt, India, China and New World parallel developments.
- 311 WORLD DEMOGRAPHY (5)  
Prerequisite: Soc/Anth 201 or 202; Math 240. Growth, distribution and composition of human population; elementary demographic techniques essential to understanding the components of population change.
- 315 BIOCULTURAL ADAPTATION AND EVOLUTION (3)  
Prerequisite: Soc/Anth 200 or Zool 366. Interactions of biological and cultural factors in the evolution and adaptation of human populations.
- 320 ECONOMIC ORGANIZATION (5)  
Prerequisite: Soc/Anth 201 or 202. Economic behavior and its relationship to the wider social context in selected areas (societies) of the world.
- 330 SOCIOLOGY OF RELIGION (5)  
Prerequisite: Soc/Anth 201 or 202. Comparative study of religious thought, belief, and behavior; relationship of religious experience and institutions to other aspects of culture and society.
- 340 POLITICAL ORGANIZATION (5)  
Prerequisite: Soc/Anth 201 or 202. Political structure in selected areas (and societies) of the world; the relationship between political institutions and other aspects of the social system.
- 347 RACIAL AND CULTURAL MINORITIES (3)  
Prerequisite: Soc/Anth 201 or 202. Sociological and socio-psychological aspects of minority group situations and minority relations with the larger society: emphasis on non-white subcultures in the United States.
- 350 INTERPERSONAL BEHAVIOR (5)  
Prerequisite: Soc/Anth 201 or 202, or Psych 201. Patterns and processes of socialization and sociation in individual and group performance.
- 351 FAMILY AND KINSHIP ORGANIZATION (5)  
Prerequisite: Soc/Anth 201 or 202. Types of family systems from selected societies, with emphasis upon variation of structure and socio-psychological functions.
- 354 SOCIOLOGY OF DEVIANT BEHAVIOR (5)  
Prerequisite: Soc/Anth 201 or 202. The collective aspects of non-normative or non-conforming behavior as a product of the social system.
- 361 PEOPLES OF THE AMERICAS (5)  
Prerequisite: Soc/Anth 201 or 202. Ethnographic survey of the peoples and cultures.
- 362 PEOPLES OF ASIA (5)  
Prerequisite: Soc/Anth 201 or 202. Ethnographic survey of the peoples and cultures.
- 363 PEOPLES OF AFRICA (5)  
Prerequisite: Soc/Anth 201 or 202. Ethnographic survey of the peoples and cultures of Africa south of the Sahara.
- 364 PEOPLES OF THE PACIFIC (5)  
Prerequisite: Soc/Anth 201 or 202. Ethnographic survey of the peoples and cultures of the Pacific area.
- 366 COMMUNITY ORGANIZATION (5)  
Prerequisite: Soc/Anth 201 or 202. The nature of "community" analyzed in terms of changing demographic, institutional, and interpersonal patterns.
- 370 INTRODUCTION TO RESEARCH METHODS (5)  
Prerequisite: Soc/Anth 201 or 202. The nature of scientific theory; the development of social research; the basic methods and techniques of data gathering, processing, and analysis.
- 375 SOCIAL STATISTICS (3)  
Prerequisite: Soc/Anth 201 or 202, Math 240 or equivalent. Critical evaluation of descriptive statistical methods applied to research problems, with emphasis on measures of variability and association.
- 390 HISTORY OF SOCIAL THOUGHT (5)  
Prerequisite: 15 credits in sociology/anthropology or permission of instructor. The development of social thought in Europe and America with major emphasis upon the period following August Comte.



- 391 CONTEMPORARY SOCIAL THEORY (5)  
Prerequisite: 15 credits in sociology/anthropology or permission of instructor; Soc/Anth 390 recommended. Major contemporary theories of society and social organization.
- 392 THEORY CONSTRUCTION (5)  
Prerequisite: 15 credits in sociology/anthropology or permission of instructor. Problems of concept formation, operationization and selection of indices based upon philosophy of science and logic of inquiry.
- 396a,b,c HONORS TUTORIAL (3-5 ea)
- 400 SPECIAL PROJECTS (1-3)  
Prerequisites: 25 credits in Soc/Anth and permission of instructor. Supervised reading and/or research in selected areas.
- 402 ARCHEOLOGICAL FIELD METHODS (3)  
Prerequisite: permission of instructor. Site surveys and evaluation; mapping methods and recording of data; field experience in excavation techniques, preservation of artifacts.
- 403 ARCHEOLOGICAL ANALYSIS AND INTERPRETATION (3)  
Prerequisite: Soc/Anth 402 or permission of instructor. Archeological laboratory methods; artifact identification, classification, measurement; map reproduction, soil and feature profiles, use of photographs and other graphic methods.
- 411 DEMOGRAPHIC ANALYSIS (3)  
Prerequisites: Soc/Anth 311, 375, or equivalents. Theory and method of population analysis; measures of mortality, fertility and migration; population forecasting techniques.
- 417 SEMINARS (3)  
Prerequisite: permission of instructor.  
417a Human Ecology  
417b Medical Anthropology  
417c Population Problems  
417d Social Interaction and Group Dynamics  
417e Sociology of Education  
417f Mental Institutions  
417g Archeology of the Northwest  
417j Physical Anthropology  
417m Sociology of Law  
417n Contemporary Social Issues  
417p New World Archeology  
417t Drug Dependence  
417w Cross Cultural Perspectives on Warfare
- 425 CULTURE AND PERSONALITY (5)  
Prerequisites: 10 credits in sociology/anthropology and 5 credits in psychology. Relevant social and psychological theories with reference to socio-cultural influence in motivation, perception, and valuation.
- 430 THEORIES OF SOCIAL CHANGE (3)  
Prerequisite: 15 credits in sociology/anthropology or permission of instructor. Theories of change, including evolutionary, cultural, and historical; the empirical evidence on which theories are based and their utility in prediction.
- 431 SOCIAL CHANGE IN AMERICA (3)  
Prerequisite: 10 credits in sociology/anthropology or permission of instructor. Social change in the United States since 1900; contemporary theories of social change; problems in predicting change.
- 435 SOCIAL STRATIFICATION (5)  
Prerequisite: 15 credits in sociology/anthropology or permission of instructor. Differentiation and evaluation of groups and individuals in society; the consequences for behavior in different spheres of society.
- 439 SOCIETY, CULTURE, AND ART (3)  
Prerequisite: 15 credits in sociology/anthropology or permission of instructor. Relationship of folk and classical arts to larger social and cultural context in selected cultures.
- 441 PUBLIC OPINION (3)  
Prerequisite: Soc/Anth 202 or permission of instructor. Factors involved in the formation of public opinion; the role of mass media of communication and propaganda in a contemporary society.
- 445a SEMINAR IN DRUG EDUCATION (3)  
Seminar on drug usage in society; effects on the individual in pharmacological, medical, psychological and sociological areas. Review of legal and economic aspects and political-community action possible.
- 446 CRIME AND DELINQUENCY (5)  
Prerequisite: Soc/Anth 202 or permission of instructor. Definition and distribution of crime and delinquency; socio-psychological, micro-social and macro-social factors; theoretical attempts to deal with the data.
- 448 LANGUAGE IN CULTURE AND SOCIETY (5)  
Prerequisites: Soc/Anth 201 and Linguistics 200 and 201, or permission of instructor. Language as related to semantics and world view; speech communities, processes of change in language.

## *Sociology/Anthropology*

- 451 **LATIN AMERICAN SOCIETY (5)**  
Prerequisites: Soc/Anth 201, 202 or permission of instructor. Analysis of major institutions of Latin America; special attention to contemporary developments and dynamics of change; relationship of urbanization, agrarian reform, population increase and revolution to traditional values.
- 462 **INDIANS OF THE NORTHWEST COAST (3)**  
Prerequisite: Soc/Anth 201 or 202. Tribal distributions, social organization, and ecological adjustment with emphasis on the Indians of Western Washington; problems of adjustment to the modern world.
- 463 **PEOPLES AND INSTITUTIONS OF SOUTH ASIA (3)**  
Prerequisite: Soc/Anth 201 or 202. Ethnographic survey of the peoples and cultures: Pakistan to the Philippines.
- 464 **PEOPLES AND INSTITUTIONS OF EAST ASIA (3)**  
Prerequisite: Soc/Anth 201 or 202. Ethnographic survey of the peoples and cultures.
- 470 **RESEARCH (3-5)**  
Prerequisite: permission of instructor. Investigation of a problem through field or library research.
- 475 **ADVANCED QUANTITATIVE METHODS (3)**  
Prerequisite: Soc/Anth 375 or equivalent. Experimentation and tests of significance applied to research problems.
- 481 **THE CHILD IN SOCIETY (3)**  
Prerequisite: 15 credits in sociology/anthropology or permission of instructor. The nature of childhood viewed from a cross-cultural perspective.
- 482 **SOCIOLOGY OF ADOLESCENCE (3)**  
Prerequisite: junior status and permission of instructor. Adolescence viewed as a socio-cultural phenomenon, through the concepts of "Adolescent Society" and "Youth Culture," with emphasis on recent research findings.
- 483 **SOCIAL CHANGE AND THE MORAL ORDER IN RECENT LITERATURE (4)**  
Also offered as Eng 483 and Phil 483.
- 484-489 **READING AND CONFERENCE (3-5)**  
Prerequisite: permission of instructor. The specific study topic will be determined by the instructor, in consultation with each student; a list of topics is available in the department.  
484 Sociology  
485 Cultural Anthropology  
486 Archeology  
487 Demography  
488 Linguistics  
489 Physical Anthropology
- 490 **SEMINAR IN SOCIAL THEORY (3)**  
Prerequisite: permission of instructor. Selected problems in social and cultural theory with emphasis upon contemporary literature in the field.
- 494 **TEACHING-LEARNING PROCESSES IN INTRODUCTORY SOCIOLOGY (3)**  
Prerequisites: 25 credits in sociology/anthropology and permission of instructor. Practicum as discussion leaders in Soc/Anth 202.
- 495 **TEACHING-LEARNING PROCESSES IN INTRODUCTORY ANTHROPOLOGY (3)**  
Prerequisite: 25 credits in sociology/anthropology and permission of instructor. Practicum as discussion leaders in Soc/Anth 200 or 201.
- 496a,b,c **HONORS TUTORIAL (3-5 ea)**
- 497b (See 445a for title and description) (2)
- 501 **PROBLEM-FINDING AND THEORY-BUILDING (3)**  
Intended primarily for the student of sociology. Selection of a thesis subject relevant to contemporary theory; problems of operation design for empirical research.
- 511 **SEMINAR: DEMOGRAPHY (3)**  
Prerequisite: Soc/Anth 311 or equivalent, Soc/Anth 375 or equivalent, or permission of instructor. Critical review of demographic theory, methods and applications in the light of contemporary world population problems.
- 515 **SEMINAR: SOCIAL INTERACTION (3)**  
Theoretical approaches, research methods and findings concerning identity, communication, task, performance, deviation, sanctioning, leadership, and other processes occurring in face-to-face and extended social interaction contexts.
- 517 **SEMINAR: SOCIAL CONTROL AND DEVIANCE (3)**  
Critical review of theories and concepts of deviance: analytic and philosophic problems of attempts at programmed social control.

