



1968•69  
CATALOG

WESTERN  
WASHINGTON  
STATE  
COLLEGE

**WESTERN WASHINGTON STATE COLLEGE**

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# CAMPUS MAP

1. Old Main
2. Humanities Building
3. Lecture Halls
4. Miller Hall
5. Arts Building
6. Carver Gymnasium
7. Education Building
- 7A. Education Annex
8. Bond Hall
9. Haggard Hall of Science
10. Wilson Library
11. Auditorium-Music Building
12. Terrace Annex
13. Music Annex
14. Housing Offices
15. President's House
16. Fresh Water Institute
17. Office Building – 335 High Street
18. Book Store
19. Viking Union
20. Viking Commons
21. Office Building · 519 Oak Street
22. Mathes Hall
23. Nash Hall
24. Higginson Hall
25. Edens Hall North
26. Edens Hall – Fairhaven College (Temporary)
27. Highland Hall
28. Ridgeway Sigma
29. Ridgeway Omega
30. Ridgeway Delta
31. Ridgeway Alpha
32. Ridgeway Kappa
33. Ridgeway Beta
34. Ridgeway Gamma
35. Ridgeway Dining Hall
36. Athletic Fields
37. Heating Plant



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# 1968-69 COLLEGE CALENDAR

## SEPTEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
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29	30					

## DECEMBER

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## OCTOBER

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## JANUARY

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## NOVEMBER

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## FEBRUARY

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### *Fall Quarter, 1968*

August 1

Last day to apply for admission

September 29, 7:30 p.m.

Convocation for New Freshmen

October 1

Registration of returning students

October 2, 8:00 a.m.

Classes begin

November 11

Veteran's Day Holiday

November 27, noon - December 2, 8:00 a.m.

Thanksgiving Recess

December 16-20

Final Examinations

### *Winter Quarter, 1969*

January 6

Registration

January 7, 8:00 a.m.

Classes begin

March 17-21

Final Examinations

*Spring Quarter, 1969*

March 31  
Registration  
April 1, 8:00 a.m.  
Classes begin  
May 30  
Memorial Day Holiday  
June 6-12  
Final Examinations  
June 13  
Commencement

*Summer Quarter, 1969*

June 23-August 1  
Six-Week Session  
June 23-August 22  
Nine-Week Session  
July 4  
Independence Day Holiday

*Fall Quarter, 1969*

September 29  
Quarter Opens

**MARCH**

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**JUNE**

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**APRIL**

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**JULY**

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**MAY**

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**AUGUST**

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31						





# THE COLLEGE

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

Western Washington State College is located in Bellingham, a city of 36,000 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 to a degree granting institution in 1933, the College of Education in 1937, and to the State College in 1961.

The college is a multipurpose institution offering degree programs in the arts and the sciences and professional education for teachers at both the undergraduate and graduate levels. Preprofessional studies are available for transfer to universities and professional schools.

## *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.

## **POLICY OF NONDISCRIMINATION**

It has never been the policy of Western Washington State College to discriminate in any way 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."

## **OBJECTIVES**

Western Washington State College strives to provide its students with the opportunity and the 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, studies in depth to develop 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 for students who wish to extend their education to greater depth. Those who plan to transfer to professional schools at the universities find appropriate programs within the arts and science offerings of departments.

Western Washington State College is a community of scholars. Students associate with members of the faculty in the search for truth, wisdom, and beauty.

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, and the arts through creative endeavor. Its intellectual resources are made available as a service to the community--local, state, national.

#### *Aims of the General Education Program*

- (a) To broaden and intensify the student's understanding of significant aspects of man's cultural heritage;
- (b) To introduce the student to the methods and tools of thought and expression;
- (c) To assist the student in integrating his knowledge;
- (d) To assist the student in developing his powers of aesthetic enjoyment and creativity;
- (e) To stimulate the student in formulating a philosophy of life based upon knowledge and reflection.

#### *Aims of Studies in Depth*

Subject matter specialization, an essential part of all degree programs offered at the College, is designed

- (a) To train students in the methods and tools of



thought, expression, and research in a particular discipline;

(b) To provide a depth of subject matter appropriate for careers in teaching, in business and industry, and in government service;

(c) To develop a sound basis for pursuing further and more advanced study in a specialized field in graduate or professional schools.

#### *Aims of the Professional Programs for Teachers*

(a) To develop an understanding of the functions of the school in society;

(b) To promote an interest on the part of the student in developing his own philosophy of education;

(c) To develop an awareness of individual differences in the process of growth and learning in children;

(d) To provide opportunity for the development of skill

in planning and implementing instruction;

(e) To stimulate critical thinking about the instructional process and a willingness to pursue innovation;

(f) To promote the ability to work cooperatively with children, colleagues, parents, and others in the community.

#### **THE CAMPUS**

Since 1959 Haggard Hall of Science, Carver Gymnasium, the Humanities Building and Lecture Halls, two wings of the Mabel Zoe Wilson Library, Science-Math-Computer Center and an Addition to the Arts Building have been added to the academic facilities. The Education-Psychology Building (Irving E. Miller Hall) is scheduled for completion in December 1968. Other academic buildings being planned include additions to the Library, Auditorium-Music Building, Carver Gymnasium, and an Administration Building.



Student residences have also grown apace with the addition of Higginson Hall, the Ridgeway Residence Halls, Mathes Hall and Nash Hall. The Viking Union, Student Cooperative Bookstore and two dining halls have been opened in the past few years and an addition to the Viking Union is presently under construction.

Combined residence and academic facilities for the new Fairhaven College unit are also under construction with additional housing and dining units being planned for fall quarter, 1970.

## THE LIBRARY

The Mabel Zoe Wilson Library is a service center of the College. At present it houses a collection of some 188,000 books, catalogued pamphlets, and bound periodicals. 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.

Plans for an addition which will almost double the present facility are in the final stages of preparation. In addition to enlarging the areas named above, it will include a general reading room, a small auditorium, and expanded reader service areas.

Supplemental to the general library is the Audio-Visual Center which maintains and operates a collection of instructional materials and equipment available to all departments.

## 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. In addition to an Institutional Grant for Science awarded the College by the National Science Foundation for the purpose of assisting young scientists who are just beginning their research careers, 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. During 1966 and 1967 the Departments of English, Mathematics and General Science received awards through the Department of Health, Education and Welfare, under the Higher Education Act of 1965, for the training of fellows in these fields. Additionally, the college was awarded supplemental funds under this Act for increasing library holdings in research materials and readings in those disciplines which have recently begun master's programs. 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 is maintained by the Bureau to aid in the preparation of articles and books by faculty members; and some assistance is available for publication and reprint costs. A staff artist is available for preparation of illustrations, charts and graphs, and a research assistant is on call for library research incident to publication.

The establishment of the Computer Center in 1962 was made possible through a National Science Foundation grant and an educational allowance by the manufacturer of the equipment. The facilities of the Center are available to faculty, students, and administration, with priority given to instruction and research. A computer programming course is given each quarter and the computer is used in other courses as an instructional tool. Increasing sophistication of types of use by faculty and administration has created a need for larger and more flexible facilities. These are being added in the new quarters opened in 1968.

With the aid of a grant from the National Science Foundation, the College purchased a neutron generator, and research is going forward apace. Beginning with the summer of 1968, a Carbon 14 laboratory will be in operation dating materials on an interdisciplinary basis for the departments of Geology, Biology, Chemistry, and Sociology/Anthropology.





# THE STUDENT

## ADMISSION

The College makes every effort to provide an opportunity for higher education to all qualified applicants. 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 at Western.

### *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. Applications must be on file by December 1 for Winter Quarter, March 1 for Spring Quarter, and June 1 for Summer Session.

### *Confirming Application*

Each admitted student will be asked to confirm his enrollment by submitting a nonrefundable payment of \$35 on tuition and fees. This payment *should not be submitted until requested by the College* when notifica-

tion of admission is sent. Additional procedural instructions are sent to those who confirm their intention to enroll by submission of the advance fee payment.

### *Freshman Students*

*Graduates of Washington State high schools* are ordinarily admitted if their high school records indicate (a) a cumulative grade average of 2.5 or above; or (b) rank in the upper half of the graduating class.

Students who fail to qualify on either of these criteria may receive consideration for admission by submitting such additional evidence as specified by the Director of Admissions. If space permits, the College will grant admission to students who demonstrate the capacity and maturity to succeed in an academic program.

The Washington Pre-College Test is required of all entering freshmen as a guidance and placement aid. Residents of the State should complete this test during the senior year when it is administered in their locality.

*Graduates of high schools outside the state of Washington* are ordinarily admitted if they meet the requirements specified above, provided they also have the results of the Scholastic Aptitude Test submitted directly to the Admissions Office by the College

Entrance Examination Board. (The Washington Pre-College Test is also required, but opportunity to take it will be provided when the out-of-state student arrives on campus.)

*Non-high school graduates* may be considered for admission if they are over twenty-one years of age. Such persons should contact the Director of Admissions for an interview and provide the information and complete such examinations as may be required.

*Application procedure* involves obtaining from the high school principal or counselor an Application for Admission to Washington Higher Institutions, filling out page one and filing the entire form at the high school office for completion and mailing to the College Admissions Office. (If a form is not available, one may be obtained from the Admissions Office.)

### *Transfer Students*

The College grants 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 their interest 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 may be 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 a maximum of 96 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.) 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.

*Application procedure* involves obtaining an application from the Admissions Office. (Forms are available in the guidance office at Washington community colleges.)

Complete and mail this form and see that a complete official transcript is forwarded directly to the Admissions Office by *each* institution attended. Students transferring fewer than 40 quarter hours of credit or students desiring to satisfy some general education requirement by acceptable high school courses must also submit a high school transcript.

### *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 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 the university 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 and the test of English as a Foreign Language is normally required of candidates from countries in which English is not the language in general use.

### **HEALTH EXAMINATION**

A health examination is required of all entering students prior to registration. Necessary forms are sent to those who confirm their application. 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.

## READMISSION

All students who leave the College for one or more quarters (except summer quarter) must apply for readmission well in advance of the expected date of re-enrollment. Application forms are available upon request from the Office of the Registrar.

## 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, inature 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.

## 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 in advance. This customarily occurs during the ninth and tenth weeks of the quarter. Fees may be paid at registration time or by mail, at the convenience of the



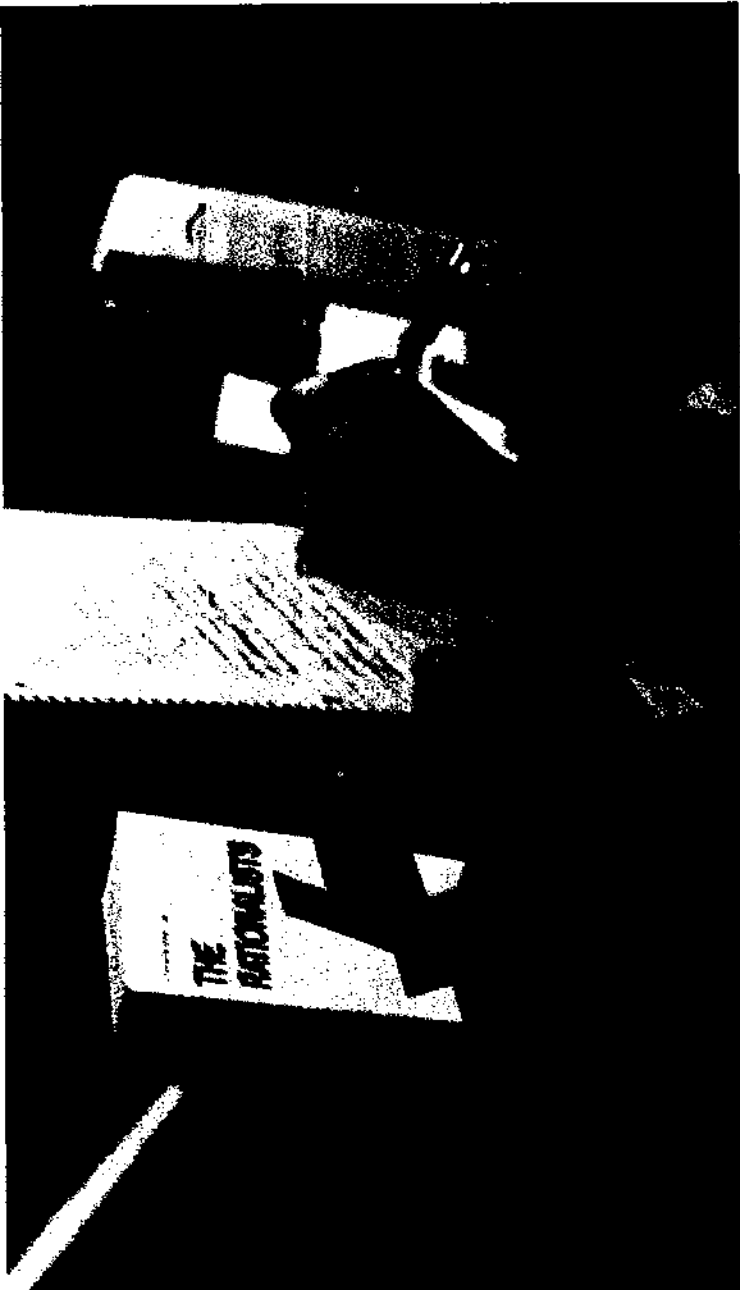
student. If made by mail, payment must be received ten days prior to the opening of the quarter.

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 classes after the first week of instruction. Students registering or paying late, or failing to meet a registration appointment at the scheduled time are subject to a penalty fee of \$3.



## FINANCES

### *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	\$ 88.00
Non-Resident of Washington	157.00

These charges include a tuition fee of \$19 for residents and \$55 for non-residents.