530 SEMINAR: VALUES (3)

How scholars characterize cultures as wholes by reference to value configurations, themes, world views or philosophies; difficulties in characterization of value systems in unself-conscious societies.

531 COMPLEX ORGANIZATIONS (3)

Theory and research on structure and processes of large-scale formal organizations in Western society; industrial-commercial, governmental, religious, military, political and educational organizations.

556 STUDENTS AND THE COLLEGE ENVIRONMENT (3)

Prerequisites: graduate status and permission of instructor. Historical and contemporary determinants of student subculture and its relationship to faculty, college administration and society in the academic community; particular reference to residential colleges and universities.

570 RESEARCH (3)

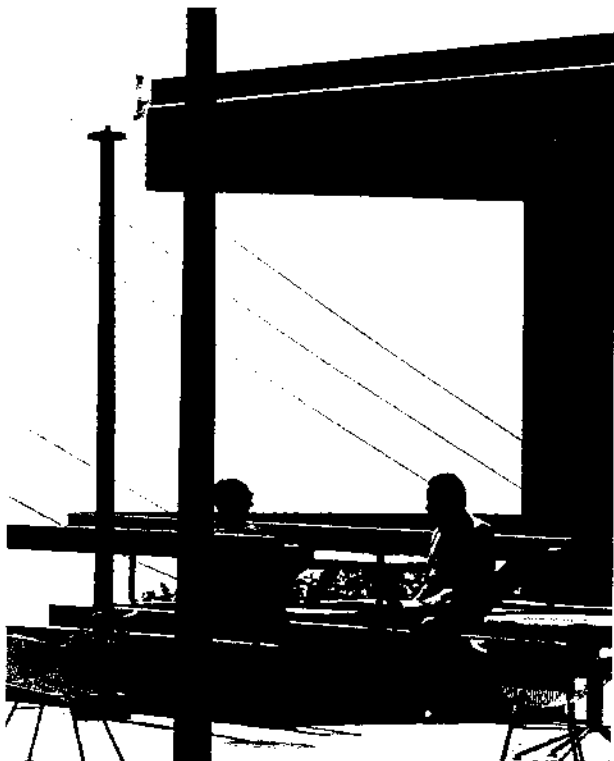
599 THESIS (3)

## SPEECH

*Professors:* Solomon (Chairman), Brewster, Carlile, Gregory, Schinske.

*Associate Professors:* Herbold, Napiecinski, Olmstead, Sigler, Webb.

*Assistant Professors:* Catrell, McElroy, Richardson, Seilo, Smith, Trew, VanderYacht.



### BACHELOR OF ARTS IN EDUCATION

*Major--General Classroom* Elementary 45 credits

- Speech 130, 203, 319, 330, 331 or 433
- Speech 354, 355, 357, 373, 430
- Electives under departmental advisement

*Major--Speech Pathology & Audiology* 45 credits

- Speech 203, 352, 354, 355, 356, 357, 361, 373, 454, 455, 461
- Seven credits in clinical practice
- Electives under departmental advisement
- Directed teaching in the public schools under the supervision of a speech therapist. This experience requires elementary classroom teaching as a prerequisite.

The American Speech and Hearing Association recommendation for certification of speech therapists includes a minimum of 90 quarter hours preparation. Such preparation would extend into the fifth year or graduate degree program. Consult the department for details.

## Speech

*Major* Secondary 45 credits

- Speech 130, 202, 205 or 486, 236, 236a, 302, 319,
- Speech 332, 337, 350, 485
- Electives under departmental advisement

*Minor—General Classroom* Elementary 25 credits

- Speech 484
- One of the following communication skills courses taken under departmental advisement: Speech 203, 204, 302, 319
- Three courses from: Speech 330, 350, 354, 355, 373, 385
- Electives under departmental advisement

*Minor* 25 credits

- Speech 130, 205 or 486, 236, 319, 337, 402, 485
- Electives under departmental advisement

*Interdisciplinary Major Concentration* 80 credits

(Satisfies both major and minor and leads to teaching competency in both speech and English.)

*Speech* 40 credits

- Speech 130, 202, 205 (or 4 credits in 206 or 486), 235, 319, 332, 337
- Speech 340 (or Journalism 340 or 406), 350
- Speech 405 (or 204 or 307), 485
- One course from: Speech 402, 407, 480, 481, 483, 490, 491
- One course from: Speech 424, 425, 426, 427a,b,c

*English* 40 credits

- English 261, 263
- Two courses from English 321-326 series
- Two courses from English 331, 332, 333
- English 343, 386, 390, 405a or 405b, 496
- Electives in English under departmental advisement

## BACHELOR OF ARTS

*Major* 50 credits

- Common Core: Speech 130, 340, 350
- Two courses from General Speech
- Specialization of 20 credits from one of the major areas:
  - Rhetoric and Public Address
  - Speech Pathology and Audiology
  - Theatre and Dramatic Arts
- Electives under departmental advisement

*Minor* 25 credits

- Speech 130, 340, 350
- Electives under advisement from the above three areas

## GRADUATE STUDY

For concentrations in speech or speech pathology and audiology leading to the Master of Education or Master of Arts degree, see *Graduate Bulletin*.

## COURSES IN SPEECH

*Courses in the Department of Speech cover a range of subject matter specializations. For ready reference, courses may be classified as follows:*

*GENERAL EDUCATION* 100 and 301

*GENERAL SPEECH*--203, 303, 319, 345, 346, 350, 373, 419, 478, 484, 485, 501, 502, 585, 599

*RHETORIC AND PUBLIC ADDRESS*--202, 204, 205, 206, 240, 241, 302, 307, 340, 341, 400, 401, 402, 404, 405, 407, 441, 480, 481, 482, 483, 486, 487, 488, 490, 491, 500, 505, 507, 540, 541, 595

- SPEECH PATHOLOGY AND AUDIOLOGY*—352, 354, 355, 356, 357, 358, 359, 360, 361, 400, 451, 452, 454, 455, 456, 461, 462, 463, 465, 500, 550, 551, 552, 553, 554, 557, 558, 559, 560, 561, 562, 563, 564, 573, 574
- THEATRE AND DRAMATIC ARTS*—130, 230, 231, 232, 235, 236, 236a, 237, 238, 310, 320, 325, 330, 331, 332, 333, 335, 336, 337, 338, 385, 400, 410, 420, 421, 422, 423, 424, 425, 426, 427a, 427b, 427c, 430, 431, 432, 433, 435, 436, 437, 438, 439, 500, 511, 527a, 527b, 527c, 527d, 527e, 528, 530, 537, 538, 539
- 100 FUNDAMENTALS OF SPEECH (3)  
Functional approach to effective communication; application of principles to practical problems of speech. Teacher education sophomores (or above) needing the general education requirement are advised to take Speech 301.
- 130 INTRODUCTION TO THE THEATRE (3)  
Appreciation and overview of the art of theatre.
- 202 PARLIAMENTARY LAW (1)  
Parliamentary principles and procedures.
- 203 VOICE AND ARTICULATION IMPROVEMENT (3)  
Background on the speaking process; theory and practice designed to improve articulation, projection, and vocal quality. (See Speech Office for Exemption Test.)
- 204 DISCUSSION AND CONFERENCE (3)  
Fundamentals of effective participation in small problem solving groups with topics of current interest.
- 205 ARGUMENTATION AND DEBATE (4)  
Application of principles of reasoned discourse to public discussion of controversial issues; the theory of debate.
- 206 INTERCOLLEGIATE FORENSICS (1-3)  
Impromptu, extempore, and after-dinner speaking; oratory, debate, and other phases of forensics. A maximum of 6 credits may be earned in intercollegiate forensics.
- 230, 231, 232 THEATRE THEORY AND PRODUCTION (2 ea)  
Instruction and experience in all aspects of theatre organization and production. A maximum of 6 credits may be earned.
- 235 DESIGN FOR THE STAGE (3)  
Aesthetic principles common to all contributory arts of the theatre; practical problems in scenic and costume design.
- 236 INTRODUCTION TO STAGECRAFT AND LIGHTING (5)  
Basic theory of planning, drafting, construction, and rigging of scenery and lighting. Practical laboratory experiences in scenery construction; painting, handling and rigging of scenery and lighting; scene shop assignment on one production; backstage assignment on second.
- 236a STAGECRAFT LIGHTING LABORATORY (2)  
Prerequisite: Speech 236 or concurrent. Practical experience in planning, handling and rigging stage lighting and special effects; assignments on two major productions.
- 237 STAGE MAKE-UP (2)  
Theory and practice of applying make-up for the stage.
- 238 STAGE COSTUMING (3)  
Prerequisite: Speech 235 or permission. Costume design and execution; specific emphasis on draping and rudimentary flat pattern techniques.
- 240\* INTRODUCTION TO BROADCASTING (3)  
Theory and technique of basic broadcast procedures; use of recording and transmitting equipment; fundamentals of broadcast speech; contemporary broadcast facilities and practice.
- 241 BROADCAST COMMUNICATION I (3)  
Prerequisite or concurrent: Speech 240, or permission. Laboratory practice in applying communication skills to broadcast media; gathering, preparation, and delivery of news.
- 301 SPEECH FOR THE TEACHER (3)  
Open only to teacher education students without Speech 100. Theory and practice, when applicable, in discussion, oral interpretation, public speaking, speech science, theatre.
- 302 PUBLIC SPEAKING (3)  
Prerequisite: Speech 100 or 301. Theory and practice in the art of public discourse.
- 303 VOICE IMPROVEMENT FOR PUBLIC PERFORMANCE (3)  
Advanced training of the speaking voice for professional use.
- 307 THEORIES OF COMMUNICATION (4)  
Theory and process; contributions of social sciences to communication theory; patterns of communication behavior.