Funds derived from the other fees, \$69 and \$102 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 \$13 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	\$10.00
(The minimum fee is \$20)	

### *Auditors (without credit)*

One or more courses, per quarter	\$20.00
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### *Continuing Studies*

Courses taken by extension or in home study, per credit	\$10.00
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\*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.

## Miscellaneous Service Charges

### Parking (per quarter)

General	\$ 8.00
Residence Hall	10.00
Motorcycle	1.00

**Change of Schedule** After the student has completed his registration, \$3 is charged for any change not made at the initiative of the College.

**Late Registration** \$3 is charged if a student fails to pre-register or register at appointed times.

**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 any degree. This fee covers initial registration at the Placement Offices.

**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.

### 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.

## 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:

	Minimum	Average
If rooming and boarding	\$1,350.00	\$1,550.00
If housekeeping	1,300.00	1,500.00
If living at home or working for room and board	750.00	900.00

These estimates make no provision for clothing costs or travel expense.

## FINANCIAL ASSISTANCE

It is the position of the College that the limited funds available for student assistance are most legitimately used, not as an inducement to attend this institution, but as a means to an end for the student that of attending when this seems to be an educationally sound course of action and when, for financial reasons, it would otherwise not be possible.

The College evaluates the total educational program of the financial-aid applicant: school or college grades, test scores, participation in school or community activities, work experience, recommendations, future plans.

The College will make every effort to offer assistance to qualified applicants commensurate with indicated need. The assistance may take the form of guaranteed employment, a loan, a scholarship, or some combination of these.

The College expects that every student aid applicant will supply part of his own funds through summer or term-time employment, and that parents will contribute in proportion to their financial ability. In assessing need,



the College uses the Parents' Confidential Statement prepared by College Scholarship Service.

### *Entering Freshmen*

#### *Scholarships*

Freshman awards are available through the Education Opportunity Grants Program. Admissibility and need are the criteria. In addition, the College offers a variety of academic scholarships as well as talent awards in art, music, speech-drama, and athletics. All such awards are determined on the basis of outstanding performance; the amount is regulated by need. The continuation of these awards for a second or succeeding year is based upon successful academic performance and demonstration of continuing need. A renewal application is necessary each year.

#### *NDEA Loans*

The National Defense Education Act provides sizable sums for loans to freshmen and advanced students. The maximum loan, based on demonstrated need is \$1,000; the average loan granted is about \$500. Parents must co-sign with students under 21 years of age.

### *Guaranteed Employment*

Jobs paying from \$200-\$400 per year are available in the college library, custodial and food services, and college offices.

### *How to Qualify*

Achieve high school grades which constitute grounds for admission to the College.

Give evidence of personal involvement in the life of the school or community.

Present personal recommendations of a high order.

Demonstrate financial need.

### *How and When to Apply*

The application deadline for all forms of assistance is March 1. Obtain forms from high school counselor. Complete the Application for Admission and have it sent to the Director of Admission as soon as the final semester has begun. Be certain to complete the supplement reserved for financial aid applicants. Send a Parents' Confidential Statement to College Scholarship Service, Berkeley, California. This form, with a service charge of \$3, must be mailed by February 15. The College will notify freshman candidates of awards by May.

### *Transfer Students*

Financial assistance is available as outlined below for students in attendance, except that applications must be completed by April 15. Application forms are available through guidance offices in Washington community colleges.

### *Students In Attendance*

#### *Employment*

The most common form of aid to enrolled students is campus or community employment. The Financial Aids Office can be helpful in obtaining off-campus employ-

ment. On-campus employment is in two categories: (1) from funds budgeted for campus part-time employment, and (2) from college Work-Study funds provided through the Higher Education Act. Application for the first category of openings is made in person to the appropriate department. The second category requires evidence of need; application is made through the Financial Aids Office. Employment in this second category can often be guaranteed as part of a "package program" of assistance. Applications are taken throughout the year, but priority is given to those received by April 1 of the preceding year.

### *Loans*

NDEA—See section above on freshman assistance.

The United Student Aid Fund and the Guaranteed Loan Program constitute a cooperative arrangement between banks and colleges. The student may borrow up to \$1,000 per year at an annual interest rate of six per cent; repayment is made on a five-year schedule after graduation. (Under certain conditions, the Federal Government will pay the interest while a student is in college and one-half of it thereafter.)

### *Scholarships*

Western Washington State scholarships are one year non-renewable awards of from \$100 to \$300 made available through private contributions to the Western Washington State College Foundation. Approximately \$20,000 is available annually for these awards. In addition to academic scholarships, there are special ability awards in art, music, speech-drama and athletics. All are based on need. A renewal of these one-year scholarships is based upon outstanding performance and demonstration of continuing need.

Study grants are provided by Educational Opportunity Grant funds. Such awards are based on need. Any student in good standing may apply. Awards are combined with other forms of assistance (jobs, loans) to provide the amount necessary to insure continued attendance. Renewal is based upon an annual application. The Financial Aids Office processes all scholarship applications.



### *Graduate Students*

A limited number of graduate assistantships are available with duties assigned in the various departments of the College at a monthly stipend of \$250-\$300. Application should be made to the Dean of the Graduate School. Graduate students may also apply for NDEA loans through the Financial Aids Office.

### *Policies Relating To Financial Aids*

#### *Employment (on campus)*

Students must be in good academic standing, carrying 12 or more quarter hours. A social security number is required. Foreign students must file a valid work permit issued by the Bureau of Immigration and Naturalization.

#### *NDEA Loans*

The College agreement with the Federal Government requires an exit interview for all NDEA loan holders. It is the responsibility of the student to request such an interview with the Director of Financial Aids if he leaves the college.

Most scholarships and large loans are made available to students in three equal installments at the beginning of each quarter. Such funds are not available for advance payment of fees.



## 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. Residence halls for men and women, and a large number of inspected homes provide accommodations for students. Privately owned boarding places and housekeeping rooms are listed only as they meet college standards. At Western there are four types of housing available: (1) college operated residence halls, (2) inspected off-campus housing, (3) non-inspected off-campus housing and (4) married student housing.

Assignments to residence halls, married student housing, and inspected off-campus housing are made without reference to race, creed, or color. The College does not list non-inspected housing accommodations unless the operators agree to the above non-discrimination clause.

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### *Housing Regulations*

Freshmen women and men, under 20 years of age, not living with their parents or relatives, or non-married, are required to live in on-campus residence halls or in College inspected off-campus housing. A freshman is designated as any student with less than 40 credit hours. All other students may take independent housing.

### *College Residence Halls*

Rooms are furnished with a single bed, mattress and pad, desk, desk lamp, wardrobe or closet, pillow and sheets and a pillow case for each student. The occupant furnishes blankets, towels, alarm clocks and other personal necessities. Rooms are generally for double occupancy. Kitcherette and laundry facilities (including irons) are provided in central areas. Electric open-ement 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.

Two dining halls (Ridgeway and Viking Commons) are located close to the residences. Students living in residence halls must also take their meals in the dining halls. Both dining halls are coeducational 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. The room assignment is made when the student moves into a hall. Students are notified, when their application is received, whether they will be assured a place in the residence hall or whether their names have been placed on a waiting list. Official hall assignments are made by June 1 for fall quarter, and one month prior to the beginning of the other quarters. Students making an application and later deciding they do not want residence hall accommodations must cancel their reservations, or have their reservations transferred to a later quarter, by notifying the Director of Housing prior to acceptance of a residence hall assignment. A \$50 prepayment towards the room and board fees must accompany the confirmation card when the student is assigned to a hall. The \$50 prepayment will be deducted from the room and board for the last month that a student resides in the hall, providing the conditions of occupancy are followed. Once a prepayment is made, cancellation of a reservation cannot be made without a forfeiture. Cancellations made between the date of prepayment, and prior to August 1 for fall quarter, or one month prior to the beginning of spring and winter quarters, will result in forfeiture of \$10; the remaining \$40 will be refunded. Cancellations made after these deadlines will result in a forfeiture of the entire \$50. Students may not move from residence halls during the quarter; the \$50 prepayment will be forfeited if occupancy is discontinued, unless under unusual circumstances an adjustment is approved 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, all prepayments will be refunded.

Residence halls are closed during the vacation periods.

### *Living Costs*

Room and board rates for multiple occupancy for students who live in the residence halls for the entire 1968-69 academic year are as follows:

Fall Quarter	\$279
Winter Quarter	\$254
Spring Quarter	\$237

Students who enter the residence hall after fall quarter will be charged \$254 for spring quarter. These rates are subject to change by the College Board of Trustees.

Room and board is charged from the official date of opening of a term. No adjustment is made for a student who enters the residence hall less than five full days after the official opening date. In the case of students who enter the hall five or more full days after the official opening date, board and room charges begin on the day the student checks into the hall.

### *Adjustments*

Since the residence halls depend upon full occupancy, room rent is not refundable for absences from the hall. Board charges are adjusted for students who are compelled to be away from Bellingham for five or more consecutive days due to extenuating circumstances. Refunds are issued by the Controller's Office in Room 119, Old Main.

### *Payments*

Room and board payments are payable either on a quarterly or monthly basis. Payments are due on the first day of each quarter or the day after the students



check into a residence hall if this check-in is after the start of the quarter. Monthly payments are due the first business day of each month. Room and board payments are made at the Cashier's Window, Room 119, Old Main.

#### *Delinquent Accounts*

A fine of 10 per cent of the amount due (not to exceed \$5) will be assessed in the case of delinquent accounts. Permission for late payment, not to exceed ten days, may be granted by the Controller's Office in Room 119, Old Main, provided the request is made prior to the due date.

#### *Inspected Off-Campus Housing*

Privately owned, off-campus housing in Bellingham provides a necessary service to students and the College. These houses are properly supervised under the same rules as for students who live on campus. The activities in each house depend upon the group living there.

Most of the houses provide a single bed, linen, mattress, chest of drawers, closet, desk, chair and other common facilities. Service offered may differ and an understanding should be made with the house owner before a rental agreement contract is signed.

The types of houses available include those providing room only, room and board, and room with kitchen privileges.

The capacity of these houses ranges from 8 to 34 students. A total of 450 men and women students can be accommodated in inspected off-campus housing.

Reservations for accommodations in private housing must be made directly with the landlord. Lists and costs are available from the Housing Office. Upon finding suitable accommodations, reservations must be confirmed by a \$25 deposit, check or money order, to the house owner. The deposit is a reservation fee and is non-refundable upon cancellation unless the vacancy is filled without loss to the owner. The rental agreement obligates the student to one quarter's occupancy.

The cost of rooms ranges from \$30 to \$45 a month for multiple rooms. Single rooms cost \$5 to \$10 more. Board and room is available in some women's houses,



excluding lunches and Sunday meals. On-campus boarding is possible only on a meal ticket basis (21 meals per week). Meal tickets are available at the Housing Office.

### *Other 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 list is maintained by the Housing Office but not published for mail distribution because of the constant change in availability. Since the Office does not make individual rental arrangements, it will be to the student's advantage to arrive in Bellingham prior to the beginning of the quarter to locate suitable housing. Housing and available rentals are in great demand. It may be necessary to arrange for temporary housing at one of the nearby motels while seeking permanent housing.

### *Married Student Housing*

Schome Manor is leased by the College to provide housing for married students. It has 62 apartments which include 4 efficiency units, 48 one-bedroom apartments and 10 two-bedroom apartments. Rentals, which include all utilities, are: efficiency units, \$70-\$80; one-bedroom apartments, \$80-\$120; two-bedroom apartments, \$105-\$135.

All apartments have wall-to-wall carpeting, drapes, ranges, and refrigerators. Laundry facilities and parking also are provided.

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  
Phone: (Area Code 206) 734-8800, Ext. 2601



### *Health Services*

The Health Service assists students in maintaining the good health essential to College success and is charged with health protection for the College community. The Health Center has available the services of a medical doctor on a part-time basis while school is in session. In addition, there are two registered nurses and four licensed practical nurses on the Health Center staff. The College physician performs necessary minor medical, surgical, and diagnostic treatment for students who have been screened by the Health Center nurses. It is expected that major surgical and major medical or diagnostic problems will be referred to physicians in the community or in the student's home town. The College maintains an Infirmary on the campus to accommodate for a limited time students with minor illnesses not requiring specialized hospitalization. The Infirmary is in operation twenty-four hours a day during the school year. This service is provided without cost for a maximum of five days in any one academic year. Thereafter, a per diem charge is made.



Students requiring a formal absence excuse for reasons of health must have the illness reported immediately and must report in person to the Health Center before resuming class attendance.

During the evening hours and on weekends and holidays, the College has a contractual agreement with one of the local hospitals. Emergency cases are to be referred to the Hospital Emergency Service during the above times.

In addition to the Health Services, the College sponsors a Health and Accident Insurance Plan available to students on an optional basis. This group policy with a national company provides broad coverage and liberal benefits for a modest premium. Students who do not already carry adequate health and accident insurance are urged to take advantage of this plan.

### *Parking And Traffic*

The administration of parking and traffic regulations is under the direct supervision of the Campus Security

Officer. 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. Failure to do so may lead to disciplinary action.

No students who have less than 40 quarter hours of college or university credit or the equivalent shall possess or operate a motor vehicle on the college campus or in the city of Bellingham, except: married students, and students over 21, students living outside the college community who need the vehicle to commute to regular classes, students needing the vehicle for business or employment, students with health or disability problems.

## **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 programmed individual and group guidance, 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 faculty as a whole, participating as it does in giving direction to the entire college program, determines the extent and complexion of Student Personnel Services. While special responsibilities are assigned to some, the entire faculty contributes a major share of these services.