## Speech

- 310 INTRODUCTION TO HISTORY OF THE THEATRE (5)  
Development of theatre arts from primitive origins to the present.
- 319 ORAL INTERPRETATION (3)  
Art and techniques of oral interpretation as method of literary criticism and means of communicating total meaning of a literary work to an audience.
- 320 SHAKESPEARE (3)  
Survey of principal plays. Also offered as English 343.
- 325 REPRESENTATIVE PLAYS (5)  
Introductory survey of historically significant and stage-worthy plays from all periods.
- 330 INTRODUCTION TO CHILD DRAMA (3)  
Prerequisite: Speech 130, or permission of instructor. Children's theatre, creative dramatics, puppetry; history, value, philosophy and literature of child drama; its uses in theatre, speech therapy, education and recreation.
- 331 PUPPETRY (3)  
Prerequisite: Speech 330 or permission of instructor. Design, construction, and manipulation of puppets; their use in productions for the child audience, in speech therapy, in elementary education, and as a craft for children.
- 332 ACTING I (3)  
Prerequisite: Speech 130 or permission of instructor. Fundamentals of acting; emphasis on improvisation, pantomime, and basic stage movement.
- 333 ACTING II (3)  
Prerequisite: Speech 332. Major exercise in body and voice applied to the realistic convention of acting.
- 335 ADVANCED STAGECRAFT (3)  
Prerequisite: Speech 236. Technical analysis of scripts; special effects and properties; laboratory work on productions.
- 336 ADVANCED STAGE LIGHTING (3)  
Prerequisite: Speech 236a. Technical and artistic study of light and color as they affect other theatre arts and contribute to artistic design; laboratory work in production.
- 337 PLAY DIRECTION I (3)  
Theory and practice of stage direction including selection of play, casting and blocking, and production of a scene for public performance.
- 338 HISTORIC COSTUME FOR THE STAGE (3)  
Evolution of fashion from ancient Greece through the 19th century with reference to contemporary representation.
- 340 INTRODUCTION TO MASS COMMUNICATION MEDIA (3)  
Development of mass media; newspapers, films, radio and television; their contemporary role in society.
- 341 BROADCAST COMMUNICATION II (3)  
Prerequisites: Speech 241, 340, or permission of instructor. Laboratory practice in production of news and public service programs.
- 345 THE ART OF FILM (3)  
Film as distinguished from but related to other art forms; film aesthetics; technology.
- 346 FILM GENRE (3)  
Prerequisite: Speech 345. Distinctive elements of melodrama, comedy, serious drama, documentary, fantasy.
- 350 SPEECH SCIENCE (4)  
Bases of verbal communication; physical, physiological, phonetic, psychological, and semantic bases of speech; practice in phonetic transcription.
- 352 ANATOMY AND PHYSIOLOGY OF SPEECH MECHANISMS (4)  
Structure and function of organs concerned with audition, cerebration, respiration, phonation, resonance, articulation.
- 354 SPEECH AND LANGUAGE DEVELOPMENT IN CHILDREN (3)  
Normal speech and language acquisition; its impact on the developing child; origins and growth of symbolic processes, developmental norms; factors influencing learning of language and speech.
- 355 INTRODUCTION TO SPEECH CORRECTION (3)  
Survey of speech disorders; identification, classification, and the fundamentals of therapy.
- 356 ARTICULATION DISORDERS AND THERAPY (3)  
Prerequisites: Speech 352, 355. Symptomatology, etiology, and therapy for articulation disorders.
- 357 OBSERVATION OF SPEECH AND HEARING THERAPY (1)  
Prerequisite: Speech 355 or concurrent. Directed observation and evaluation of the methods, materials, and techniques used in treating speech and hearing cases.

- 358 INTRODUCTION TO CLINICAL PRACTICE IN SPEECH THERAPY (3)  
Prerequisites: Speech 352, 354, 355, 356, 357, 373. Supervised clinical practicum in therapy for the more prevalent voice and articulation disorders.
- 359, 360 CLINICAL PRACTICE IN SPEECH THERAPY (2 ea)  
Continuation of Speech 358.
- 361 DELAYED SPEECH AND LANGUAGE (3)  
Prerequisites: 354, 355, 357. Etiologies of delayed speech and language syndrome; diagnosis and treatment procedures.
- 373 PHONETICS (3)  
Training in recognition and production of sounds of spoken English through use of the International Phonetic Alphabet.
- 385 CREATIVE DRAMA FOR THE ELEMENTARY TEACHER (3)  
Principles of drama and methods of using creative drama for children in the classroom; lectures, demonstrations, laboratory. Not open to those with credit in Speech 430 or 431.
- 400 SPECIAL PROBLEMS (1-3)  
Prerequisite: permission of instructor. Investigation of special problems in the fields of speech.
- 401 SPEECH WRITING (3)  
Prerequisite: Speech 100 or 301. Manuscript preparation for selected audiences; theory and practice.
- 402 ADVANCED PUBLIC SPEAKING (3)  
Prerequisite: Speech 302. Practical application of communication theory to contemporary issues.
- 404 DISCUSSION LEADERSHIP (4)  
Prerequisite: Speech 204 or permission. Principles, concepts and procedures of leadership in formal and informal meetings.
- 405 PERSUASION (4)  
Study of principles that influence attitudes and opinions in persuasive situations.
- 407 INTERPERSONAL COMMUNICATION (4)  
Communication facilitation and breakdown; training and experience in sensitivity, listening, and communicative relationships within the small group setting.
- 410 TWENTIETH CENTURY THEATRE (3)  
Prerequisite: Speech 310. Significant practices, trends, and figures in contemporary European and American theatres.
- 417a APPROACHES TO COMMUNICATION A (3)  
(For EPDA Fellows only.) Study of language forms known as "primitive, deprived, or subcultural." Methods of delivery such as written, video, and verbal. Patterns will be studied from a historical point of view.
- 417b APPROACHES TO COMMUNICATION B (3)  
(For EPDA Fellows only.) Practical application of learnings developed in Section A. A classroom and field project providing the student with a wide range of experiences.
- 419 ADVANCED ORAL INTERPRETATION (3)  
Prerequisite: Speech 319. Readings in the scholarship of oral interpretation and related literature in aesthetics and literary criticism; laboratory work in Readers Theatre.
- 420 STUDIES IN SHAKESPEARE (3)  
Prerequisite: English 343 or Speech 320. Seminar in selected plays. Also offered as English 443.
- 421, 422, 423 DEVELOPMENT OF THE ENGLISH DRAMA (3 ea)  
Historical and critical survey of the English drama, with emphasis upon the greater writers (exclusive of Shakespeare); medieval and Elizabethan-Jacobean; 1660-1900; 20th century. (Also offered as English 461, 462, 463.)
- 424 MODERN AMERICAN DRAMA (3)  
American plays and playwrights from 1920 to 1950.
- 425 MODERN EUROPEAN DRAMA (3)  
Ibsen and Strindberg as the founders of the modern drama; selected plays from 1850 to 1920.
- 426 CONTEMPORARY DRAMA (3)  
Selected plays and significant trends in contemporary European and American drama.
- 427a,b,c MAJOR DRAMATISTS (3 ea)  
Prerequisite: 6 credits in theatre literature. In depth treatment of playwrights influential in development of drama.  
427a European  
427b English  
427c American

## Speech

- 430 CREATIVE DRAMATICS (3)  
Prerequisite: Speech 330. Developing original dramatizations with children; the observation of children's classes in creative dramatics; story selection, story telling, and story dramatization.
- 431 CREATIVE DRAMATICS LEADERSHIP (3)  
Prerequisite: Speech 430. Advanced techniques; supervised teaching.
- 432 PERIOD STYLES IN ACTING (3)  
Prerequisite: Speech 333. Problems in playing the classical repertoire; emphasis on Shakespearian tragedy and Restoration comedy.
- 433 CHILDREN'S THEATRE (3)  
Prerequisite: Speech 330. Plays for children; play selection, play direction, and play production.
- 435 SCENIC DESIGN (3)  
Design for the modern theatre; emphasis on interpretation of the play through design; practical designs and techniques.
- 436 TOURING THEATRE (3)  
Prerequisite: permission of instructor. Theory and principles of touring technique and problems; participation in college theatre touring program.
- 437 PLAY DIRECTION II (3)  
Prerequisite: Speech 337. Producing and directing a one act play for public performance; special emphasis on working with the actor.
- 438 PLAY DIRECTION III (3)  
Prerequisite: Speech 437. Producing and directing a full length play for public performance; emphasis on problems in high school, community and professional theatres.
- 439 PROFESSIONAL TECHNIQUES IN THEATRE ARTS (2-6)  
Theoretical instruction and correlated laboratory experience in acting, directing, stage design, costuming, business management.
- 441 PRODUCING AND DIRECTING THE BROADCAST PROGRAM (4)  
Prerequisite: Speech 341 or permission of instructor. Production and direction for radio and closed circuit educational television; preparation and execution of scripts; studio practice with radio and television equipment.
- 445a NEW DEVELOPMENTS IN THE ART OF FILM (3)  
New developments in film as an art form. The course will cover the latest experiments in new methods of expression, as they would be defined by aesthetic principles. (Extension)
- 452 DIAGNOSTIC METHODS IN SPEECH AND LANGUAGE PATHOLOGY (3)  
Prerequisites: Speech 354, 358, 359, 361. Methods, procedures, techniques, and instruments; supervised practice; planning therapy.
- 454 INTRODUCTION TO STUTTERING: THEORY AND THERAPY (3)  
Prerequisites: Speech 355, 357. Characteristics of stuttering behavior; current theories of etiology of stuttering; principles and practices of therapy; cluttering as a related disorder.
- 455 SPEECH THERAPY IN THE PUBLIC SCHOOLS (3)  
Prerequisites: Speech 355 and 357. Role of the clinician in organizing and directing a speech therapy program.
- 456 ORGANIC SPEECH DISORDERS (3)  
Prerequisites: Speech 355 and 357. Symptomatology, etiology, and therapy for cerebral palsy, cleft palate, aphasia, dysarthria, and laryngectomy.
- 461 INTRODUCTION TO AUDIOLOGY (5)  
Structure and function of auditory mechanism; basic acoustics as related to determination of hearing level; psychophysics of audition; nature of hearing loss.
- 462 AUDIOMETRIC TESTING (4)  
Prerequisite: Speech 461. Theory and application of pure tone and speech audiometry to evaluation of hearing function; implications for rehabilitation.
- 463 AURAL REHABILITATION (5)  
Prerequisite: Speech 461. Principles, procedures, and techniques of hearing aid evaluation, auditory training; speech reading and language for the aurally handicapped.
- 465 SIGN LANGUAGE OF THE DEAF (2)  
Theory and practice in use of the manual language methods for communication with the deaf. (Extension, 1971)
- 478 SEMANTICS (3)  
Functions of language; ways in which language is used; its relationship to thought and action.