### *Orientation*

New students are inducted into the academic and extra-curricular life of the College immediately prior to the opening of the fall quarter. In order to develop a thorough understanding of curricula, services, and facilities of the College, the program of individual and group conferences extends well into the student's first quarter.

### *Freshman Counseling*

During his first year each student is teamed with a member of the faculty. These faculty advisers assume special responsibility for assisting freshmen to meet effectively the initial problems of adjusting to college, to develop an intelligent career plan, and to select the program of studies most appropriate to that plan.

The aim of all counseling at Western Washington State College is to develop in the student himself the capacity and skills necessary for self-guidance.

### *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.

### *Student Personnel Offices*

*The Dean of Students* has responsibility for planning and coordinating the out-of-class program and the guidance services of the College, developing an effective relationship between all student personnel services, and administering the faculty counseling and advisement programs.

*The Dean of Men and Dean of Women* attend to the general welfare of the college community, counsel students, and cope with infractions of college regulations.

*The Registrar's Office* encompasses admissions, enrollment procedures, administration of academic regulations, and the maintenance of complete student records. The Registrar assumes a major role in the guidance of students.

*The Admissions Office* administers the admissions policies of the College as regulated by the faculty, corresponds with and counsels prospective students and assists in their enrollment.



*The Office of College Relations* maintains liaison with other colleges of the state and cooperates in developing programs of mutual interest as well as advising transfer students.

*The Financial Aids Office* administers awards and scholarships, loans, and student employment.

*The Student Activities Office* encourages sound student government and coordinates the extracurricular program.

*The Director of Residence Hall Programs* coordinates programs and other matters pertaining to these halls and their members.

*The Counseling Center* provides services to undergird the counseling and advisement carried out by the entire faculty. Students seeking special assistance in career planning or the solution of personal problems are encouraged to use the resources of this office.

*The Testing Center* has primary responsibility for psychological and achievement testing and the interpretation of test data.

*The Housing Office* coordinates the housing of students in college residences and assists other students in finding off-campus living quarters.

*The Placement Offices* assist graduates and prospective graduates in finding full-time positions appropriate to their training and abilities. Placement service is also rendered to graduates who may register for promotion or change of position.

*The Health Service* provides consultation in cases of illness or accident and is available for guidance in all health matters.

### *Student Activities*

A total college experience encompasses much that occurs outside the classroom. The program of student activities at the College is planned and coordinated through the office of the Director of Student Activities to provide maximum opportunity for student participa-

tion in a wide range of genuinely profitable 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 in large measure are administered by the students themselves with faculty advisement and within the framework of general college policy. 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, publications, and the activities staff are located in the Union. The Director of Student Activities and the Union-Facilities Committee administer the facilities and services. Meeting rooms, lounges, shops and work areas, together with the organization and program, represent a well-considered plan for the community life of the College.

*Living group organizations* provide an important opportunity for personal growth. The residence halls are organized for self-government and sponsor activities within their individual halls.

*Student groups* provide an educational and social experience not always available to students in the ordinary classroom situation. Within the stated educational objectives of the College, and under the guidance of the Director of Student Activities and faculty advisers, 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*.

*Political activities* are open to all students through local chapter organizations of major parties. Although these groups do not represent an official action of the College,

students are able to develop and further their own political ideas and to find expression for them in these groups.

*Religious activities and organization* are open to all students through interdenominational groups not directly a part of the College program. See *The Navigator* for a complete listing of these organizations.

*Athletics* play an important place in the activities program, whether intercollegiate or intramural. Students interested, either as spectators or as participants, in intercollegiate sports can choose from football, basketball, baseball, track, swimming, rugby, tennis, golf, wrestling, and skiing.

The College participates as a member of the Evergreen Conference.

The comprehensive intramural schedule includes practically all group and individual sports. All students are encouraged to participate and to reap the benefits, not only of healthful recreation but of increased physical skill.

*Debate and drama* offer broad opportunities for the development of new interests and skills. Debate is a field in which the College has won considerable eminence. With the facilities of a regulation 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.

*Publications* include a news weekly, *The Western Front*, a college yearbook, the *Klipsun*, and certain minor publications.

*Recreational facilities* operated by the College, include Viqueen Lodge, a thirteen-acre tract on Sinclair Island owned by the Women's Recreation Association, and Lakewood, a nine-acre tract on Lake Whatcom owned by the Associated Students. Kulshan Cabin, a lodge at Mt. Baker, is owned jointly by the College and the Mt. Baker Club of Bellingham.





# ACADEMIC REGULATIONS

## MATHEMATICS DEFICIENCY

Proficiency in mathematics is expected of entering students. 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 Office of Continuing Studies offers a non-credit review course in mathematics for those who need additional preparation for a re-test.

Transfer students with a grade of C or better in any college level mathematics course are considered to have satisfied this entrance requirement.

## CREDITS AND LOAD

The "*quarter hour credit*" represents one class hour per week throughout 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. Sixteen credits on this basis

constitute the work of a quarter, and forty-eight credits that of the regular academic year of three quarters.

*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.

*The standard load* for undergraduates is sixteen credit hours, including physical education. During the first quarter of residence, students are limited to this amount. Thereafter any program in excess of 17 credits must be approved by the Registrar.

To be permitted to carry an overload, a student must have met the following grade point standard during the previous quarter or in all previous work done in this institution:

18-hour load	2.8
19-hour load	3.0
20-hour load	3.2

The maximum allowable undergraduate load is twenty hours. A somewhat lesser load limit is in effect during the summer sessions.

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

Class load regulations for master's degree students are detailed in the *Graduate Bulletin*.

*Full-time and part-time* status are determined by the number of credit hours which a student is taking. *Full-time* status required for on-campus employment, eligibility for student offices, etc., 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.

*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 \$20 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.

## GRADING AND GRADE REPORTING

*The system of grading* is as follows:

A	Superior	S	Satisfactory
B	High	P	Passing
C	Average	K	Incomplete
D	Low Passing	U	Unsatisfactory
F	Failure	W	Withdrawn

Grades A, B, C, D, S, P are considered passing; however, grades of D are not acceptable in the major, the minor, English composition, and in professional education and educational psychology courses required for a degree. See *Graduate Bulletin* for grade standards in master's degree programs.

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

The grade of P is used in "Pass-Fail" courses (see below). A course in which a student failed must be repeated if credit is desired.

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. Reports will be mailed to parents of students under 21 years of age upon request of the parent or of the student.

*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 and U, 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 and P 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 and student teaching, 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. Although credit is allowed but once, both grades are counted in computing grade averages.

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* has been adopted on a three-year trial basis commencing with fall quarter 1968. The following conditions govern its use:

1. All students including transfers may register for a maximum of one pass-fail course per quarter; not more than 24 credits in pass-fail courses may be applied toward a bachelor's degree. (The limit excludes the two experimental pass-fail courses Math 151 and Ed 301 which fall outside the provisions for general use of the system.)

2. Only such courses as are elective and not necessary to satisfy requirements in general education, professional education, the major, minor, and supporting courses may be taken on a pass-fail basis. 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 new concentrations.

3. Instructors will grade all courses under the traditional system, but report only P or F to the Registrar when students have registered under the pass-fail option.

4. The student at the time of registration must designate the course for which he wishes to receive a pass-fail grade; he may change this designation within five days as a regular change of registration—see below.



5. Prerequisites, work required, and credit allowed are not affected by election of the pass-fail option.

6. In computing grade averages, neither the P nor F grade in pass-fail courses will be counted.

*Final examinations* are scheduled during the last week of each quarter. As a matter of College policy, individual students are not permitted to take early final 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

A charge of \$3 is made for any change in a student's schedule after registration is completed unless such change is made upon the initiative of college authorities.

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 Change of Registration Fee and 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 Academic Dean, his major department, and, if in Teacher Education, the Department of Education.

### LOW SCHOLARSHIP

*Enrollment is terminated* at the end of the third quarter of college attendance (including quarters at other colleges) or any subsequent quarter if a student's cumulative grade average and his grade average for the quarter just completed both fall below 2.0. Students whose enrollment is terminated may normally petition the Scholastic Standing Committee for reinstatement unless they are on final probation. (See below.)

In computing grade point average, only work completed at Western Washington State College 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; 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 re-enrollment 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.

## 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. To implement this policy, certain procedures should be followed. The student normally will register his complaint with the instructor concerned. Failing satisfaction at this level, he then takes it to the department chairman who may consult with the instructor and adjudicate the matter. In the rare instances when satisfaction is not obtained at this level, the problem may be referred to the Academic Dean's Office.

## ADVANCED PLACEMENT AND COURSE CHALLENGE

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

*College Entrance Examination Board Advanced 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 may be denied

- a. if the student has previously established credit for a similar course at this or another college;
- b. if the student has previously failed the course;
- c. if the student has previously challenged the course and failed;
- d. if, in the judgment of the College Examiner, in consultation with the department concerned, the challenge procedure is inappropriate.

## 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 under the following conditions:

1. twelve quarter hours for active duty of one year or more.
2. thirty quarter hours for commissioned active duty.
3. credit 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."
4. four and one-half quarter hours for the summer training of the Navy Reserve Officer Candidate School and the Marine Corps Platoon Leader's class.



# PROGRAMS OF INSTRUCTION

The 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

## COMMON REQUIREMENTS FOR ALL BACHELOR'S DEGREES

- 192 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; not more than 48 credits may be earned by extension and correspondence study.
- 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.
- Foreign language: beginning with the class graduating in 1973, a minimum proficiency equivalent to the study

of a language other than English for two years in secondary school or one year at the college level.

- General Education: approximately 58 credits, depending upon options chosen.
- Major-minor concentrations as specified in departmental sections under *Arts and Sciences* and *Teacher Education*.
- Electives as needed for the 192 quarter hours total credit.

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

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\*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 departments for majors and minors in the catalog current at the time he declares his major and minor, and the specific requirements in a professional program stated in the catalog current at the time he is admitted 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 from the College, 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., Chemistry 121 in lieu of Chemistry 101). The appropriate department should be consulted before enrolling in any such alternate 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 Option I and II for A and/or B)

- |  |   |
|--|---|
| A. English 101 Language and Exposition (waived for students demonstrating high English competence on entrance tests) | A. English 131, 132, 133 Masterpieces of World Literature. Students who elect this option in Humanities (see below) also satisfy the composition requirement. |
| B. Speech 100 Fundamentals (waived for those passing a speech proficiency test)                                      | B. Speech 301 Speech for Teachers (open only to teacher education students of sophomore or above standing)  |

#### *Humanities*

Gen Ed 121 Ancient and Medieval World

The following program of courses satisfies the Gen Ed 121, 122, 123 series in its entirety.

Gen Ed 122 Early Modern World

History 105, 106 History of Civilization  
Six credits from Eng 281, 282, 283 Western World Literature; or English 131, 132, 133.

Gen Ed 123 Modern Period

Three credits from Phil 111, 112, 113, 210, 220, 230, 250

One course from Art 190 or Music 140



### *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. Gen Ed 105 Behavioral Science                  | A. Psych 201 <i>and</i> Soc/Anth 200 or 201  |
| B. Gen Ed 200 Economic and Political Institutions | B. One course from each of two fields:<br>Economics 201, 206<br>Geography 201, 207, 470<br>Pol Sci 101, 250  |
| C. Gen Ed 321 Non-Western Cultures                | C. Two courses from:<br>Geography 315, 319, 415<br>History 280, 481, 482, 483, 484, 485<br>Pol Sci 405, 407, 472<br>Economics 486<br>Soc/Anth 362, 363 |

### *Mathematics-Logic*

Mathematics 151 Introduction  
(waived for students with four years high school mathematics)

Philosophy 102 Logic  
(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.

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

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)

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

Chemistry 115 and 251

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

Biology 101, 204, 371

Biology 101, Botany 251, 252

Biology 101, Zool 261, 262

Physics 105, 131, 205

## Physical Education

Three activities of student's choice, except that

- a. students who fail swimming qualifying test must include P E 112
- b. women students may be required to take adapted or low fitness section of P E 102w on basis of entrance test for new freshmen.

## ARTS AND SCIENCES

In addition to the general education and other common degree requirements listed on the preceding pages, the candidate for a bachelor's degree in the Arts and Sciences must complete a major concentration, usually accompanied by supporting courses, and one minor. A few concentrations are offered which satisfy requirements for both the major and the 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 and Minors*

Requirements for the major are prescribed up to a maximum of 85 credits, or 110 credits in those concentrations which satisfy both a major and a minor. Specifications are included with each department's course listings on succeeding pages. Supporting courses, when included, are considered a part of the major requirement.

*Major concentrations* are offered in:

Art	Industrial Technology
Biology	Mathematics
Chemistry	Music
Dance	Philosophy
Econ & Bus Admin	Physics
English	Political Science
Foreign Language	Psychology
Geography	Recreation
Geology	Sociology/Anthropology
History	Speech
Home Economics	

*Minor concentrations*, generally requiring 25 credits, are offered in the fields above and also in Business Education, Health Science, Journalism, and the Dance.

## B. A. IN EDUCATION

This program leads to the *Provisional Certificate* for teaching in the public schools of the state of Washington. The certificate is valid for three years from the date of issuance. For the first year it is restricted to teaching at the level and/or subject for which the teacher is recommended by virtue of his preparation. (Consult departments on standards for recommendation.)

In addition to the general education courses and other common bachelor's degree requirements indicated on preceding pages, the candidate for this degree must complete a core of *professional education* courses, and an approved pattern of subject matter concentration as specified below. Candidates for the Provisional Certificate must be citizens of the United States; non-citizens who are permanent residents intending to become citizens may obtain special permits from the Office of the State Superintendent of Public Instruction.