- 480 THE HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS: 1740-1890 (3)  
Prerequisite: some background in American history. Relationship of prominent speakers to American political, social, and intellectual life; from Jonathon Edwards through Booker T. Washington.
- 481 HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS: 1890-PRESENT (3)  
Prerequisite: some background in American history. Relationship of prominent speakers to American political, social, and intellectual life; William Jennings Bryan to contemporary speakers.
- 482 HISTORY AND CRITICISM OF BRITISH PUBLIC ADDRESS (3)  
Prerequisite: some background in British history. Examination and analysis of representative speeches of selected British orators; 1700-present.
- 483 HISTORY AND CRITICISM OF CANADIAN PUBLIC ADDRESS (3)  
Critical examination of speakers and speeches concerned with significant issues—emphasizing those involving the U.S.A.—from 1800 to the present.
- 484 SPEECH FOR THE ELEMENTARY TEACHER (3)  
Methods of utilization of the speech arts in the elementary classroom.
- 485 TEACHING SPEECH IN THE SENIOR HIGH SCHOOL (3)  
Prerequisite: 15 credits in speech, or permission of instructor. Materials and methods useful in teaching drama, interpretation, and public address.
- 486 DIRECTING THE FORENSIC PROGRAM (4)  
Directing a forensics program, including a tournament; criticizing debates, orations, etc.; budgeting funds.
- 487 DISCUSSION TECHNIQUES FOR TEACHERS AND ADMINISTRATORS (3)  
Cultivation of attitudes and skills to aid teachers and administrators to engage in and lead discussions with greater competency.
- 488 PUBLIC SPEAKING FOR TEACHERS AND ADMINISTRATORS (3)  
Development of additional skill in meeting speech situations in the field of education; delivery, composition, audience analysis, and interests.
- 490 RHETORICAL THEORY AND PRACTICE—GREEK AND ROMAN (4)  
Rhetorical principles and practices from the early Greek to the fall of the Roman Empire.
- 491 RHETORICAL THEORY AND PRACTICE—MEDIEVAL THROUGH MODERN (4)  
Rhetorical principles and practices from the sixth to the twentieth centuries.
- 497c SPEECH IMPROVEMENT FOR THE ELEMENTARY GRADES (3)  
Prerequisite: teaching experience. Methods and techniques for the improvement of the child's oral communication skills; articulation, voice, rhythm, and language.
- 497d SIGN LANGUAGE OF THE DEAF (2)  
Theory and practice in the use of the manual language methods for communication with the deaf.
- 497e BUSINESS, PROFESSIONAL, AND GOVERNMENTAL PUBLIC SPEAKING (3)  
Theory and practice in the following: analysis of audiences and occasions; researching of subjects; organization of materials and translation into oral language; preparation of reading manuscripts and cue-note outlines; presentation to simulated, specialized audiences with feedback and criticism. No prerequisites, but some experience in public speaking would be desirable.
- 497f PRODUCING AND MODERATING TELEVISION DISCUSSION (3)  
Theory and practice in planning and leading on-camera discussion. Topic determination, discussion outline preparation, panelist selection, pre-airing briefing, group management, and facilitation of participation. Presentations will be video-taped for playback and criticism. Performances will occur in studios comparable to those used by the broadcasting industry.
- 497g THE LANGUAGE OF THE BIDIALECTAL AND BILINGUAL CHILD (3)  
Prerequisite: Speech 354. Discussion of ethnic and social dialects and bilingualism with investigations into current research on "standard" versus "non-standard" English. Determination of "true" speech/language deficits in the bidialectal and bilingual child.
- 500 SPECIAL PROBLEMS (1-3)  
Prerequisite: permission of instructor. For advanced students who wish to investigate special problems.
- 501 INTRODUCTION TO RESEARCH IN SPEECH (4)  
Interpretation and evaluation of research outcomes; purpose and design of various methods, with particular emphasis on historical and descriptive methods.
- 502 BEHAVIORAL RESEARCH IN SPEECH (4)  
Introduction to empirical research; basic methodology applied to current research in communication and speech.

## Speech

- 503 WRITING SEMINAR: THE RESEARCH MONOGRAPH IN SPEECH (3)  
Prerequisite: Speech 501 or 502. The planning and writing of a scholarly article based on research and suitable in subject, content, method, form and style for submission to one of the journals in the field of speech.
- 505 SEMINAR IN PERSUASION (3)  
Prerequisite: Speech 405. Readings in persuasion; logical and psychological modes of proof.
- 507 SEMINAR IN COMMUNICATION (4)  
Interpersonal communication in both group and dyadic situations; communication choice, social context, channels and nonverbal interaction.
- 511 SEMINAR IN DRAMATIC THEORY AND CRITICISM (4)  
Prerequisite: undergraduate major in speech or permission of instructor. Evaluating concepts, principles and issues dominant in main periods of dramaturgical thought.
- 527 SEMINAR IN MAJOR DRAMATISTS AND DRAMATIC PERIODS (3)  
Prerequisite: 6 credits in dramatic literature. Intensive study of life and works of playwright or period selected.  
527a Ibsen  
527b Strindberg  
527c Shaw  
527d The Dramatic Literature of Greece  
527e The Drama of the French Neo-Classical Period
- 528 GREAT PLAYS FOR THE SECONDARY SCHOOL STAGE (3)  
Finest plays of past and present from point of view of production on secondary school stage.
- 530 SEMINAR IN CHILD DRAMA (3)  
Prerequisite: Speech 430 and 433. Critical review of theories and research findings in children's theatre and creative dramatics; individual artistic or research projects.
- 537 SEMINAR IN PLAY DIRECTION (4)  
Prerequisite: Speech 438. Theories of play direction beginning with the emergence of the director in the work of the Duke of Saxe-Meiningen and including Stanislavsky, Craig, Meyerhold, Brecht, Reinhardt, Littlewood, Artaud, and Grotowski.
- 538 PLAY ANALYSIS AND THEATRE PRODUCTION PLANNING (3)  
Theories of play analysis and theatre production organization from point of view of the play director preparing to produce a play.
- 539 INTERNSHIP IN THEATRE ARTS (3)  
Prerequisite: permission of instructor. Experimentation leading to development of new methods and materials in the teaching and practice of theatre; supervised assistance in curricular and co-curricular programs in theatre.
- 540 SEMINAR IN MASS COMMUNICATIONS (3)  
Prerequisite: undergraduate major in speech, or permission of instructor. Critical issues in the development, structure, and function of mass communications in a democratic society; responsibilities, means of control, and regulation.
- 541 EDUCATIONAL BROADCASTING (3)  
Prerequisite: permission of instructor. Educational use of radio and television.
- 550 VOICE DISORDERS AND THERAPY (3)  
Prerequisite: Speech 352, 355. Pathological and psychological states affecting voice production; functional psychogenic and organic problems of pitch, quality, loudness. Experience in diagnosis and evaluation of voice disorders. Developing techniques and methods for treatment and therapy.
- 551 SEMINAR IN SPEECH DISORDERS: THEORY AND THERAPY (3)  
Prerequisite: experience as a speech and/or hearing therapist and permission of instructor. Analysis and evaluation of recent concepts, issues, techniques, and methods applicable to speech disorders.
- 552 ADVANCED DIAGNOSTIC METHODS IN SPEECH AND LANGUAGE PATHOLOGY (3)  
Prerequisite: Speech 452. Specialized methods, tests, and instruments used in diagnosis of more complex morphological and neuropathological disorders; supervised practice.
- 553 SEMINAR: LANGUAGE DISORDERS (3)  
Prerequisites: graduate status, Speech 354, 361. Abnormal speech and language acquisition and development with special focus on current research findings; communication disruption as result of brain injury, mental retardation, emotional disturbances and other organic and functional conditions.
- 554 SEMINAR: STUTTERING (3)  
Prerequisite: graduate status, Speech 454. Critical analysis of recent research findings relating to stuttering and cluttering disorders; chief rationale for therapy and evaluation of therapy procedures and results.

## 556 APHASIA AND KINDRED DISORDERS (3)

Prerequisites: Speech 355, 357, 456. Diagnosis and treatment of language impaired adults with specific brain injury patterns; aphasia, apraxia, dysarthria, etc.

## 557 INTERNSHIP IN SPEECH PATHOLOGY AND THERAPY (3)

Prerequisites: experience as a speech therapist and permission of instructor. Experimentation with new methods and materials, and clinical implementation of current practices; planning, directing, and supervising speech clinicians.

## 558 ADVANCED CLINICAL PRACTICE IN SPEECH THERAPY (3)

Prerequisite: Speech 360. Supervised clinical practicum dealing with more complex cases.

## 559, 560 ADVANCED CLINICAL PRACTICE IN SPEECH THERAPY (2 ea)

Prerequisite: Speech 558. Continuation of Speech 558.

## 561 SEMINAR IN AUDIOLOGY (3)

Prerequisite: graduate status, Speech 461. Study of research in basic auditory correlates: auditory process, psychoacoustics, psychophysical methods, and the psychological manifestations.

## 562 ADVANCED AUDIOMETRY (3)

Prerequisite: graduate status, Speech 462. Theory and application of advanced diagnostic audiometric procedures.

## 563 SEMINAR IN AURAL REHABILITATION (3)

Prerequisite: graduate status, Speech 463. Research in the training of the hearing handicapped.

## 564 CLINICAL PRACTICE IN AURAL REHABILITATION (2)

Prerequisites: Speech 358, 463. Supervised practice in rehabilitation of the hard of hearing.

## 573 ADVANCED PHONETICS (3)

Prerequisite: Speech 373. The phonetic structure and symbolization of principal American and other English dialects and certain European languages.

## 574 EXPERIMENTAL PHONETICS (3)

Prerequisite: Speech 573. Study of laboratory investigations of phonetic problems; analysis and measurement of variables in speech production.



## 575 INTERVIEWING AND COUNSELING TECHNIQUES FOR THE SPEECH AND HEARING CLINICIAN (5)

Prerequisite: experience as a speech therapist and permission of instructor. Readings, discussion and supervised practice in the counseling of parents having speech and hearing handicapped children.

## 585 INTERNSHIP IN THE TEACHING OF COLLEGE SPEECH (3)

Prerequisite: permission of instructor. Supervised teaching of the basic speech course.

## 586 INTERNSHIP IN RHETORIC AND PUBLIC ADDRESS (3)

Prerequisite: permission of instructor. Supervised teaching of courses and/or units within courses in the area of rhetoric and public address and, where appropriate, assistance in the co-curricular programs of this area. A Field Project Report will be required of those taking the course to fulfill the M.A., Option II requirement.

## 595 SEMINAR IN RHETORICAL CRITICISM (4)

Prerequisite: graduate status and Speech 501. Literature of rhetorical criticism and the application of rhetorical theory so gleaned in the criticism of significant speeches.

## 599 THESIS (6-9)

# TECHNOLOGY

*Professors:* Porter (Chairman), Schwalm.  
*Associate Professors:* Black, Channer, Fowler, Hill, Olsen, Seal, Southcott, Vogel.  
*Assistant Professors:* Jasnosz, Moon.

## BACHELOR OF ARTS IN EDUCATION

(Industrial Arts)

*Major* Secondary 50 credits

- Technology 210, 214, 391, 491, 493
- 17 credits from Tech 160, 223, 225, 231, 240, 270, 280, 333
- 18 credits from one or two of the following technologies:
  - (a) Visual Communications Technology (industrial graphics, graphic arts, photography, industrial design, VICOED program)
  - (b) Materials and Processes Technology (woods, metals, plastics, crafts)
  - (c) Mechanical and Electrical Technology (electricity, electronics, power mechanics)

*Major Concentration* Secondary 70 credits

(Satisfies requirements for both a major and a minor.)

- Tech 210, 214, 391, 491, 493
- 17 credits from Tech 160, 223, 225, 231, 240, 270, 280, 333

- 19 credits in supporting courses selected under departmental advisement from courses *such as* Art 101, 102, 230, 240, 270; Chemistry 115, 121, 122, 123, 208, 251; Economics 201, 202, 325; Home Economics 334, 370, 375, 476; Math 220 (or 122), 240; Computer Science 110 or 210; Physics 132, 133
- 19 credits from one or two of the following technologies:
  - (a) Visual Communications (industrial graphics, graphic arts, photography, industrial design, VICOED program)
  - (b) Materials and Processes (woods, metals, plastics, crafts)
  - (c) Mechanical and Electrical (electricity, electronics, power mechanics)

*Minor* 25 credits

Courses to be selected under departmental advisement.