### PROFESSIONAL EDUCATION COURSES—36 credits

- Ed 301 American Education and the Teacher
- Ed 411 Foundations of Education
- Ed 385 Foundations of Teaching Reading
- or
- Ed 420 Instruction in Secondary Schools
- Supervised Teaching, 16 cr. from Ed 491-498
- Psych 351 Principles of Human Learning
- Psych 352 Human Devel. and Personality
- Psych 371 Evaluation in the Public School

These educational psychology requirements may be satisfied by the conventional class program or by independent study. Students interested in the latter should consult the Psychology Department for details.

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

## MAJOR-MINOR CONCENTRATIONS—B.A. IN EDUCATION

Approved concentrations totalling 65 to 75 credits 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 of the three levels: elementary, junior high, senior high school.

### *Elementary Teachers*

#### *Majors*

45 credits in one of the following fields:

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

Mathematics  
See departmental listings for detailed specifications.

#### *Elementary Teaching Minor*

28-31 credits under advisement; required of all elementary teachers.

- |  |   |
|--|---|
| <input type="checkbox"/> Education 485<br><input type="checkbox"/> Mathematics 251<br><input type="checkbox"/> Mathematics 481<br><input type="checkbox"/> Social Studies Ed 425 | <input type="checkbox"/> Science Ed 380 or<br>two courses from<br><input type="checkbox"/> Biology 383<br><input type="checkbox"/> Geology 384<br><input type="checkbox"/> Physical Science 382 |
|--|---|

Two courses from:

- Art 380
- Music 350
- Physical Education 306
- Technology 350

One course from:

- Education 360
- English 495
- Library 305
- Speech 233, 355, 330, or 373

Prior to elementary student teaching, a student must complete Math 251 and three courses from: Ed 485, Math 481, Soc Studies Ed 425 and one science education course.

### *Secondary Teachers*

(See departmental listings for specifications.)

#### *Majors*

45 credits in one of the following fields:

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

(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 chemistry and physics majors.

Concentrations encompassing both a major and a minor are offered in art, general science, home economics, music, and physical education.

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.

#### *Minors* 25 credits

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

Biology	Journalism
Economics	Linguistics
Geology	Philosophy
Health Science	Psychology
Library Science	Sociology/Anthropology



### *Combined Junior High—Intermediate Grades*

Students desiring recommendation for teaching at both the junior high (middle school) and the intermediate grade levels may take a combination program. This program includes:

1. Completion of a major approved for junior high teaching as listed on the preceding page.
2. Completion of the Elementary Teaching Minor.
3. Supervised teaching at both levels.

## TEACHER PREPARATION FOR GRADUATES

Special study programs are provided for graduates in arts and sciences who wish to obtain certificates to teach in the public schools of Washington. These programs combine the professional teacher preparation normally given in undergraduate study with the required fifth year for standard certification. Individually tailored study programs will generally require three quarters (an academic year) for provisional certification plus a minimum of one quarter of study following successful teaching experience.

These study programs will be of interest to students who wish to complete a stronger academic background before teaching than is generally possible in the four year curriculum and to students who decide upon a teaching career after completing a general college degree program.

Study patterns are available for both secondary and elementary teaching.

*Admission* to these special programs requires:

1. Possession of a B.A. or B.S. degree with a grade average of 2.2 or better.
2. Completion of subject concentrations appropriate for the grade level at which the candidate wishes to teach.
3. Demonstration of adequate competence in written and spoken English.

Applicants will be selected by an admissions committee consisting of representatives of the Department of Education and of the subject area of the student's major concentration.

The year's pre-service study begins with a September practicum in the public schools for a period of three weeks prior to the opening of Fall quarter.

Candidates for admission to these programs for the certification for graduate students will apply to the Office of Teacher Education Advisement and 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. Formal application for admission is made while the student is enrolled in Education 301. No further professional courses may be taken until the application is approved.

To be eligible for admission the student must:

- a. *Demonstrate English competence* by presenting a grade of "B" or better in English 101 or equivalent, or by demonstrating competence in a standardized test in English mechanics and spelling, and in expository writing in Education 301. This test, made available while a student is enrolled in Education 301, may be repeated once only.
- b. *Demonstrate speech competence.* Satisfaction of the general education requirement of Speech 100 will be accepted as demonstration of competence. However, students who manifest speech problems detrimental to teaching success may be referred to the Speech Department for remedial work.
- c. *Pass Education 301* with a grade of "C" or better and be recommended by the instructor in that 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 enrolls in Education 301, 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 and may not take further professional courses until the average is restored. 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. A faculty Admissions Committee representing the Education Department and several major area departments advises on policies, and acts as a review board for petitions in marginal cases.

## THE HONORS PROGRAM

The undergraduate Honors Program provides a challenging opportunity for the student of high academic ability to realize his potential. A student may be considered for admission to Honors work if (1) his scholastic aptitude test scores place him in the upper five per cent of all students at the College; (2) he attains a cumulative college grade point average of 3.7; or (3) he is nominated by a high school or 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 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. Each Honors student is assigned a tutor to whom he presents papers for subsequent discussion and with whom he confers regularly. There are a number of special courses 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 law, medicine, and engineering 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.



## GRADUATE STUDY

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, political science, and psychology. Master of Science programs have been approved in biology, chemistry, geography, geology, mathematics, physics, and psychology.

### *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 Fifth Year 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.

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.

## CONTINUING STUDY PROGRAMS

The College, through the Department of Continuing Studies, makes its resources available to those adults who wish to continue their formal or informal education. Community organizations are also invited to contact the College for cooperation in providing special programs for adults. The role of the College is to stimulate and assist adults in a wide range of educational activities which require resources not otherwise available in the community.

### *Credit Courses*

Students may earn college extension credit in a wide variety of evening study courses available both on and off campus. A number of courses are also offered as independent home study. Most classes are taught by regular members of the teaching faculty and are open to the general public who may earn credit upon establishment of eligibility. Some 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 Department of 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 spring and summer language and liberal arts programs. Information on these programs may be obtained from the Department of Continuing Studies.







# FAIRHAVEN COLLEGE





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

This section of the catalog explains the development of the cluster college concept, its application at Fairhaven, and the environment in which it works.

## ORIGIN OF THE CLUSTER COLLEGE

The cluster college concept grew out of the pressures that accompany massive growth. Within the past quarter century, the number of students in American institutions of higher learning has grown from 1,500,000 to more than 6,000,000. During this same period, Western Washington State College has grown at a much faster rate—from 800 students to 6,200. And the end is not in sight. If a college were an industrial enterprise, education would be classed as a growth industry.

But a college is not an industry and, because students are not interchangeable units, education does not readily lend itself to mass production. As a college grows, the

multiplying echelons of administrative authority increasingly separate the individual student from those who make institutional policy. The lines between the academic departments harden and faculty attention is increasingly diverted toward responsibilities other than those of teaching undergraduates. A college is, or ought to be, a community of scholars in which professors, who are seasoned scholars, work closely with students, who are apprentice scholars. But, because a sense of community is possible only within a unit small enough to provide for easy communication among the individuals within the group, the process of education—particularly liberal education—is likely to deteriorate as the institution grows. Often this decline is obscured to outsiders by the institution's growing prestige as a research institute or by the greater visibility that results from size. But the students know.

Students on some of the larger campuses have protested vigorously against what they interpret as a lack of faculty concern for undergraduates. Faculty members, particularly those most deeply committed to the liberal purposes of education, have been troubled by the breakdown of communication among members of the various academic departments. Administrators have expressed a fear that the larger universities are becoming all but ungovernable.

Western Washington is not yet a large institution; consequently, the problems that plague the large universities have not yet become acute on this campus. But, with an enrollment of 6,200, we are becoming aware of these problems—aware that already we have lost some of the virtues of a small college.

Colleges already large cannot become small. The increasing demand for higher education and the growing number of young men and women of college age precludes the possibility of a reversal in size. But a growing institution can avoid the anonymity of the large university by breaking itself up into units of a more modest size in which students and faculty can work closely together in planning and conducting the educational process. The cluster college idea which is being developed on a number of campuses across the country offers an opportunity to restore the advantages of a small college while at the same time making full use of the superior facilities (better laboratories, larger libraries, and well staffed academic departments) of a much larger institution. Fairhaven is the first step toward the development of a version of the cluster college plan, adapted to the special needs of Western Washington State College.

It seems likely that Western some day will become a university. Already it has an expanding graduate program, a professional program of teacher education with a long history, and highly specialized academic departments.

But a large and complex institution, whether called a college or university, faces dangers which cannot wisely be ignored. The change necessitates a new emphasis on upper division and graduate instruction and a faculty committed to highly specialized research. The result of such an emphasis, as may be observed in many other institutions, is a neglect of broadly liberal education at the undergraduate level. This neglect must be avoided at Western; consequently, we are developing undergraduate colleges within the larger institution—colleges with their own faculties and their own clearly established identity. One of the purposes of Fairhaven, and of the other cluster colleges to be established later at Western, is to protect liberal undergraduate education within a framework of specialization and research.

## PURPOSES OF FAIRHAVEN

Fairhaven has been established to:

- Recapture the best features of a small college while making full use of the facilities of a much larger institution. According to this first criterion, Fairhaven's enrollment will not exceed 600 students.
- Provide a superior quality of liberal education at a cost no higher to either students or taxpayers than that of a conventional education in a state institution.
- Create an atmosphere conducive to experimentation with curricula, teaching procedures, staffing arrangements, group and 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 educational planning, and give them a greater sense of participation. A number of them are continually involved in planning the curriculum and other features of Fairhaven.

## OPERATION OF FAIRHAVEN

Fairhaven College operates under the jurisdiction of the President and the Board of Trustees of Western Washington State College. Its Dean reports directly to the President of Western. Students are members of both the Fairhaven and Western student bodies and therefore are eligible to take part in all activities of both. Funds are provided to Western by the State Legislature; however, support for special programs is being sought from private, foundation, and federal sources. To date, both the Carnegie Foundation and the Educational Facilities Laboratory have made grants to Fairhaven.

For legal purposes, Fairhaven is a division of Western. Funds available to Western are allotted to Fairhaven on the same basis as to other academic departments. Graduates will receive their degrees from Western Washington State College.

Fairhaven, which is operating now in temporary quarters, will move to its own academic and housing facilities in 1969. Its total enrollment is set at 600 students who will live in a cluster of small residence halls (50 students in each) located in Hidden Valley near the main campus. This complex will include an academic building with seminar and conference rooms, classrooms, reference library, and faculty offices; residence and dining halls; and social and recreational facilities. Fairhaven also will have its own architectural unity and visual identification. The structures have been designed by Seattle architect Paul Kirk, and construction is under way.

Fairhaven students receive instruction from both the Fairhaven faculty and the departmental faculties of Western. The former work closely with students throughout their undergraduate years and are responsible for advising students and teaching a sequence of studies which includes conferences, seminars, field work, and independent study along with formal courses. All Fairhaven students participate in this program which, for them, replaces the present general education requirements and provides a common background of knowledge and understanding. They also have full access to all science laboratory, library and recreational facilities of Western.

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 and in evaluating results.

## THE CURRICULUM

Besides required and elective courses and seminars, the curriculum is comprised of a series of educational opportunities and responsibilities outside the context of the classroom. Since the conventional course-credit system is an ineffective framework for many learning experiences, a more realistic structure is used at Fairhaven. Because of the importance of these experiences to the total education of the Fairhaven student, a substantial portion of the curriculum is devoted to this area. Specific activities are varied

according to the opportunities that arise. For example, events of critical importance in the world at a given time often lead to special seminars, or they may demand meetings of specialists with the students.

Independent study also is an integral part of this Fairhaven Program. Work in any of the formal courses may lead to the planning of a trip in which a group of students, working with faculty, can observe and study a given situation first hand. For example, the significance of artistic and cultural events can be examined more fully by observing live performances than by dealing with them only in the classroom and library. Students will attend a variety of events and these will be followed by discussions in which faculty members aid the student in analyzing the experiences. Time spent in this way is considered part of the Fairhaven curriculum and the student is "credited" when an analysis of his time and his progress is made.

The opportunities for close contact with faculty members and other students at Fairhaven are distinctive and varied. The entire architectural development of Fairhaven College has been made to encourage informality and to establish an atmosphere that is conducive to intellectual discussion. Fairhaven planners contend that fewer lectures than are typical of most college curricula can, by being imaginative when they do occur, be far more significant when coupled with extensive discussion and independent study.

## FACULTY-STUDENT CONTACT

A basic assumption of Fairhaven College is that skillful teachers and intellectually curious 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. In addition to the Individual Studies Program, there are many courses offered on the Western campus which may be elected.

The student's close contact with his faculty tutor allows the latter to work with the student in planning activities of the Individual Studies 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 on the Western campus. 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.

## AREAS OF STUDY

*Three major subdivisions comprise the curricular program of Fairhaven students: Individual Studies Program, Required Fairhaven Courses, and Area of Concentration.*

### *Individual Studies Program*

As described above, the student works closely with his faculty tutor who assists him in planning and carrying out his academic activities. Although the course-credit system provides a convenient vehicle for some academic tasks, many other experiences are of greater benefit when they are conducted in other ways. The residential aspect of Fairhaven makes it possible to build into the student's program a variety of academic and social activities. These include study and discussion with visiting scholars and artists, individual study areas in which the student has some particular interest, extensive field trips, participation in short seminars during the year, and involvement in some research or creative work. In addition, each Fairhaven student must demonstrate

his ability to express himself effectively in both writing and speaking. This phase includes participation in a variety of other activities, such as art, music, drama, student publications, and athletics. An off-campus work-study program also can be arranged.

Although faculty tutors are responsible for consultation and instruction in certain areas, students do most of their work with other faculty whose seminars or areas of scholarship are especially appropriate. Tutors advise students in all phases of their program and in some instances, they may suggest a student take elective courses.