*Teaching Competence*

Recommendation for teaching competence normally requires completion of the major.

## BACHELOR OF ARTS DEGREE

(Industrial Technology)

*Major* 50 credits plus supporting courses

- 25 credits in lower division technology courses
- 25 upper division credits in technology including 20 credits in one of the following technologies:
  - (a) Visual Communications (industrial graphics, graphic arts, photography, VICOED program)
  - (b) Materials and Processes (woods, metals, plastics)
  - (c) Mechanical and Electrical (electricity, electronics, power mechanics)

- (d) Industrial Design
- Supporting courses: Chem 115 or 121; Physics 131; Math 220 or 122; Computer Science 210; Economics 201 and one of the following: Economics 325, Economics 338, or Bus Admin 322

*Minor* 25 credits

Courses to be selected under departmental advisement.

## BACHELOR OF SCIENCE DEGREE

(Industrial Technology)

*Major Concentration* 110 credits

(Satisfies both a major and a minor.)

- 25 credits in lower division technology courses
- 46 upper division credits in technology including 20 credits in one of the following technologies:
- Visual Communications (industrial graphics, graphic arts, photography, VICOED program)
  - Materials and Processes (woods, metals, plastics)
  - Mechanical and Electrical (electricity, electronics, power mechanics)
  - Industrial Design
- Supporting courses: Physics 131; Math 220 or 122, 240; Computer Science 210; Economics 201, 202, and any one of the following: Economics 325, 338, or Bus Admin 322; any one of the following chemistry sequences: (a) Chem 121, 122, 123 (b) Chem 115, 208, 209 (c) Chem 115, 251
- 25 lower 25 upper 25 credits + Supporting Co. Required*

*Minor* 25 credits

Courses selected under departmental advisement.

*Visual Communications*

*(VICOED) Concentration*

See Interdepartmental Programs, page 207, for specifications.

## GRADUATE STUDY

For a concentration in industrial arts leading to the degree of Master of Education, see *Graduate Bulletin*.

## COURSES IN TECHNOLOGY

*Courses in technology cover a wide range of subject areas. For ready reference, courses may be classified as follows:*

*Visual Communications Technology* 160, 210, 211, 212, 240, 260, 265, 310, 312, 313, 340, 341, 362, 363, 413, 419, 440, 441, 447, 448, 449, 460, 469, 540, 541, 542, 543, 544

*Materials and Processing Technology* -223, 225, 231, 303, 320, 324, 325, 326, 328, 331, 333, 417a,c, 420, 422, 425, 429, 433, 434, 439

*Mechanical and Electrical Technology* 270, 280, 281, 370, 371, 372, 375, 379, 381, 382, 477, 478, 479, 489

*Industrial Design* 214, 215, 315, 316, 317, 416, 418

*Driver Education* 480, 481, 482, 483

*General and Professional Courses* -101, 201, 301, 304, 350, 391, 394, 400, 417b, 459, 491, 492, 493, 495, 496, 497k, 497m, 590, 591, 594, 595

### 101 ORIENTATION TO INDUSTRIAL ARTS AND TECHNOLOGY (2)

The areas of technology, programs of studies, and career opportunities. Recommended for freshmen and new transfer students who seek information on the area.

### 160 TECHNICAL FUNDAMENTALS OF PHOTOGRAPHY (2)

A non-laboratory approach to the basic technical concepts.

### 210 INDUSTRIAL GRAPHICS (3)

Experience in expressing ideas through visual communication utilizing the principles and techniques of industrial graphics; technical freehand sketching, multiview projections, supplemental views, and pictorial representations.

### 211 INDUSTRIAL GRAPHICS (3)

Prerequisite: Tech 210. Continuation of drafting techniques, emphasizing working drawings of machine parts, double auxiliary views, fasteners, developments, pictorial representations, and duplication methods.

## Technology

- 212 GRAPHIC ANALYSIS (3)  
Prerequisite: Tech 210. Relationship of points, lines, and planes in space with application to vector, motion, and mechanical analysis.
- 214 FUNDAMENTALS OF PRODUCT DESIGN (3)  
Basic design concepts and aesthetics of form, color, and space involved in the design process. Considered preliminary to courses in design with graphic media, wood, plastics, metals, and industrial design.
- 215 EVOLUTION IN INDUSTRIAL DESIGN (3)  
Interrelationship with the arts, sciences, and society; designers, their philosophies and resultant impact on culture.
- 223 GENERAL METALS (5)  
Introduction to metals, processing operations: forming, casting and molding, shaping—cutting; assembly and auxiliary operations.
- 225 INDUSTRIAL MATERIALS (3)  
Prerequisite: general education chemistry and mathematics requirements, or equivalent. Materials of industrial technology; introduction to the science of materials.
- 231 GENERAL WOODS (3)  
Wood as a medium of design; construction experiences in the common tools and processes.
- 240 VISUAL COMMUNICATION AND GRAPHIC ARTS (5)  
Survey of the visual communications field including visual communications theory, information design, reproduction, presentation, and management; involves the print and non-print media.
- 260 GENERAL PHOTOGRAPHY (3)  
Prerequisite: Tech 160 or permission of instructor. Application of photographic technique.
- 265 FUNDAMENTALS OF CINEMATOGRAPHY (3)  
Planning, photographing, and editing motion pictures; producing single concept films.
- 270 APPLIED ELECTRICITY (3)  
Principles and concepts of electricity; laboratory experiences with electrical components, circuits, and measuring equipment.
- 280 POWER MECHANICS (3)  
Design principles of major power sources; techniques of torque and power measurement.
- 281 POWER TRANSMISSION (3)  
Principles and practice of mechanical and fluid transmission of power.
- 301 CRAFTS (3)  
Design and construction in a variety of craft materials.
- 303 FINISH PRINCIPLES AND PRACTICE (3)  
Introduction to modern finishing materials and processes.
- 310 TECHNICAL ILLUSTRATION (3)  
Prerequisite: Tech 210. Translation of orthographic drawing into three-dimensional drawings through the use of isometric, dimetric, trimetric, perspective and schematic drafting techniques.
- 312 ADVANCED DRAFTING (3)  
Prerequisite: Tech 211. Problems in machine and pattern drafting, pictorials and architecture.
- 313 ARCHITECTURAL DESIGN AND HOUSE PLANNING (3)  
Prerequisite: Tech 210. Historical development; considerations of design; analysis of needs; utilization of sites, preparation of plans.
- 315 INDUSTRIAL DESIGN PROCESSES (3)  
Prerequisite: Tech 210. Design as a process of problem solving; problem recognition, definition resolution, and presentation; analysis of market and motivational research techniques.
- 316 DIMENSIONAL ANALYSIS IN INDUSTRIAL DESIGN (3)  
Prerequisite: Tech 315. Application of multi-view projections, pictorials, mock-ups, and prototypes to the resolution of a design problem.
- 317 PRODUCT SYNTHESIS IN INDUSTRIAL DESIGN (3)  
Prerequisite: Tech 316. Preparation of a portfolio of research sketches, working drawings, and renderings in the creation of a mock-up or prototype of an original or modified product.
- 320 ADVANCED METALS (3)  
Prerequisite: Tech 223. Continuation of general metals with emphasis on the machine tool and welding technologies.
- 324 STRENGTH OF MATERIALS (3)  
Prerequisite: general education physics and mathematics requirements, or equivalent. Stress and strain in the design of members for strength.

- 325, 326 GENERAL METALLURGY (3, 3)  
Prerequisites: Chem 115 or 121, Math 220 or 122. Tech 325 prerequisite to 326. Structure of metals, phase diagrams and heat treatments.
- 328 METALLURGY LABORATORY (1)  
Prerequisite: Tech 325. Study of metal specimens and metallography.
- 331 ADVANCED WOODS (3)  
Prerequisite: Tech 231. Skill and development in the more complex woodworking processes with related information on the woodworking industry.
- 333 PLASTICS (3)  
Prerequisite: Tech 231 recommended. The basic materials, products, and processes of the plastics industry.
- 340 GENERAL GRAPHIC ARTS I (3)  
Prerequisites: Tech 240 and concurrent enrollment in Art 371. Graphic arts technology as related to reproduction of graphic design techniques.
- 341 GENERAL GRAPHIC ARTS II (5)  
Prerequisite: Tech 340 or permission of instructor. Techniques, processes, and products of the graphic arts industry; designing, reproducing, presenting, and managing graphic materials.
- 350 INDUSTRIAL ARTS FOR ELEMENTARY SCHOOLS (3)  
Experience in working with those materials and processes basic to home and industry which contribute to the elementary school curriculum.
- 362 VISUAL COMMUNICATION PHOTOGRAPHY (3)  
Prerequisite: Tech 260 or permission of instructor. Function of photography in visual communication; application of theory and techniques to projects.
- 363 COLOR PHOTOGRAPHY (3)  
Prerequisite: Tech 260 or permission of instructor. Fundamentals of color theory; techniques of producing color transparencies and prints.
- 370 ELECTRON TUBE CIRCUITRY (4)  
Prerequisite: Tech 270 or Physics 155 or permission of instructor. Theory and application of electron tubes in basic electronic circuits.
- 371 SEMI-CONDUCTORS (4)  
Prerequisite: Tech 370 or permission of instructor. Characteristics of semi-conductor devices and circuits.
- 372 INDUSTRIAL ELECTRONICS (4)  
Prerequisite: Tech 371 or permission of instructor. Industrial uses of electronics; electron tubes, control devices, relays, and closed loop systems.
- 375 MOTORS AND GENERATORS (3)  
Prerequisite: Tech 270 or permission of instructor. Theory and characteristics of motors and generators.
- 379 VISUAL COMMUNICATION ELECTRONICS (3)  
Prerequisite: Tech 341 or permission of instructor. Principles and applications of instrumentation, electronic systems and computer graphics technology in the communication industry.
- 380 ADVANCED POWER MECHANICS (3)  
Prerequisite: Tech 280 or permission of instructor. Efficiency determinants, power measurement, development of concepts introduced in Tech 280.
- 381 ADVANCED POWER TRANSMISSION (3)  
Prerequisite: Tech 281 or permission of instructor. Practical application of hydraulic and fluidic theory; development of concepts introduced in Tech 281.
- 382 AUTOMOTIVE ELECTRICITY (2)  
Prerequisite: Tech 270 or 280 or permission of instructor. Basic principles of electrical components and systems of the automobile and other engines.
- 391 MAN AND TECHNOLOGY (3)  
Development, scope, and impact of technology upon man.
- 394 INDUSTRIAL TOURS (3)  
Visitation to selected industries of the Pacific Northwest to acquire first-hand understanding of regional industry; analysis of process, product design, and personnel problems. Summers only.
- 400 SPECIAL PROBLEMS (1-5)  
Prerequisite: permission of instructor; open only to technology majors. Specialized advanced study through individual instruction.
- 413 ARCHITECTURAL PROBLEMS (3)  
Prerequisite: Tech 313. Advanced residential planning, cost estimating; FHA standards, building codes; individual and group research.
- 416 STRUCTURAL-AESTHETIC FACTORS IN INDUSTRIAL DESIGN (5)  
Prerequisite: Tech 316 or permission of instructor. Tectonic principles applied to consumer products, problems related to functional and emotional factors of environmental design involving space, structure, furniture and lighting.

## Technology

- 417 SPECIAL INTEREST SEMINARS
- 417a Woodcarving (3)  
Prerequisite: art or industrial arts teaching experience.
  - 417b Industrial Arts in the Middle School (3)  
Prerequisite: teaching experience.
  - 417c Wood Sculpture and Design (3)  
Prerequisite: Tech 417a.
  - 417d Material Testing in Industrial Arts (3)  
Prerequisite: industrial arts teaching.
  - 417h The World of Construction (3)  
(Extension)
  - 417j Surveyor's Transit Technology (1)  
(Extension)
  - 417k The World of Manufacturing (3)  
(Extension)
- 418 DESIGN CENTER RESEARCH PROJECT (1-3)  
Prerequisite: Tech 214 or Home Econ 101 or permission of instructor. Directed research in design under the auspices of the Western Design Center.
- 419 DIRECTED RESEARCH IN DRAFTING/DESIGN (1-3)  
Prerequisite: Tech 211 or permission of instructor. Research problem in drafting or design conducted under supervision.
- 420 PHYSICAL METALLURGY (3)  
Prerequisite: Tech 326. Metals and alloys, physical characteristics, phase diagrams, relation of physical properties to microstructure.
- 425 MATERIALS SCIENCE (3)  
Prerequisites: Math 220, Chem 115 or 121 or equivalent. Properties and utilization of metals and non-metals. Relationship between properties of interest and fundamental atomic arrangements.
- 429 DIRECTED RESEARCH IN METALS (1-3)  
Prerequisites: Tech 223, 320, or permission of instructor. Selection, development, and research, under supervision, within one of the areas of metals technology.
- 433 ADVANCED PLASTICS (3)  
Prerequisite: Tech 333. Concepts of polymer science; advanced application of thermo-forming and molding processes; plastic tooling.
- 434 REINFORCED PLASTICS (3)  
Prerequisite: Tech 333. Resin and reinforcement systems; mold design and development; manufacturing processes with reinforced plastics.
- 439 DIRECTED RESEARCH IN WOODS (1-3)  
Prerequisites: Tech 231, 331, or permission of instructor. Selection, development, and research, under supervision, within one of the areas of wood technology.
- 440 GRAPHIC DESIGN (5)  
Prerequisites: Tech 341 and 362, or permission of instructor. Principles and application of effective visual communication, design, and reproduction.
- 441 GRAPHIC ARTS MANAGEMENT (5)  
Prerequisite: Tech 341 or permission of instructor. Estimating and pricing, simplified cost accounting; organization and administration of graphic arts services; production, quality and color control instruments and techniques.
- 447 PUBLICATIONS PRODUCTION (3)  
Prerequisite: concurrent enrollment in Tech 448 or permission of instructor. Experiences in design, layout, and production of publications through printed media, film, television, or other means.
- 448 VISUAL COMMUNICATION (5)  
Prerequisite: completion of the VICOED sequence or permission of instructor. Synthesis of basic concepts, models, and theories, the perceptual, social, cultural, and technological determinants of visual form, style, and content.
- 449 DIRECTED RESEARCH IN GRAPHIC ARTS (1-3)  
Prerequisite: Tech 240, 340, or permission of instructor. Selected problems in graphic arts.
- 459 DIRECTED RESEARCH IN INDUSTRIAL ARTS FOR THE ELEMENTARY SCHOOL (1-3)  
Prerequisites: Tech 350 or permission of instructor. Developing industrial arts content with emphasis on the relationship between industrial arts and the elementary school curriculum.
- 460 INDUSTRIAL PHOTOGRAPHY (3)  
Prerequisite: Tech 363 or permission of instructor. Application of photographic theory and techniques to selected problems.
- 469 DIRECTED RESEARCH IN PHOTOGRAPHY (1-3)  
Prerequisites: Tech 260 or permission of instructor. Research problems in photography chosen and conducted under supervision.
- 477 THEORY AND OPERATION OF ELECTRONIC TEST EQUIPMENT (4)  
Prerequisite: Tech 371 or permission of instructor. Theory and practice in the operation of electronic test equipment common to industrial arts electronic programs.



- 478 PRACTICAL RADIO AND TELEVISION (4)  
Prerequisite: Tech 371 or permission of instructor. Theory of radio and television transmitters and receivers.
- 479 DIRECTED RESEARCH IN ELECTRICITY (1-3)  
Prerequisite: Tech 371 or permission of instructor. Advanced study in problems chosen and conducted under supervision.
- DRIVER EDUCATION: Tech 480, 481, 482, plus one approved elective course are required for a certificate to teach driver education in a state approved course.*
- 480 SAFETY EDUCATION (3)  
The cause, incidence, and effect of home, school, recreational and vocational accidents; education programs and practices to reduce accidents.
- 481\* BASIC DRIVER AND TRAFFIC SAFETY EDUCATION (3)  
Knowledge, attitudes and skills needed to teach driver education in the secondary school; classroom instruction and in-the-car teaching experience.
- 482\* ADVANCED DRIVER AND TRAFFIC SAFETY EDUCATION (3)  
Driver and traffic safety and methods of teaching in the secondary school; classroom and in-the-car teaching experience.
- 483\* DIRECTED RESEARCH IN DRIVER AND TRAFFIC SAFETY EDUCATION (1-3)  
A special problem in driver and traffic safety.
- 489 DIRECTED RESEARCH IN POWER MECHANICS (1-3)  
Prerequisite: Tech 280, 381, or permission of instructor. Advanced study in problems chosen and conducted under supervision.
- 491 HISTORY AND PHILOSOPHY OF INDUSTRIAL ARTS (2)  
Development of programs in industrial arts and industrial-vocational education; evolving philosophies, issues, and objectives.
- 492 FACILITIES FOR INDUSTRIAL ARTS (3)  
Prerequisite: senior standing in teacher education or permission of instructor. Planning, development and utilization of industrial arts facilities.
- 493 THE TEACHING OF INDUSTRIAL ARTS (4)  
Prerequisite: admission to teacher education. Derivation and organization of content for industrial arts; principles, procedures, and problems in the teaching of laboratory courses; prerequisite to directed teaching in industrial arts.
- 495 INDUSTRIAL ENGINEERING (3)  
Prerequisites: senior status and Math 240, or permission of instructor. Organization of men and machines for work; work analysis, production control, quality control, and plant design.
- 496 ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL EDUCATION (3)  
Interrelationships of industrial arts, industrial-vocational education, adult education, technical education, and apprentice training.
- 497k INSTRUCTIONAL MATERIALS (5)  
Prerequisite: senior or graduate standing. To be taken concurrently with Tech 497m. Design and production of instructional materials, single concept motion pictures, slide presentations, video tapes, and printed materials for the course outlines developed in Tech 497m.
- 497m CURRICULUM CONSTRUCTION (5)  
Prerequisite: senior or graduate standing. To be taken concurrently with Tech 497k. Various approaches to and the development of course outlines for technical teaching areas.
- 500 SPECIAL PROBLEMS (1-5)  
Individual problems under supervision.
- 540 VISUAL COMMUNICATIONS TECHNOLOGY (3)  
Prerequisite: undergraduate concentration in the visual communications field. The technological changes in the visual communications industry and the responses.
- 541 THEORIES OF COLOR SEPARATION (3)  
Prerequisite: undergraduate concentration in graphic arts. Newer concepts and techniques of color separation as applied to the graphic arts industry.
- 542 INFORMATION FORMS DESIGN AND PRODUCTION (3)  
Prerequisite: undergraduate concentration in graphic arts. Differentiation and necessity for integrating information forms design into more productive systems.
- 543 PRINCIPLES OF COLOR AND QUALITY CONTROLS (3)  
Prerequisite: undergraduate concentration in graphic arts. Principles and devices for maintaining control.

*\*Not applicable to undergraduate or graduate programs in Technology.*

## *Technology*

544 SEMINAR: CURRENT VISUAL COMMUNICATIONS TOPICS (3)

Prerequisite: undergraduate concentration in the visual communications fields. Research and discussion concerning pertinent problems in the visual communications industry.

590 CURRICULUM PROBLEMS IN INDUSTRIAL EDUCATION (3)

Derivation and organization of content and experiences for industrial arts courses.

591 INDUSTRIAL TECHNOLOGY (3)

Development of trade, technical, and industrial technology; forces, concepts, issues and trends.

594 RESEARCH IN INDUSTRIAL ARTS (2)

Readings and discussion in current research topics in industrial arts.

595 GRADUATE SEMINAR (2)

Contemporary issues in industrial arts.



# INTERDEPARTMENTAL PROGRAMS

## CANADIAN AND CANADIAN-AMERICAN STUDIES

Western Washington State College is uniquely situated in respect to Canada. The international border is just a few miles to the north, and Vancouver, British Columbia, the third largest metropolis in Canada, is only an hour away. Interested students may wish to further their education through courses which focus upon Canada, its geography, history, polity, economy, educational systems, etc.

In order to assure proper organization of the program and commensurate recognition for students who engage in it, a minor in Canadian and Canadian-American Studies has been established. The courses are offered by participating departments. Some are regional in nature, some are national in their concern, and some are comparative. In addition, various departments offer courses in Independent Study with approved topics under direction of participating faculty members.

### *Minor* 30 credits

The minor is applicable to either the bachelor of arts or bachelor of arts in education degree. For descriptions of the individual courses, see course listings in this catalog.

- Geography 311, History 471, Political Science 406
- Remaining credits to be selected from: Education 414; Geography 411, 435; History 490d; Political Science 435, 454; Speech 483; and approved Independent Study courses in selected departments. Independent Study credit will constitute no more than five (5) out of the total thirty (30) credits required.

The following courses, while not applicable to the minor, should prove of interest to the student and are recommended: Geography 401; Education 445a; Sociology/Anthropology 462; and recommended courses in the French language.

For advisement, consult any of the following:

|                   |                  |
|-------------------|------------------|
| Education         | Prof. Margaritis |
| Geography         | Prof. Teshera    |
| History           | Prof. Gough      |
| Political Science | Prof. Rutan      |
| Speech            | Prof. Olmstead   |

## EAST ASIAN STUDIES

The following minor is applicable to either the Bachelor of Arts or Bachelor of Arts in Education degree. It may be combined with a major in history or in political science for a major concentration, or may be elected as a minor by majors in other fields. For description of courses, see the sections for the Department of History and the Department of Political Science.

### *Minor* 30 credits

- History 280 and/or Pol Sci 307
- Remaining credits to be selected from:  
History 480, 481, 482, 483, 484, 485, 490g  
Pol Sci 430, 431, 432, 476

For advisement, consult Dr. Edward Kaplan, History Department, or Dr. Henry Schwarz, Political Science Department.