Each year, tutors prepare a written summary and evaluation of their students' work. When students complete their studies at Fairhaven, each tutor, with a committee of Fairhaven faculty who have worked closely with the student, provides an overall evaluation.

The Individual Studies Program, then, allows maximum opportunity for the student to develop certain areas in depth and to take part fully in a series of rich and changing programs.

### *Required Courses*

Although Fairhaven allows unusual latitude for elective and independent study, several courses and sequences of courses are required. These are designed to provide the kind of knowledge and understanding that is fundamental to both a general and a specialized education. Humanities will form the basis of one sequence, although science and mathematics are integrated throughout. This program includes:

- An interdisciplinary study of the world's major cultures—their history and their intellectual and artistic contributions.
- An examination of the roots of the scientific disciplines in our cultural heritage and study of science and the scientist in contemporary society.
- A series of required seminars in behavioral science, philosophy, religion, and aesthetics.

### *Area of Concentration*

In most 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 will enjoy the advantages of a large institution with its many specialized scholars. 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. Occasionally a tutor and a student may work out a new concentration which can be made up of both Western and Fairhaven activities.

### **THREE-YEAR BACHELOR'S DEGREE PROGRAM**

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

### **CULTURAL AND RECREATIONAL OPPORTUNITIES**

Fairhaven students are eligible to participate in all activities of both Fairhaven and Western, including plays, concerts, athletics, and membership in a variety of clubs and organizations.

A Concert-Lecture Series and an Art Film Series, sponsored by the Department of Continuing Studies, provides an opportunity for students to hear outstanding speakers, artists, and musicians, and to see leading examples of film art. In addition, Fairhaven will invite numerous guests representing various fields to give both formal and informal presentations.

Intercollegiate and intramural athletics are open to Fairhaven students. Western competes with other colleges of the Evergreen Conference in football, basketball, baseball, track, tennis, golf, swimming, cross-country and wrestling. Outdoor facilities on the campus include a football field, a track, tennis courts, and extensive general recreational areas. Indoor facilities include four standard basketball courts, a swimming pool, and others. For outdoor enthusiasts, there is skiing at Mt. Baker, hiking and mountain climbing, fresh and salt water fishing, power boating and sailing.

Students own or share in the ownership of a 13-acre tract with a cabin on Sinclair Island in the San Juans, a 9-acre lakeside tract on Lake Whatcom near the college, and a ski lodge at Mt. Baker.

## 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.

Fairhaven is an exciting concept in higher education and much of its success will depend on the quality of students it attracts. Consequently, it will admit only those students 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.

Admission materials are available from high school principals and counselors and from the Admissions Office, Western Washington State College. Interested students should complete the application forms and return them to Dr. Charles W. Harwood, Dean, Fairhaven College, Western Washington State College, Bellingham, Washington 98225.

## COSTS

Tuition, fees, and other costs are the same for Fairhaven students as for Western students.

### *Tuition and Fees (annual)*

Residents of Washington	\$264
Non-Residents of Washington	471

<i>Books and Supplies (estimated)</i>	150
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<i>Room and Board in Fairhaven Residences</i>	770
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Consult the General Catalog for more detailed information.

### *Total Expenses (estimated)*

Residents	\$1,184
Non-Residents	1,391

One third of the annual tuition and fees is payable each term. Board and room charges are generally paid each quarter.

An amount for incidentals, travel, and clothes should be added as indicated by the individual's tastes and circumstances. While the average is about \$300 a year, the need for extra money is minimal since the student activity program is in large part already financed.

## FINANCIAL ASSISTANCE

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 regarding financial assistance, consult the General Catalog or apply to the Director of Financial Aids.



## CURRICULUM SUMMARY

The curriculum requirements unique to Fairhaven will comprise roughly one-half of the student's college time and will always bear the imprint of individual tailoring to individual needs. As a general guideline, the following program, with credit equivalents, is offered:

### *Fairhaven Requirements*

#### *Humanities*

One-third of the student's time the first year and a lesser load in the following year.

- Ancient World to 1492 (15 credit equivalent; first year)
- 1492 to 1814 (10 credit equivalent; second year)
- 1814 to present (5 credit equivalent; third year)

#### *Science-Mathematics*

Science and the scientist in contemporary society. Usually starts in the spring of the freshman year, continues for three quarters and comprises a one-third load (15 credit equivalent).

#### *Seminars*

One academic quarter in duration and one-fourth of a student's load; 4 credit equivalent each.

- Behavioral Science (Normally taken in first year).
- Philosophy and Religion.
- Aesthetics.
- Senior Seminar (Normally taken in fourth year).

#### *Individual Studies Program*

Planned independent study, elective seminars, artistic and cultural events, travel and work which are pertinent to the student's areas of interest and which contribute to his understanding of himself and his relationship to society (30 credit equivalent, minimum).

#### *Area of Concentration* (variable credit hours)

Usually a major and minor taken at Western. See Western's "Departments of Instruction" in the General Catalog for requirements.

#### *Professional Education*

Students working toward the Bachelor of Arts in Education degree and teacher certification will be advised by the Fairhaven staff.



# DEPARTMENTS OF INSTRUCTION

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 397, 497, and 597 are generally reserved for special workshops or courses offered once only.

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 Office of Continuing Studies for the scheduling of courses.

# ART

*Professor:* Weiner . *Associate Professors:* Applegate, Kelsey, Marsh (Chairman), Vike . *Assistant Professors:* Foss, Hanson, Jensen, Schlotterback, Vassdal, Wegner  
*Instructor:* Johnston . *Lecturers:* Dahlen, Thomas.

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.

## ARTS AND SCIENCES

*Studio Major* 73 credits plus Supporting Courses

- Art 101, 102, 103, 130, 201, 210, 220, 230, 401
- One course from Art 240, 260, 350
- One course from Art 302, 402, 403 (crafts majors take 331 instead)
- Art 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, 313, 312, 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 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, 195
- Electives selected under departmental advisement

*Art History Major* 60 credits plus Supporting Courses

- Art 193, 194, 195, 290, 390, 493
- Three areas from:
  - (a) Art 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 193, 194, 195, 493
- Two courses selected under advisement from each of two areas: Primitive, Ancient, Renaissance, Modern, or American

### TEACHER EDUCATION

#### *Major* Elementary and Secondary 45 credits

- Art 101, 102, 103, 130, 195, 210, 220, 230, 240, 270, 381, 382
- One additional course in art history
- Two upper division courses from the studio concentrations listed above in the Arts and Sciences major

#### *Minor* 25 credits

- Art 101, 102, 130, 195, 381
- 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, 220, 230
- Art 270, 381, 382, 401
- One course from Art 240, 260, 350
- One course from Art 302, 402 (Crafts majors substitute 331)
- Art 193, 194, 195, and one additional art history course
- 15 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 242 or 442 or English 487.

### GRADUATE STUDY

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

## COURSES IN ART

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

- 101 DRAWING AND DESIGN I (3)  
Fundamental principles and techniques using a variety of black and white media.
- 102 DRAWING AND DESIGN II (3)  
Prerequisite: Art 101. Studies of form and structure in a variety of media; emphasis on color, pattern and design concepts.
- 103 DRAWING AND DESIGN III (3)  
Prerequisite: Art 101. Emphasis on pictorial space, volume, and the figure.
- 130 THREE DIMENSIONAL DESIGN (3)  
Exploration of sculptural 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; role of line, plane, color, texture, volume, and space.
- 193 SURVEY OF ART HISTORY I (3)  
Prerequisite or concurrent: G E 121 or Hist 105. Ancient and medieval art.
- 194 SURVEY OF ART HISTORY II (3)  
Prerequisite or concurrent: G E 121 or Hist 105 or Art 193. Renaissance art, 13th-18th centuries.
- 195 SURVEY OF ART HISTORY II I (3)  
Prerequisite or concurrent: G E 121 or Hist 105 or Art 193 or 194. Modern art in 19th, 20th centuries.
- 201 LIFE DRAWING I (3)  
Prerequisite: Art 103.
- 210 PRINTMAKING I (3)  
Prerequisite: Art 102, 103. Introduction to the major print processes; relief, planographic, and intaglio.
- 220 PAINTING I (3)  
Prerequisites: Art 102, 103. Beginning painting; control of form and technique in relation to still-life, life paint, landscape and personal invention, using water-soluble or oil media.
- 230 SCULPTURE I (3)  
Modeling and carving with emphasis on projection of volume in space.

- 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.
- 260 FABRIC DESIGN I (3)  
Prerequisites: Art 102, 103. Problems using dyes, yarns, and textiles in various introductory techniques.
- 270 LETTERING I (2)  
Prerequisites: Art 101 or permission. Anatomy of letter forms, alphabets and calligraphy; problems in pen and brush lettering.
- 290 MODERN ART HISTORY I (3)  
Prerequisite: Art 195. The art of the 19th century Western World.
- 292 ANCIENT ART I (3)  
Prerequisites: Art 193 and 194 or permission of instructor. Art of ancient Egypt, Mesopotamia, Crete, Mycenae and peripheral areas.
- 295 RENAISSANCE ART I (3)  
Prerequisite: Art 193 and 194, or permission of instructor. Art of the Renaissance in Southern Europe.
- 302 LIFE DRAWING II (3)  
Prerequisite: Art 201.
- 311 PRINTMAKING—LITHOGRAPHY (3)  
Prerequisites: Art 195, 210. Planographic processes; emphasis on lithography and woodcut.
- 312 PRINTMAKING—INTAGLIO (3)  
Prerequisites: Art 195, 210. Intaglio processes; etching, engraving and aquatint.
- 313 PRINTMAKING—SERIGRAPHY (3)  
Prerequisites: Art 195, 210. Serigraphy, emphasizing stencil techniques.
- 321 PAINTING (3)  
Prerequisites: Art 195, 220.
- 325 WATER COLOR PAINTING (3)  
Prerequisites: Art 195, 220. Various water-soluble media.
- 328 LIFE PAINTING (3)  
Prerequisites: Art 195, 220. Concentration on the human figure.
- 331, 332, 333 SCULPTURE II, III, IV (3 ea)  
Prerequisites: Art 195, 230. Problems in three-dimensional form and expression employing a variety of media and materials.
- 341 CERAMICS II (3)  
Prerequisites: Art 195, 240. 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.
- 350 JEWELRY I (3)  
Prerequisites: Art 102, 130, 195. Design and construction of jewelry in various metals, with emphasis on silver; the setting of stones.
- 351 JEWELRY II (3)  
Prerequisites: Art 195, 350. Problems in simple and centrifugal casting.
- 352 ENAMELING (3)  
Prerequisites: Art 350. Techniques of enameling on metals.
- 353 GLASS (3)  
Prerequisites: Art 102, 130, 195. Glass as an art medium; fusing, laminating, slumping, pressing, and casting.
- 361 FABRIC DESIGN II (3)  
Prerequisites: Art 195, 260. Problems with repeat pattern using silk screer, block printing, and dyes on textiles.
- 362 FABRIC DESIGN III (3)  
Prerequisites: Art 195, 260. Problems in textiles using a variety of techniques in dyes, yarns, and fabrics.
- 371 REPRODUCTION LETTERING AND GRAPHIC DESIGN (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 (3)  
Prerequisites: Art 103, 195, 371. Design as communication; design and preparation of material for graphic reproduction.
- 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 ART EDUCATION (3)  
Prerequisites: Art 102 and 103 or Art 380; Gen Ed 105. 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.

- 390 MODERN ART II (3)  
Prerequisite: Art 195. Art of the 19th century world.
- 391 ORIENTAL ART (3)  
Prerequisites: Art 193, or 194 or permission of instructor. Oriental art with emphasis on China, India, and Japan.
- 392 ANCIENT ART II (3)  
Prerequisite: Art 292 or 193 and permission of instructor. Art of the ancient Greek and Roman civilizations.
- 394 PREHISTORIC AND PRIMITIVE ART I (3)  
Prerequisite: Art 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)  
Prerequisites: Art 295 or Art 193 and 194 and permission of instructor. Art of the Renaissance in Northern Europe.
- 398 AMERICAN ART TO 1913 (3)  
Prerequisites: Art 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.
- 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.
- 402, 403 INVENTIVE DRAWING (3 ea)  
Prerequisite: Art 201. Problems in drawing as a major medium.
- 411, 412, 413 PRINT WORKSHOP (3 ea)  
Prerequisite: Art 313. Advanced printmaking, open media; use of color in intaglio or lithography.
- 421, 422, 423 ADVANCED OIL PAINTING (3 ea)  
Prerequisite: 9 credits in painting, or permission of instructor. Individual search for form and expression.
- 424 MURAL PAINTING (3-5)  
Prerequisite: 12 credits in painting or permission of instructor. Design, planning and group execution of murals for specific environments and sites.
- 425, 426, 427 ADVANCED WATER COLOR PAINTING (3 ea)  
Prerequisite: Art 325 or permission of instructor. Painting workshop using aqueous media.
- 431 CERAMIC SCULPTURE (3)  
Prerequisite: Art 331, 341. Use of ceramic materials as a sculptural medium.
- 432 DIRECT METAL SCULPTURE (3)  
Prerequisite: Art 331. Direct metal sculpture; emphasis on the welding processes
- 433 BRONZE CASTING (3)  
Prerequisite: Art 331. Bronze casting by the lost wax process; modeling in clay, wax and plaster; mold-making and other techniques for making cast metal sculpture.
- 434, 435 ADVANCED SCULPTURE (3 ea)  
Prerequisite: Art 331. Advanced problems in sculptural form and expression.
- 441 ADVANCED SCULPTURE (3 ea)  
Prerequisite: Art 342. Advanced problems in ceramic form and expression.
- 451 ADVANCED JEWELRY (3)  
Prerequisite: Art 351. Advanced problems in jewelry as an art form.
- 461 ADVANCED FABRIC DESIGN (3)  
Prerequisite: Art 361. Advanced workshop in tapestry, rug making and other media.
- 462 PLASTICS (3)  
Prerequisite: senior status. Problems in transparent design using plastics with metal, wood, or other materials.
- 471 ILLUSTRATION (3)  
Prerequisites: Art 195, two painting courses. Techniques of illustration for graphic reproduction.
- 472 POSTER AND DISPLAY (3)  
Prerequisite: Art 313. Two and three-dimensional display; design and production of the silk screen poster.
- 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.
- 492 MEDIEVAL ART (3)  
Prerequisite: Art 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 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)

497a ENVIRONMENTAL ART (6)

Creation of a total aesthetic environment whose pattern is ordered by the dictates of artistic reason rather than that of practical living. Summer.