## GENERAL SCIENCE

Recommendation for teaching competence in general science normally requires completion of the major in general science.

### *Major* Elementary 45 credits

- Physics 131; 105 and/or Geog 331
- Chem 115 or 121; Geol 211, 212
- Biology 120, 121
- Electives under advisement\*

## Interdepartmental Programs

### Major Concentration 75 credits

This concentration satisfies both the major and the minor for junior high school teachers.

- Physical Science—25 credits under advisement,\* including Phy Sci 492, Physics 131, 132, 133, and Chem 115 or 121 or equivalent
- Biological and Earth Sciences—25 credits in one field and 15 in the other, selected under advisement, including Biol 493 or Geol 390, Physics 105 and/or 321 or equivalent
- General Science 405 or equivalent
- Electives under advisement\*

\*Dr. Irwin Slesnick, Biology Department, is the adviser for this major.

### COURSES IN GENERAL SCIENCE

#### 405 HISTORY OF SCIENCE (3)

Prerequisite: 30 credits in biological and/or physical science. The nature, methods, and development of science and the role of science in society; recommended for all science majors.

### HONORS

In order to graduate "with honors" a student must:

- (a) be recommended by the Honors Board;
- (b) have completed at least six quarters of honors work;
- (c) have written a senior thesis.

Exceptions may be made under departmental advisement and with the concurrence of the Honors Board.

A student may enter the program as late as the beginning of his junior year and still meet requirements for graduation "with honors." Special requirements for Departmental Honors work are listed under the departments concerned. A student who plans to graduate "with honors" should consult the department in which

he proposes to major early in his college career, since individual requirements vary and all programs are tailored to the individual's needs.

### HONORS COURSES (Non-departmental)

*These courses are restricted to students enrolled in the Honors Program.*

- 151, 152, 153 TUTORIAL (2 ea)
- 161, 162, 163 COLLOQUIUM (2 ea)
- 251, 252, 253 TUTORIAL (2 ea)
- 261, 262, 263 COLLOQUIUM (2 ea)
- 290 SUMMER READINGS (2)
- 300 INDEPENDENT STUDY (variable credit)
- 361, 362, 363 COLLOQUIUM (2 ea)
- 390 SUMMER READINGS (2)
- 400 INDEPENDENT STUDY (variable credit)
- 461, 462, 463 COLLOQUIUM (2 ea)
- 490 SUMMER READINGS (2)

### LINGUISTICS

#### Minors

These concentrations in general and applied linguistics may be taken by candidates for the Bachelor of Arts or the Bachelor of Arts in Education degrees. Minors are available in the departments of English, foreign languages and sociology/anthropology.

#### Basic Courses

- Linguistics 201, 202, 301, 302, 303

*Additional work* according to department chosen:

## Interdepartmental Programs

- English (Arts and Sciences)—add English 390, 490, 491
- English (Teacher Education)—see English minor with Linguistics Emphasis
- Foreign Languages (either degree)—add 6 credits selected under departmental advisement in a foreign language
- Sociology/Anthropology (Arts and Sciences)—add Soc/Anth 488 and 5 additional credits selected under departmental advisement

For advisement, consult Dr. Robert Peters (Humanities Building 307), Director of Interdepartmental Program in Linguistics.

### COURSES IN LINGUISTICS

- 201 INTRODUCTION TO LINGUISTICS SCIENCE (3)  
Survey of linguistic method and theory. The nature of language and the basic principles of the phoneme, morpheme, and immediate constituent analysis.
- 202 COMPARATIVE LINGUISTICS (3)  
Prerequisite: Linguistics 201. Principles of language typology, linguistic geography, comparative methods, and historical reconstruction.
- 203 SOCIOLINGUISTICS (3)  
Prerequisite: Linguistics 201. Relationship between social classes and dialect in America, with attention to dialectic groups of interest to class.
- 301 PHONEMICS (3)  
Prerequisite: Linguistics 201. Theory, methods, and problems of phonemic analysis and description.
- 302 MORPHEMICS (3)  
Prerequisite: Linguistics 201. Theory, methods, and problems of morphemic analysis and description.
- 303 SYNTAX (3)  
Prerequisite: Linguistics 201. Comparative survey of modern theories of grammar with special reference to syntax.

- 306 HISTORY OF LINGUISTICS (3)  
Prerequisite: Linguistics 201 or permission of instructor. Development of the science of modern linguistics with the emphasis on the theory and method of structuralism.
- 401 LINGUISTIC THEORY (3)  
Prerequisite: Linguistics 201.
- 402 READINGS IN LINGUISTICS (3)  
Prerequisite: permission of instructor. Directed research on topic selected by student; may not be repeated.
- 403 FIELD LINGUISTICS (3)  
Prerequisite: 12 credits in linguistics. Methods for analysis and description of an unfamiliar language.
- 404 LINGUISTICS AND LITERATURE (3)  
Prerequisite: Linguistics 201 or Foreign Languages 370. Importance of linguistic contributions to literary analysis; linguistics and theory of literature; common problems.

### PHYSICAL SCIENCE

*Major* Secondary 45 credits

- General Science 405 or equivalent
- Chemistry 121, 122, 127 and 128, 251
- Physics 231, 232, 233 (or 131, 132, 133), 381
- Physical Science 492

*Minor* Junior High 25 credits

- Courses in addition to the general education requirements selected under advisement

For the physical science majors and minors, Dr. John Miller, Chemistry Department, is the adviser.

### COURSES IN PHYSICAL SCIENCE

- 382 PHYSICAL SCIENCE FOR THE INTERMEDIATE SCHOOL (3)  
Prerequisite: science general education requirements or equivalent. Use of experiments, demonstrations, and reading to achieve selected objectives in teaching in intermediate grades.

## Interdepartmental Programs

### 492 PHYSICAL SCIENCE FOR THE JUNIOR AND SENIOR HIGH SCHOOL (3)

Prerequisite: 15 credits in chemistry or physics. Content, materials, and methods of teaching general physical science, physics, and chemistry in junior and senior high schools.

## RECREATION

### Major Concentration 105 credits

Satisfies both the major and minor for the Bachelor of Arts degree. Coordinated and advised by Women's Physical Education Department.

Recreation majors are advised to include Psychology 201, Soc/Anth 201, Economics 201, and Geog 201 in meeting their general education requirements.

### Basic Core 75 credits

- Rec 101, 202, 251, 307, 351, 402, 451, 452
- Geog 421
- Psych 313
- Soc/Anth 202, 366, 439
- Speech 204, 407
- Technology 240
- 7 credits under advisement

### OPTIONS

Each major will select one option to accompany the Basic Core.

#### Option I Park and Community

##### Recreation Administration

- Recreation 305
- Business Admin 322
- Geography 341, 430
- Political Science 150, 353
- Soc/Anth 347, 441, 482

#### Option II College Union Programs and Services

- Recreation 308, 408
- Business Admin 251, 322
- PE 410m or 410w
- Psych 431, 453
- Soc/Anth 417n, 431, 441

#### Option III Therapeutic Recreation

- Recreation 302
- Music 350
- PE 495
- Psych 411, 453
- Soc/Anth 354, 417b,f,t, 462, 446
- Speech 130, 330
- Technology 301
- Zoology 348, 349

### Minor 25 credits

- Recreation 101, 202, 251
- Recreation 307, 402
- 9 or more credits under advisement

## COURSES IN RECREATION

- 101 LEISURE AND SOCIETY (3)  
Nature of recreation; significance of recreation for today's leisure.
- 202 COMMUNITY RECREATION PROGRAMS (3)  
Prerequisite: Rec 101; Rec 251 concurrent. Planning, organizing, conducting and evaluating community recreation programs.
- 250 CAMPING AND OUTDOOR EDUCATION (3)  
Organization and program in private, agency and school camps; qualifications and responsibilities of the camp counselor; camping techniques.
- 251 FIELD EXPERIENCE IN RECREATION I (2)  
Prerequisite: Rec 101 or equivalent; Rec 202 concurrent. Orientation to community recreation programs.

## Interdepartmental Programs

- 302 INTRODUCTION TO THERAPEUTIC RECREATION (3)  
Prerequisite: Rec 202. Activities and programs for the mentally and physically handicapped.
- 305 PARK ADMINISTRATION (3)  
Prerequisite: Rec 202. Use of public lands for recreation; operation and administration of a parks system; facility design, use and maintenance.
- 307 HISTORY AND PHILOSOPHY OF RECREATION (3)  
Prerequisite: Rec 101. Historical development of recreation; philosophical bases of recreation.
- 308 COLLEGE UNION PROGRAMS (4)  
Role of the union; development of social, cultural, recreational and educational programs.
- 351 FIELD EXPERIENCE IN RECREATION II (1-3)  
Prerequisite: Rec 202, 251. Laboratory experience in agency programs. (May be taken for credit or non-credit.)
- 402 RECREATION ADMINISTRATION (5)  
Prerequisite: Rec 307, 351. Legal, financial and organizational aspects of public and commercial recreation; public relations, utilization of community resources.
- 408 COLLEGE UNION MANAGEMENT (2)  
Prerequisite: Rec 308. Field work experience in the union with special attention to personnel, budgetary, facility, scheduling, and service problems.
- 451 INTERNSHIP IN RECREATION (12)  
Prerequisite: Rec 402. Supervised recreation experience providing opportunity to develop and demonstrate leadership ability.
- 452 SEMINAR IN RECREATION (3)  
To be taken concurrently with Rec 451. Critical analysis of programs and problem areas of recreation in relationship to field work experiences.
- 500 PROBLEMS IN RECREATION (2-5)  
For experienced recreation leaders; individual study of problems growing out of professional experience.

## SCIENCE EDUCATION

Students planning to major in a science for elementary or junior high teaching, see majors in general science, physical science or earth science.

Questions relating to these courses should be directed to Dr. Irwin Slesnick, Biology Department, Coordinator of Science Education, or to L. Balzer (Biology), W. Brown (Physics), R. Christman (Geology), L. Dallas (Education), P. McIntyre (Chemistry), H. Manley (Geology), J. Miller (Chemistry), J. Parakh (Biology), M. Schwartz (Geology), J. Whitmer (Chemistry). Students interested in other Science Education courses see Biology 383 and 493, Geology 384 and 390, Physical Science 392 and 492, Education 423 and 429.