498 AMERICAN ART, 1913 TO THE PRESENT (3)

Prerequisite: Art 193, 194, 195.

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)

Prerequisites: graduate status or completion of an art major or equivalent. Individual problems in painting.

531 GRADUATE SCULPTURE (2-4)

Prerequisites: graduate status or completion of an art major or equivalent. Individual problems.

541 GRADUATE CRAFTS (2-4)

Prerequisites: graduate status or completion of an art major or equivalent. Individual problems in selected crafts.

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.

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 (Chairman), Flora, Martin, Senger  
*Associate Professors:* Dube, Erickson, Heath, Kirkpatrick, Kraft, Parakh, Riffey, Ross, Schwemmin, Taylor  
*Assistant Professors:* Brown, Dallas, Fonda, Haard, Kohn, Mason, Schneider.

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. Biology 101 should be included in an early quarter as it is prerequisite to most biology courses. Transfer students must complete in residence in this College at least 11 credits of the major or 5 credits of the minor.

## ARTS AND SCIENCES

*Major* 50 credits plus Supporting Courses

- Biology 301, 371, 477 (or Chem 471, 472)
- Botany 251, 252; Gen Sci 405
- Zoology 261, 262
- Upper division electives under departmental advisement
- Supporting courses: Chem 121, 122 or 124, 123, 127, 128, 233 (or 461, 462, 463), 251 (or 351 and 354); one year of college physics under advisement; Math 220 (or 122), 240; Geol 211 or 212.  
(Supporting courses may apply, where appropriate, to a minor.)

*Minor* 25 credits

- Botany 252 and Zoology 261
- Botany 251 or Zoology 262
- Ten additional credits from Botany 251, Zoology 262, or upper division courses.



## TEACHER EDUCATION

The preparation of secondary teachers of biology involves a five-year program. Students will enroll in the Arts and Sciences degree program with a biology major. The professional education requirements are deferred to the fifth year under the Certification Programs for graduates (see page 42 ).

Note: For students planning to teach in the elementary or junior high school, a General Science major is recommended. That concentration includes courses in biology.

*Minor* 25 credits

- Botany 252 and Zoology 261
- Botany 251 or Zoology 262
- Ten additional credits from Botany 251, Zoology 262, or upper division courses.

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a biology major who wishes to graduate "with honors" must complete Biology 399 each quarter in the junior year; 8 credits of "A" grades in upper division biology courses will be accepted for honors credit for those students first entering the program in their junior year. Junior and senior tutorials will be utilized for background reading and research leading to a senior 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: In the revised General Education program beginning fall 1968, Physics 101 and Chem 101 or equivalents must precede this course. Major concepts of biology and their contribution to man's thinking and culture, cell physiology, genetics, growth and development, evolution.

### 204 GENERAL BIOLOGY (4)

Prerequisite: Biol 101. Variety, classification, development, adaptation, distribution, evolution and interrelationship of organic forms in the plant and animal kingdoms.

### 240 MARINE BIOLOGY (3)

Prerequisite: Biol 101. Study of plants and animals of the seashore. Not open to students with credit in Zoology 461 or Botany 456. Summers only.

### 300 SPECIAL PROJECTS IN BIOLOGY (1-2)

Prerequisites: 15 credits in biological science and permission of instructor.

### 301 ECOLOGY (5)

Prerequisites: Bot 252 and Zool 261; physics and chemistry recommended. Basic principles studied in marine, estuarine, fresh water and terrestrial habitats. Not open to students with credit in Zoology 461.

### \*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 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 elementary school.

### 396a,b,c HONORS TUTORIAL (2-5 ea)

### 399 SEMINAR IN BIOLOGY (1)

Prerequisite: 25 credits in biological sciences and permission of instructor. Outstanding developments, past and present, in the biological sciences.

### 400 SPECIAL PROJECTS IN BIOLOGY (2-5)

Prerequisite: permission of instructor.

### 402 LIMNOLOGY (5)

Prerequisite: Biol 301. Physical and chemical characteristics of fresh water in relation to biotic communities; field trips.

### 403 PHYSIOLOGICAL ECOLOGY (4)

Prerequisites: Biol 301 and permission of instructor. Field and laboratory studies of organisms from desert, mountains, rain forest, fresh and salt water; critical survey of literature; methods for design and analysis of experiments.

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

- 405 SOIL ECOLOGY (5)  
Prerequisite: Biology 301 and permission of instructor. The soil habitat and adaptations of soil bacteria, fungi, algae, and protozoans to it.
- 406 GENERAL OCEANOGRAPHY (3)  
Prerequisites: Phys 131, 132; Chem 121, 122. Survey of oceans from geological, physical, chemical and biological points of view.
- 447 COMMUNITY HEALTH AND HYGIENE (3)  
Prerequisite: 10 credits in biology. Practical application of principles of hygiene in a study of community, national, and international health problems.
- 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.
- 473 HISTOLOGICAL TECHNIQUES (5)  
Prerequisite: 10 credits in biology. Preparation of microscope slides of both plant and animal tissues.
- \*477, 478 GENERAL CELLULAR PHYSIOLOGY (5 ea.)  
Prerequisites: 20 credits in biological sciences, Chem 121-122 and 251 or 351-352, or permission of instructor; Biol 477 prerequisite to Biol 478. Structural and functional basis of living matter; the cell.
- 490 PRINCIPLES OF ORGANIC EVOLUTION (3)  
Prerequisite: Biology 301, 371. Principles, patterns, processes, and mechanisms of evolution in the organic world.
- 493 BIOLOGICAL SCIENCE FOR THE JUNIOR AND SENIOR HIGH SCHOOL (3)  
Prerequisite: 15 credits in biological science. Philosophy, concepts, learning experiences and material for the teaching of biological sciences in the secondary school.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 500 SPECIAL PROJECTS IN BIOLOGY (2-5)  
Prerequisite: permission of instructor.
- 501 THESIS RESEARCH (4-9)  
Prerequisite: permission of thesis advisory committee. Original investigation of a specific problem in biology. (A student should register for credit in the quarter in which he expects to complete the thesis.)
- 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, Zoology 366, 368; 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.
- 580 RADIATION BIOLOGY (3)  
Prerequisites: Biol 477, Phys 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.

## COURSES IN BOTANY

- 251 GENERAL BOTANY (5)  
Prerequisite: Biol 101. Plants as living organisms; the structure and functions of typical vascular plants. Heredity and biology of the cell are included in Biology 101 and are not repeated here.

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

- 252 GENERAL BOTANY (5)  
Prerequisite: Biol 101. The major divisions of the plant kingdom; interpretation of present structure in terms of ecological adaptation and past evolutionary heritage.
- 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: Bot 252. Historical survey of classification systems; use of taxonomic keys, and evolutionary development of flowering plants; recognition of common plants.
- 404 PLANT COMMUNITIES (3)  
Prerequisite: Biol 301. Ecology of plant communities with special emphasis on analysis, description, succession, and distribution. Weekend field trips included.
- 452 EVOLUTIONARY SYSTEMATICS OF VASCULAR PLANTS (4)  
Prerequisite: Botany 352 or permission of instructor; organic chemistry recommended. Applications of phytochemical, cytogenetical, palynological, and morphological studies in phylogenetic determinations among higher 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: Bot 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.
- 472 PLANT ANATOMY (4)  
Prerequisite: Bot 251. Development and structure of cells, tissues, and organs of vascular plants.
- 475 DEVELOPMENTAL MORPHOLOGY (3)  
Prerequisites: Bot 251 and 252. Experimental approach to the study of plant morphology.
- 479 PLANT PHYSIOLOGY (4)  
Prerequisite: Bot 251 and Chem 251. Mineral nutrition, water economy, soils, auxins, and other items of special importance to plant growth.

- 481 STRUCTURE AND PHYSIOLOGY OF TREES (3)  
Prerequisite: Bot 479. Studies of principles of tree growth and of structure in relation to water economy; translocation and storage of organic products of photosynthesis.

## COURSES IN ZOOLOGY

- 241 HUMAN ANATOMY (5)  
Prerequisite: Biol 101 recommended; not open to students taking the combined anatomy-physiology courses, Zoology 248, 249.
- 243 HUMAN PHYSIOLOGY (5)  
Prerequisite: Biol 101 recommended. Normal functions of the human body and bodily processes. Not open to students taking the combined anatomy-physiology courses, Zoology 248-249.
- 248-249 HUMAN ANATOMY AND PHYSIOLOGY (5 ea)  
Prerequisites: Biol 101 or permission of instructor; Zool 248 prerequisite to 249. Structure and function of the human body. Not open to students who have had Zool 241 or 243.
- 261 GENERAL ZOOLOGY (5)  
Prerequisite: Biol 101. Invertebrate phyla, protozoa through the annelids, and molluscs.
- 262 GENERAL ZOOLOGY (5)  
Prerequisite: Zool 261. Arthropod phylum and the chordate line.
- 263 ANIMALS OF THE NORTHWEST (3)  
Amphibians, reptiles, birds and mammals; their identification, life histories, habits, and distribution. Summers only.
- 361 ORNITHOLOGY (3)  
Prerequisite: Biol 101. Morphological adaptations of birds; their evolution, classification, distribution, and economic importance; field trips.
- 362 ORNITHOLOGY (3)  
Prerequisite: Biol 101; Zool 361 recommended. Migration, foods, nesting behavior; types of bird protection.
- 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.
- 424 ENTOMOLOGY (3)  
Prerequisite: Zool 262. Insects: their morphology, physiology, metamorphoses, classification, and economic importance.

425 FIELD ENTOMOLOGY (3)

Prerequisite: Zool 262. Collection, preservation, and identification of insects. Not open to those having had Zool 324 and 325 or equivalent. Summers only.

426 PRINCIPLES OF INSECT CONTROL (3)

Prerequisite: Zool 262 or permission of instructor; Zool 324 recommended. Legal, physical, cultural, chemical, and biological regulation of insect populations; life cycles and control of major pest species.

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.

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 324 and Biol 301. Classification and ecological interrelationships of insects in streams and lakes.

## CHEMISTRY

*Professors:* Frank (Chairman), Knapman, Neuzil  
*Associate Professors:* Besserman, Chang, Eddy, Lampman  
*Assistant Professors:* King, Kriz, Miller, Russo, Wicholas, Wilson.

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.

### TEACHER EDUCATION

*Major* Senior High School

45 credits plus Supporting Courses

- Chemistry 121, 122, 123, 127, 128, 233
- Chemistry 351, 352, 353, 354, 461, 462, 463, 492

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- Supporting courses: one year college physics and 15 credits in mathematics including Math 222

*Minor* 25 credits

- Chemistry 121, 122, 123, 127, 128, 351 and 352 (or 251)
- One course from Chemistry 233, 461, 492, or Physical Science 492

*Teaching Competence*

Recommendation for teaching competence normally requires completion of the major with a grade average of 2.5 or better.

### BACHELOR OF ARTS DEGREE

*Major* 56 credits plus Supporting Courses

- Chemistry 121, 122, 123, 127, 128, 233, 351, 352,

353, 354, 355, 434, 461, 462, 463, 464, 465, plus elective

Supporting courses: one year college physics and 15 credits in mathematics including Mathematics 222

*Minor* 25 credits

Chemistry 121, 122, 123, 127, 128, 351 and 352 (or 251)

Chemistry 233 or 461

## BACHELOR OF SCIENCE DEGREE

*Major Concentration* 110 credits  
(Satisfies both the major and minor)

Chemistry 121\*, 122, 123, 127, 128, 233

Chemistry 351, 352, 353, 354, 355, 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. 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

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

major; Chemistry 498; at least four 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 Chemistry 121, 122 in their programs.

### 121 GENERAL CHEMISTRY (5)

Methods of chemistry, nature of matter, atoms, chemical bond, stoichiometry, gases, liquids, solids.

### 122 GENERAL CHEMISTRY (4)

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

### 123 QUALITATIVE ANALYSIS LABORATORY (1)

Laboratory experiments in the systematic separation of the elements. To be taken with Chemistry 122 or 124.

### 124 PRINCIPLES OF CHEMISTRY (4)

Prerequisites: strong background in high school chemistry and/or mathematics; permission of department; concurrent enrollment in Chemistry 123 required. A more rigorous treatment of selected topics in general chemistry offered as a substitute for Chemistry 121, 122.

### 127 INORGANIC CHEMISTRY (3)

Prerequisite: Chem 122 or 124. Chemical periodicity, electrochemistry, elementary thermodynamics, coordination compounds.

### 128 ELEMENTARY QUANTITATIVE CHEMISTRY (2)

Concurrent enrollment in Chem 127 required; not open to students with credit in Chem 131. 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.
- 233 INTRODUCTORY ANALYTICAL CHEMISTRY (5)  
Prerequisites: Chem 127 and 128. Theory and practice of separation methods including precipitation, extraction, and chromatography; optical and potentiometric methods of determination.
- 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 Chemistry 351-354 series.
- 300 PROJECT IN CHEMISTRY (1-2)  
Prerequisites: 20 credits in chemistry and permission of instructor. Projects under supervision.
- 305 GLASS WORKING (1)  
Prerequisite: permission of instructor. Basic glass working and construction of simple glass apparatus.
- 344 INORGANIC PREPARATIONS (2-3)  
Prerequisite: Chem 233. Preparations of selected inorganic compounds of high purity by diverse methods.
- 351, 352, 353 ORGANIC CHEMISTRY (3 ea)  
Prerequisite: Chem 122; 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.
- 371 ELEMENTARY BIOCHEMISTRY (3)  
Prerequisite: Chem 251. Outlines of structures and metabolisms of carbohydrates, lipids, proteins, and nucleic acids; biochemical functions of vitamins, hormones, and some co-enzymes; basic properties of enzymes.
- 372 ELEMENTARY BIOCHEMISTRY LAB (1)  
Prerequisite or concurrent: Chem 371. Simple separation and analyses of biochemically important compounds from various biological origins; observation and simple measurements of rates of enzyme-catalyzed reactions.
- 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)
- 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 (5)  
Prerequisite: Chem 463. 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 bond structure and shape of molecules, acids and bases, coordination compounds and ions, transition metals, lanthanides, and actinides.
- 454 ADVANCED ORGANIC SYNTHESIS (3)  
Prerequisites: Chem 353 and 354. The use of preparative organic reactions involving advanced techniques of synthesis.
- 455 SPECTROMETRIC AND CHEMICAL IDENTIFICATION OF ORGANIC COMPOUNDS (3)  
Prerequisites: Chem 355, 434. Identification of organic compounds using chemical and spectrometric methods of analysis. Methods included are mass spectrometry, infrared, nuclear magnetic resonance and ultraviolet spectrometry.
- 461, 462, 463 PHYSICAL CHEMISTRY (4, 4, 3)  
Prerequisites: one year of college physics, Math 222, and Chem 128, 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 INTRODUCTORY BIOCHEMISTRY (3)  
Prerequisites: Chem 353 and Biol 101. Chemistry of carbohydrates, proteins, nucleic acids, and lipids. Metabolism of carbohydrates. Chemical properties of enzymes and mechanism of enzyme-catalyzed reactions.
- 472 INTRODUCTORY BIOCHEMISTRY LABORATORY (2)  
Prerequisites: Chem 233, 354, and 471 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 Phys 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.
- 492 HIGH SCHOOL CHEM STUDY (3)  
Prerequisite: 25 credits in chemistry. Content and methods for teaching the "new" high school chemistry courses such as CHEM study; theoretical and experimental materials selected from the areas of atomic and molecular structure, bonding, kinetic theory, equilibria, chemical kinetics, carbon compounds.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 497 AEC - MOBILE RADIOISOTOPE LABORATORY (2)  
Prerequisite: permission of department. A short and intensive lecture-laboratory course in the detection of radiation with applications in the fields of biology, chemistry, and physics. Offered fall 1967 only.
- 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.
- 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.
- 541 SPECIAL TOPICS IN INORGANIC CHEMISTRY (3)  
Prerequisite: Chemistry 463. Complex ions and coordination compounds, inorganic substances in nonaqueous media; mechanisms of inorganic reactions.
- 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)  
Prerequisite: 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 such as nuclear and electron magnetic resonance, Mossbauer, Raman, Infrared and Ultraviolet Spectra.
- 571 GENERAL BIOLOGICAL CHEMISTRY (3)  
Prerequisites: Biol 101 and Chem 353 and 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.
- 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:* Mayer (Chairman), Mitchell, Palmer . *Associate Professors:* Baydar, Haglund, Mischaikow, Spratlen, Zaidi . *Assistant Professors:* Coelho, Faulkner, McAllister, Walter . *Lecturers:* Bent, Tebrich, Zoet

## TEACHER EDUCATION

### *Major In Business Education*

Secondary 45 credits

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

- Business Education 116, 117 or 215, 120, 121, 122, 201, 223, 241 or 242, 319, 321, 322, 323
- Economics 101, 201
- 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, 251, 252, 271, 408
- Five credits from Economics 253, 311, 322, 325, 335, 341

### *Minor—Economics* 23-25 credits

(For other than Business Education majors)

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

### *Minor—Business Education* 25 credits

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

## ARTS AND SCIENCES

### *Major* 60-85 credits plus Supporting Courses

Common core for all major concentrations:

- Economics 201, 202, 251, 252, 253, 301, 302, 311, 375, Math 240
- Supporting courses: Math 220 (in place of Math 151), Math 270, Geog 207, Hist 360. (Students in the Economics concentration may substitute Math 241 for 270.) Business Education 201 also recommended.

Select one of the following concentrations:

#### *Economics*

- Economics 385 (or History 341), 403
- Fifteen credits selected under advisement from Economics 325, 400, 410, 412, 426, 442, 461, 482, 485, 486, 491

Also recommended: Soc-Anth 201 and Phil 113

#### *Business Administration* (Satisfies both a major and a minor)

- Economics 271, 322, 333, 335, 353 (or 352), 401, 408, 411, 412

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

#### *Accounting* (Satisfies both a major and a minor)

- Economics 271, 322 or 325, 333, 335, 352, 354, 411, 455, 457



Students who plan to make a professional career in public accounting and who wish to reduce to one year the experience requirement prerequisite to taking the State of Washington CPA examination, should take Economics 371 and a total of at least 45 credits in accounting.

#### *Minor—Economics* 25 credits

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

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

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

#### *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, 251, 252, 253, 301, 302, 311
- Twelve upper division credits in economics selected under departmental advisement
- History 360
- Mathematics 121, 122, 222, 223, 241, 270, 301, 302, 341, 342 (Math 441, 442, 443 may be substituted for 341, 342)
- Eight credits under advisement in 400 level mathematics courses

#### 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

- 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.
- 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: Econ 201 and Math 100 or 151, or equivalent. Theory of price and income distribution with particular application to the structure of American industry.
- 206,207 THE AMERICAN ECONOMY (4 ea)  
Organization and operation of the American economy; particularly recommended for social studies teachers.
- 250 INCOME TAX FOR THE EMPLOYEE AND SMALL PROPRIETOR (3)  
For wage earners, small businessmen, and non-economics majors. Fundamental principles of the federal income tax law; completion of simple returns.
- 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 bookkeeping and financial statements.
- 252 PRINCIPLES OF ACCOUNTING (4)  
Prerequisite: Econ 251. Emphasis on depreciation, the voucher system, partnership and corporation accounting.
- 253 ADMINISTRATIVE ACCOUNTING (4)  
Prerequisite: Econ 252. Manufacturing accounting, financial analysis, interpretation of accounting data.
- 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.

- 291 PERSONAL FINANCE AND INVESTMENTS (3)  
Various outlets for savings, such as savings accounts, stocks, bonds, and insurance; major institutions in the investment market. Summer only.
- 301 NATIONAL INCOME ANALYSIS (4)  
Prerequisites: Econ 201, 202, and 311. Determinants of the level of income, employment and output in the economic system.
- 302 INTERMEDIATE ECONOMIC THEORY (4)  
Prerequisites: Econ 201, 202. 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)  
Prerequisite: Econ 201, 202. Nature and functions of money, credit, banking, and relationship of money and bank deposits to the economy.
- 322 PERSONNEL MANAGEMENT (5)  
Prerequisite: Econ 101 or 201. Principles and practices involved in obtaining and maintaining an effective working force; job evaluation, hiring practices, and wage administration.
- 325 ECONOMICS OF LABOR (5)  
Prerequisite: Econ 201. The economies of the labor market; development and functioning of labor unions and collective bargaining.
- 333 PRINCIPLES OF PRODUCTION (5)  
Prerequisites: Econ 202 and 253, or permission of instructor. Principles and procedures of the manufacturing enterprise; organization and administration, location and layout, planning and control.
- 335 PRINCIPLES OF MARKETING (5)  
Prerequisite: Econ 101 or 201, or permission of instructor. Institutions, functions, problems and policies in the distribution of industrial and consumer goods; pricing, costs, and governmental regulations.
- 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.
- 341 PRINCIPLES OF TRANSPORTATION (5)  
Prerequisite: Econ 201. Economic principles and problems relative to the transportation and communication system of the United States.
- 350 INCOME TAX ACCOUNTING I (3)  
Prerequisite: Econ 251 or permission of instructor. General income tax requirements; special problems relating to individual tax returns.
- 351 INCOME TAX ACCOUNTING II (3)  
Prerequisite: Econ 252, 350. Special problems of partnerships, corporations, and trusts; introduction to tax research.
- 352 COST ACCOUNTING (5)  
Prerequisite: Econ 253; available to students who have taken Econ 353 only with permission of instructor. Historical factory job and process cost systems, distribution cost systems, fixed and flexible budgeting and other controls over business operations available from accounting records.
- 353 CONCEPTS OF CONTROLS (3)  
Prerequisite: Econ 253; not open to students who have taken Econ 352. Use of budgeting, statistical, and cost systems in achieving planned objectives; responsibility, reporting, and elements of information systems.
- 354 INTERMEDIATE ACCOUNTING (5)  
Prerequisite: Econ 253. Accounting theory and its application to financial statements, inventories, depreciation, and funds.
- 356 MUNICIPAL AND GOVERNMENTAL ACCOUNTING (3)  
Prerequisite: Econ 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: Econ 353 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: Econ 271. Legal principles underlying the law of agency, negotiable instruments, sales, partnerships, and corporations.
- 375 STATISTICAL METHODS (3)  
Prerequisite: Math 240 or equivalent. Concepts of sampling; statistical inference and statistical decision-making applied to problems in economics and business.
- 385 THE RISE OF CAPITALISM (4)  
Prerequisite: Econ 202. Evolution of economic institutions in Europe 800-1800; growth of capitalistic market societies.
- 396a,b,c HONORS TUTORIAL (2-5 ea)
- 400 SPECIAL PROBLEMS IN ECONOMICS (1-5)  
Prerequisites: 20 credits in economics and prior consultation with instructor.

- 401 ADMINISTRATIVE ORGANIZATION AND BEHAVIOR (5)  
Prerequisite: Econ 253, or permission of instructor. Analysis of processes of management; functions, decision-making, standards of performance, interdisciplinary contributions to organizational behavior.
- 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.
- 408 THE ROLE OF BUSINESS IN AMERICAN SOCIETY (3)  
Development of American capitalism and its legal, philosophical, and ethical foundations.
- 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.
- 411 BUSINESS ORGANIZATION AND FINANCE (5)  
Prerequisites: Econ 101 or 201, and 253 or permission of instructor. Major forms of business organization; problems dealing with sources, uses, and control of funds in business enterprises.
- 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.
- 421 PROBLEMS IN PERSONNEL ADMINISTRATION (3)  
Not open to students who have taken Economics 322. Problems of wage and salary administration, employee rating, and employee selection. Summer only.
- 426 LABOR RELATIONS AND THE LAW (3)  
Prerequisite: Econ 325 or permission of instructor. Non-technical course in the elements of labor law.
- 442 GOVERNMENT AND BUSINESS (5)  
Prerequisites: Econ 202 or permission of instructor. Public policy and business enterprise.
- 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.
- 455 ADVANCED ACCOUNTING (5)  
Prerequisite: Econ 354. Application of accounting theory to partnerships, branch accounting, installment sales, and other problems.
- 456 CONSOLIDATIONS AND FIDUCIARY ACCOUNTING (5)  
Prerequisite: Econ 455. Special problems of consolidated corporations and fiduciaries.
- 457 AUDITING (5)  
Prerequisites: Econ 455, or 253 and permission of instructor. Generally accepted auditing standards and principles; applications in public and internal auditing.
- 458 ADVANCED COST ACCOUNTING AND CONTROLLERSHIP (4)  
Prerequisite: Econ 352. Critical examination of controls available to management from cost and other accounting records.
- 459 ADVANCED ACCOUNTING THEORY (3)  
Prerequisite: Econ 352 or 353 or 354. Theory of accounting related to income measurement, assets, and equities; uses and limitations of general purpose financial statements.
- 461 INTERNATIONAL ECONOMICS (5)  
Prerequisite: Econ 202. International trade theories; foreign economic policies; the relationship between international trade and domestic activity.
- 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.
- 487 COMPARATIVE INDUSTRIALIZATION: 19TH CENTURY (4)  
Prerequisites: Econ 385 or permission of instructor. Similarities and differences in the pattern of industrialization in the nineteenth century.
- 491h HONORS SEMINAR (3)  
496a,b,c HONORS TUTORIAL (2-5 ea)

- 497a WORKSHOP IN ECONOMIC EDUCATION (3)  
Prerequisite: teaching experience in the social studies. Extension, 1968.
- 499 SENIOR SEMINAR (3)  
Prerequisites: senior standing and permission of instructor.
- 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.
- 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: Econ 352 or 353 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: Econ 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 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 100 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 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      **OFFICE MACHINES**    (3)  
 Prerequisite: one year high school typewriting or equivalent. Operation of rotary and key-driven calculators, adding machines, transcribing and recording machines, and electric typewriters.
- 242      **SPECIALIZED OFFICE MACHINES**   (3)  
 Prerequisite: Bus Ed 241 or equivalent. Advanced training in the use of calculators, 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**   (1-3)  
 Prerequisites: senior standing and permission of instructor. Individual instruction.
- 471      **CURRENT TRENDS IN THE TEACHING OF TYPEWRITING**   (3)  
 Student motivation, electric typewriting techniques, skillful use of supplementary materials and special 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)  
 Prerequisite: 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 in 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

*Professors:* Hite (Chairman), Bond, Ellis, Higbee, Kuder, McCracken, Riehle, Ross, Skeen, Starbird, R. Thompson, Watrous . *Associate Professors:* Beldin, Billings, Brown, Carroll, Feringer, Ferris, Johnson, Karason, Kelly, Lamb, Lee, Margaritis, McInnes, Nickelson, Nicol, Panches, Savitch, N. Thompson, Van Wingerden *Assistant Professors:* Bieler, Dallas, Jackson, Jones, Kjarsgaard, Mattson, Moon, Mullen, Schwartz . *Lecturers:* Bishop, Keagle, Knowles, Savage, Vander Velde, Waiholua.