## COURSES IN SCIENCE EDUCATION

- 390, 391 SCIENCE FOR THE PRIMARY GRADES (3 ea)  
Prerequisite: general education requirements in science and mathematics; 390 prerequisite to 391. Selected generalizations and processes in science adaptable to primary school; classroom-laboratory study of "new" curricula; observation and participation. The courses should be taken in two successive quarters.
- 430 ENVIRONMENTAL EDUCATION (2-5)  
Prerequisites: permission of instructor. Examination of environmental problems; their causes and possible solutions.
- 445 CURRENT TRENDS IN SCIENCE EDUCATION  
445a Classroom Methods (3-6)  
445b Field Methods in Environmental Education (3-12)
- 480 SPECIAL PROJECTS IN SCIENCE FOR THE ELEMENTARY GRADES (2-5)  
Prerequisites: one course from Sci Ed 380, 390, Phys Sci 382, Biol 383 or Geol 384; permission of instructor. Projects involving science instructional materials and curriculum. May be repeated.
- 490 SPECIAL PROJECTS IN SCIENCE TEACHING IN THE JUNIOR AND SENIOR HIGH SCHOOL (2-5)  
Prerequisites: one course from Biol 493, Geol 390, Phys Sci 492; permission of instructor. Projects involving science instructional materials and curriculum. May be repeated.
- 497b STUDY OF NATURAL AND MAN-ALTERED ENVIRONMENT (3)  
Basic laws and theories in ecology emphasizing the scientific inquiry process with opportunities for application; integration of such theories and processes in the public school curriculum grades K-12.

## Interdepartmental Programs

- 500 SPECIAL PROJECTS IN SCIENCE (2-5)  
Prerequisite: permission of instructor.
- 501 DEVELOPMENT OF A SCIENCE PROGRAM IN THE PUBLIC SCHOOL (3-5)  
For principals, superintendents, supervisors, and teachers interested in developing a comprehensive program of science.
- 570 RESEARCH (2-6)  
Prerequisite: admission to program; permission of instructor. Thesis-related research.
- 580 SPECIAL PROBLEMS IN SCIENCE TEACHING IN THE ELEMENTARY SCHOOL (2-5)  
Prerequisite: teaching experience or permission of instructor. Problems related to science instruction and curriculum; may be repeated.
- 590 SPECIAL PROJECTS IN SCIENCE TEACHING IN THE JUNIOR AND SENIOR HIGH SCHOOL (2-5)  
Prerequisites: teaching experience or permission of instructor. Problems related to science instruction and credit; may be repeated.

## SOCIAL STUDIES EDUCATION

For advisement or approval of these majors, students should consult the social studies advisers, Dr. Harry Jackson, Dr. Peter Hovenier, Mr. David Mellander, or Dr. Robert Teshera.

### Major-Minor Concentration

History-Social Studies for junior or senior high school teachers  
Option I 95 credits

- History 50 credits
  - European two courses
  - Non-west two courses
  - United States three courses(two of which must be upper division)
- History 499
- History 391
- Social Studies Education 426
- History electives under advisement to total 50 credits

- Social Sciences 45 credits
  - Geography or Political Science 25 cr.
  - Social Science 20 credits(from two social science areas not otherwise developed in the program)

(Successful completion of this program leads to teaching competency recommendations for both history and the social studies.)

### Major-Minor Concentration

Geography-Social Studies for junior or senior high school teachers  
Option I 93 credits

- Geography Secondary Education major: 45 credits (see page 116 of this catalog)
- Other Social Sciences: 48 credits
  - History 391
  - Other History or Political Science: 25 credits including at least 10 hours of upper division credit
  - Other social science: 20 credits in any combination from any two social sciences not otherwise developed in the program

(Successful completion of this program with a 2.5 GPA leads to certification of teaching competency in both geography and the social studies.)

Major Elementary 45 credits  
(For Elementary Minors only)

- History 203, 204; Geography 201, 311
- Sociology/Anthropology 201
- Political Science 150 or Economics 201
- Electives—15 credits under advisement in one of the following four fields: geography, history, political science, or sociology/anthropology

Extended Minor 35 credits  
(For Elementary Majors only)

- 20 credits from one of the social sciences
- 15 credits from two other social sciences
- A minimum of 15 of the 35 credits must be from upper division work



### *Teaching Competence*

Recommendation for teaching competence in social studies requires completion of the major or the extended minor with a grade average of 2.5 or better.

## **COURSES IN SOCIAL STUDIES EDUCATION**

### **425a,b SOCIAL SCIENCE FOR THE ELEMENTARY SCHOOL (3)**

Prerequisites: Psych 352. The development of social science concepts and skills in the elementary program.

- (a) primary emphasis
- (b) intermediate emphasis

### **426 SOCIAL STUDIES FOR THE SECONDARY SCHOOL (3)**

Choice and adaptation of materials of instruction to the junior and senior high school level.

## **URBAN AND REGIONAL PLANNING**

### *Major Concentration* 105 credits

This undergraduate major in the Arts and Sciences curriculum is intended to prepare students for pre-professional service in planning agencies as well as to provide a foundation for graduate study in this field. It meets the requirements for both the major and minor concentrations. Early consultation with Dr. Michael McGuire, Director of the Urban and Regional Planning Program, is essential.

- Economics 201, 202, 482
- English 202
- Geography 201, 341, 351, 430
- Mathematics 240 or 341, 342
- Political Science 150, 353, 421
- Sociology 202, 366
- Technology 210, 313
- Sociology 375
- Geography 311 or 401
- Geography 421 or Political Science 420

- Geography 454 or 480
- Electives from the alternate requirements above or the following to complete 105 credits:
  - Business Administration 408
  - Computer Science 110
  - Economics 410, 415
  - English 302
  - Geography 207, 331, 353, 407, 408, 422, 440, 442, 452, 453
  - Health Education 447
  - History 466
  - Home Economics 175, 370
  - Mathematics 220
  - Political Science 320, 450, 455
  - Sociology 311, 370, 430, 431, 441, 475
  - Technology 240
- It is recommended that the student concentrate his electives in either economics, geography, political science, or sociology/anthropology

## **VISUAL COMMUNICATION EDUCATION (VICOED)**

The Bachelor of Science degree program in VICOED is designed to prepare graduates to enter industry as production, supervisory, or management personnel in the field of visual communication, and to prepare prospective teachers in the academic background necessary for curriculum development and instruction in secondary schools which are planning on carrying forward programs in visual communication education. The concentration satisfies both major and minor requirements. Early consultation with the Director of VICOED is essential.

VICOED students will follow the usual General Education sequence, but should take Mathematics 121 or 240 in lieu of 151, and Chemistry 115 rather than 101. Physics 101 will normally be taken.

## *Interdepartmental Programs*

*VICOED Concentration* 110 credits

*Basic Core* 67 credits

- Art 101, 102, 371, Art History 195
- English 201 or 202 or Journalism 104
- Speech 340
- Technology 160, 210, 240, 260, 340, 341, 362, 379, 447, 448
- 15 credits in one of the following:
  - Industrial Graphics (Technology)
  - Graphic Arts (Technology)
  - Photography (Technology)
  - Graphic Design (Art and Technology)
  - Professional Writing (English and Journalism)
  - Educational Media (Education)

*Supporting Courses* 43 credits

- Chemistry 208, 209
- Business Administration 251, 330; Economics 338
- Math 122 or Computer Science 270
- Sociology/Anthropology 431
- Psychology 320
- 14 credits selected from art, economics, business, sociology/anthropology, psychology, mathematics, physics, chemistry, educational psychology

See departmental sections of the catalog for descriptions of these courses.

### *Teacher Education Program*

Students enrolling in VICOED for teacher certification must complete the requirements for the Bachelor of Science program described above, and satisfy professional education requirements through the Certification Program for Graduates. This program includes two to three quarters prior to teaching, and a minimum of 15 credits after a year or more of successful teaching experience to obtain the standard teaching certificate for the State of Washington.



# COLLEGE PERSONNEL

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Physician John Mumma, M.D.

#### Housing

Director Gerald W. Brock, M.Ed.  
Assistant to the Director Rodrick C. Coy, B.A.

#### Library

Director W. Robert Lawyer, Ph.D.

#### Personnel

Director Phillip Leanderson, B.A.

#### Physical Plant

Director H. Stuart Litzinger, B.S.  
Supervising Engineer Samuel H. Buyco, B.S.

#### Placement

Director Louis T. Lallas, M.Ed.

#### President's Office

Administrative Assistant Michael W. Barnhart, Ph.D.  
Executive Secretary Doloris S. Riley

#### Project Fiscal Officer

Jack N. Griffin, B.B.A.

#### Public Information and Development

Director Ramon T. Heller, B.A.  
Publications Officer F. Stephen Kurtz  
Alumni Relations Officer Steven W. Inge, M.A.

#### Registrar William O'Neil, M.Ed.

Assistant Registrar Robert W. Thirsk, M.Ed.  
Associate Registrar Calvin E. Mathews, M.A.

#### Residence Hall Programs

Director Keith L. Guy, M.Ed.  
Assistant Director Virginia R. Ramsay, M.S.

#### Safety and Security

Supervisor Robert G. Peterson

#### Student Activities and the Viking Union

Director Kathryn J. Burke, A.B.  
Assistant Director, Student Activities-Programs Barry E.  
Bonifas, B.A.  
Assistant Director, Student Activities-Operations John J.  
Smith, M.A.

#### Student Publications

Adviser Gerson F. Miller, M.A.

## EMERITUS FACULTY

#### WILLIAM WADE HAGGARD

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## 1971-72 FACULTY

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\*On leave 1971-72

\*\*On leave Fall Quarter 1971

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Lecturer in Business Administration. C.P.A., Washington.
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Associate Professor of Mathematics. B.A., M.A., Miami University.
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Professor of Political Science. B.S., M.S., University of Southern California; Ph.D., University of California, Los Angeles.
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GEORGE BLACK

Tuba, String Bass. Professional Musician.

DANIEL BOCHARD

Brass, M.A., Western Washington State College.

NANCY BUSSARD

Piano, B.A., Whitman College.

NICHOLAS BUSSARD

Oboe, B.A., Whitman College; M.M., University of Oregon.

MICHAEL DAVENPORT

Saxophone, M.M., University of Washington.

DAVID FORBES

Brass, Professional Musician

MARGARET HAMSTREET

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CORNELIUS MATTHIES

Voice, B.A., Goshen College.

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B.S., Eastern Montana College of Education; M.S., Montana State University.

## SUMMARY OF ENROLLMENT

### *Resident*

|                               |        |
|-------------------------------|--------|
| Summer Quarter, 1970-71       | 4354   |
| Fall, Winter, Spring, 1970-71 | 10,672 |

### *Extension*

|                                |      |
|--------------------------------|------|
| Independent Study              | 520  |
| Evening Classes (on campus)    | 1476 |
| Extension Classes (off campus) | 4540 |
| Total Extension Enrollment     | 6536 |

## DEGREES AND CERTIFICATES

*Degrees* granted from August, 1970 to  
June, 1971, inclusive:

|                               |     |
|-------------------------------|-----|
| Master of Education           | 170 |
| Master of Arts                | 40  |
| Master of Science             | 40  |
| Bachelor of Arts in Education | 890 |
| Bachelor of Arts              | 740 |
| Bachelor of Science           | 35  |

Total 1915

*Teaching Certificates* issued from  
August, 1970, to June, 1971, inclusive:

Provisional 900

*Recommended for certification* to the State  
Superintendent of Public Instruction—

|                                      |     |
|--------------------------------------|-----|
| Standard Teaching Certificate        | 379 |
| Provisional Psychologist Certificate | 7   |

# INDEX

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