The Department of Education offers professional courses for the preparation of teachers and other school personnel and participates in a wide variety of programs leading to the Master of Education degree. Special programs are organized for those interested in early childhood education, the education of the handicapped and mentally retarded, for reading specialists, and for various administrative posts. Programs of study have been designed especially for certification of students who complete an arts and science degree program before initiating professional preparation for teaching.

Undergraduate major and minor concentrations for teachers are offered by the respective academic departments. Refer to specific department sections for details.

The Elementary Teaching Minor is an interdepartmental concentration required for elementary teaching. While the courses are offered in various departments, responsibility for coordination and advisement in the program rests with the Department of Education. Specifications for this minor are listed on page 41.

The Education Department also has administrative responsibility for Library Science. See page 107.

## 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 Practicum

(See Psychology section for courses in Educational Psychology.)

- 131 INTRODUCTION TO EARLY CHILDHOOD EDUCATION (1)  
Review of the field in terms of history, philosophy, and professional opportunities; observation of young children.
- 137 HEAD START TRAINING PROGRAM (8)  
Prerequisite: admission by National Training Office. The preparation of teachers and aides for Head Start projects; credit available for those who qualify.
- 200 SPECIAL PROJECTS IN EDUCATION (3-5)
- 300 SPECIAL PROJECTS IN EDUCATION (3-5)
- 301 AMERICAN EDUCATION AND THE TEACHER (3)  
Prerequisite: sophomore status. The American school system and the role of the teacher; teaching as a profession. This course is prerequisite to all others in the professional sequence.
- 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)  
Prerequisite: 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.
- 373 ELEMENTARY STATISTICAL INFERENCE (3)  
Prerequisite: Math 240 or permission of instructor. Statistical procedures and informed reading for original research. Also offered as Psychology 373.

385 FOUNDATIONS OF READING INSTRUCTION (2)

Prerequisite: Ed 301. Study-reading in content areas; speed reading; basic principles of teaching reading; standardized and informal reading testing.

390 SEPTEMBER PRACTICUM (3)

Prerequisite: permission of department. A 3-week observation and micro-teaching in the public schools; readings, seminars, and tests to enable the student to make a responsible decision about his future in teaching.

397a COMMUNICATION IN THE ELEMENTARY SCHOOL (5)

Interrelated aims, content, methods, and materials of the language arts; speaking, listening, handwriting, creative writing, creative dramatics, spelling, composition, non-verbal communication.

400 SPECIAL PROJECTS IN EDUCATION (2-3)

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. Role of philosophical assumptions and social considerations in developing the aims and objectives of schooling, content of instruction, and the teaching-learning process.

413 HISTORY OF AMERICAN EDUCATION (4)

Prerequisite: Ed 301 or permission of department. 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: Ed 301 or permission of department. Educational systems in the major countries; backgrounds, aims, types, and present functions; comparison with the American system.

416 PERSISTENT PROBLEMS IN EDUCATION (3)

Prerequisite: Ed 301. Such issues as merit pay, federal aid, ability grouping, teachers' organizations, school reorganization, and the place of religious observance in the public schools.

420 INSTRUCTION IN SECONDARY SCHOOLS (2)

Prerequisites: admission to teacher education; Psych 351. Responsibilities of teachers; classroom management; scope and sequences in public school instruction; concurrent enrollment in Psych 352 recommended.

421 INSTRUCTION IN THE ELEMENTARY SCHOOL (5)

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.

424a,b,c,d 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.

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 ADULT EDUCATION: PRINCIPLES AND METHODS (3)

Social, educational, and administrative implications of continuing education.

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. Natural history with emphasis on conservation, biology, ecology, geography, geology, mineralogy, forestry.

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, and readiness for kindergarten and grade one.

- 433      **KINDERGARTEN EDUCATION**   (3)  
 Prerequisites: Ed 431 or teaching experience. Historical background; recent trends; organization of facilities and materials for the kindergarten program; 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.
- 435      **CHILD AND YOUTH  
 STUDY WORKSHOP**   (3)  
 Prerequisite: permission of department. Case record approach to the principles of child and youth study. Summers only.
- 436e,f,g. **HONORS TUTORIAL**   (2-5)
- 437      **HEAD START TEACHER TRAINING**   (8)  
 Prerequisite: admission by National Training Office. Preparation of teachers and aides for Head Start Projects; credit available for those who qualify.
- 441      **ANALYSIS OF TEACHING**   (3)  
 Prerequisites: Ed 301, Psych 351, and permission of instructor. Interaction analysis techniques, and practice in their use; theoretical bases of selected category systems; the use of objective, systematic feedback in development of teaching skills and strategies.
- 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 JUNIOR 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.
- 450      **AUDIOVISUAL COMMUNICATIONS: BASIC**   (3)  
 Prerequisite: Ed 301. The role and application of educational media and technology in the teaching-learning process; laboratory experiences in operation and utilization of basic audiovisual equipment.
- 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.
- 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.
- 463      **WORKSHOP FOR TEACHERS OF INDIAN  
 CHILDREN AND YOUTH**   (3)  
 Historical backgrounds and present status of Pacific Northwest Indians; agencies and their programs; problems encountered by Indian children and youth; educational provisions and opportunities.
- 464e     **THE DISADVANTAGED: PSYCHOLOGICAL  
 IMPLICATIONS**   (3)  
 Prerequisite: teaching experience. Effects of cultural-economic deprivation on the development of personality and intelligence in children and youth.
- 464f     **THE DISADVANTAGED: SOCIOLOGICAL  
 IMPLICATIONS**   (3)  
 Prerequisite: teaching experience. Sociological effects of cultural-economic deprivation on youth and children; methods successful in alleviating economic and cultural deprivation in both rural and urban areas.
- 464g     **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.
- 473      **ADVANCED STATISTICAL INFERENCE**   (3)  
 Prerequisite: Ed 373 or equivalent. Advanced methods for analysis of research data. Also offered as Psych 473.
- 479      **INQUIRY DEVELOPMENT**   (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.
- 480      **CONFERENCE IN READING**   (1-3)  
 Prerequisite: teaching experience. Offered from year to year with varying themes.
- 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 area 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)

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 TEACHING 490-499

#### *Requirement*

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 competence in two fields or at two levels either within the 16 credit requirement or by an additional experience. However, student teaching at two levels within one quarter is not available.

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 teaching experience. Education 494 or 496 may be challenged on the basis of performance in Ed 493 or 495 respectively.

#### *Prerequisites*

Eligibility for supervised teaching courses depends upon satisfaction of the following:

a. Admission to and continued good standing in the professional education program (includes cumulative grade average of 2.2 or better).

b. Satisfactory completion of Ed 385 or 420, Psych 352 and either Psych 352 or 371.

c. Completion of 128 credits.

d. For secondary student teaching, at least 30 credits in the major. A methods course in the major is strongly recommended.

e. For elementary student teaching, Math 251 and three courses from: Social Studies Ed 425, Math 481, Ed 485, a course in science education.

f. A chest X-ray in compliance with state law.

#### *Application*

Students will file a plan for their student teaching in the Office of the Director of Student Teaching at a designated time in 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 well in advance between the College and cooperating school districts. Each student will consult with his departmental advisers in advance of registration for student teaching and will indicate a first and second 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 the preceding spring quarter.

#### *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 seminar.

In the fall quarter only, special sections of Education 491 and 492 are offered commencing with the opening of the public schools in September. These sections are in addition to sections scheduled regularly to correspond with the College calendar.

Students not electing one of these special sections are strongly urged to observe in their home school districts for a few weeks when school opens in the fall. Arrangements should be made through the Office of Student Teaching at the College.

#### *Student Teaching Resident Centers*

Student teaching opportunities are offered in Resident Centers established in Everett, Edmonds, Shoreline, and Seattle. Inasmuch as these opportunities require earlier planning, it is advantageous for a student to indicate Resident Center interest at the time of filing the Declaration of Student Teaching Plan. Students are responsible for their own housing arrangements. If needed, assistance is available from the school districts and/or the College Supervisors.

#### 490 OBSERVATION AND PARTICIPATION (3)

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

- 491 SUPERVISED TEACHING—ELEMENTARY (16)  
Prerequisites: Math 251 and three of the following: Social Studies Ed 425, Math 481, Ed 485, and a course in science education. Supervised teaching experience providing opportunities to develop and demonstrate teaching competence at the primary and/or intermediate level.
- 492 SUPERVISED TEACHING—SECONDARY (16)  
Prerequisite: 30 credits in the major field. Supervised teaching experience providing opportunities to develop and demonstrate teaching competence at the junior high and/or senior high school level.
- 493, 494 SUPERVISED TEACHING—ELEMENTARY (8 ea)  
Prerequisites: Math 251 and three of the following: Social Studies Ed 425, Math 481, Ed 485, and a course in science education; Ed 491 or 493 prerequisite to Ed 494. Supervised teaching experience providing opportunities to develop and demonstrate teaching competence at the primary and/or intermediate level.
- 495, 496 SUPERVISED TEACHING—SECONDARY (8 ea)  
Prerequisite: 30 credits in major field; Ed 492 or 495 prerequisite to 496. Supervised teaching experience providing opportunities to develop and demonstrate teaching competence at the junior high and/or senior high school level.
- 497a PROFESSIONAL RELATIONS IN PUBLIC EDUCATION (3)  
Effective processes for use in the development of staff personnel policies, salary negotiations, instructional conditions, and other related prerequisites. Summer 1968.
- 497v INQUIRY DEVELOPMENT (5)  
Extension 1968; see Ed 479 for description.
- 497w THE TEACHING OF READING IN CONTENT FIELDS (3)  
Extension 1968; see Ed 484 for description.
- 497x ANALYZING CLASSROOM INTERACTION (3)  
Verbal interaction in the teaching process; systems of recording, analyzing, and interpreting classroom verbal behavior; application to learning environment. Extension 1968.
- 497y SUPERVISED PRACTICUM IN TEACHING (3-8)  
Prerequisites: teaching experience and permission of department. Observation of master teaching; supervised teaching of individuals and small groups; seminars; planning and developing individual and/or group projects. Summer 1968.
- 497z EDUCATIONAL DATA PROCESSING (3)  
The utilization of electronic data processing in school management, research, instruction, and testing. Extension 1968.
- 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.
- 499 THE DISADVANTAGED: EDUCATIONAL IMPLICATIONS AND PRACTICUM (5)  
Prerequisite: teaching experience. Formation of plans for work with 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 GRADUATE STUDY (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 EDUCATIONAL SOCIOLOGY (3)  
Prerequisite: Ed 411 or equivalent, and permission of instructor. Major problems in American culture as they relate to education; selected empirical studies and interpretations of social scientists upon which school policies and practices depend.
- 512 SEMINAR IN EDUCATIONAL CONCEPTS AND ISSUES: HISTORICAL-PHILOSOPHICAL (4)  
Prerequisite: 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 EDUCATIONAL CONCEPTS AND ISSUES: PSYCHOLOGICAL-SOCIOLOGICAL (4)  
Prerequisites: Ed 501 and 512. 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.

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)

Prerequisite: 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.

540 PUBLIC SCHOOL ORGANIZATION AND ADMINISTRATION (3)

Practical problems related to administration of school personnel, plant, and program; structure and organization of the school system.

541 SCHOOL LAW AND FEDERAL PROGRAMS (3)

Prerequisite: Ed 540. Legal principles underlying statutes and court decisions related to the schools; legal aspects of federal programs and their administration in the schools.

542 READING IN SCHOOL ADMINISTRATION (2-5)

Prerequisite: permission of instructor. Supervised study on one or more selected topics.

543 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.

544 COMPUTER TECHNOLOGY AND EDUCATION (4)

Prerequisite: Ed 540 and permission of instructor. Utilization of electronic data processing in school management, local school district research, and computer assisted instruction.

545 PUBLIC SCHOOL FINANCE (3)

Prerequisite: Ed 540. Problems involved in school finance, including budgetary procedures.

546 PUBLIC SCHOOL BUILDINGS AND FACILITIES (3)

Prerequisite: Ed 540. Planning school building programs through analysis of population trends in the community; relationship of school plant to the educational program; problems in utilization of school facilities.

547 SEMINAR IN SCHOOL ADMINISTRATION (2)

Current and emergent educational problems.

548 FIELD EXPERIENCE IN ADMINISTRATION FOR THE PRINCIPAL (1-5)

Prerequisite: permission of department. For applicants for the principals' credential who have been admitted to candidacy for the master's degree. See *Graduate Bulletin* for details.

549 SEMINAR IN SCHOOL PERSONNEL ADMINISTRATION (3)

Prerequisite: Ed 540. Professional relationships among certified employees and other school personnel; development and implementation of policies. Summer only.

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.

- 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.

- 594e,f,g 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.  
e. Standard diagnostic tests in reading; supervised practice in their use.  
f. Individual case study; diagnosis of reading problems.  
g. 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.
- 648 FIELD EXPERIENCE IN ADMINISTRATION FOR THE PRINCIPAL (3)  
For principal's credential candidates who have completed the master's degree.

## ENGLISH

*Professors:* Brown, Cederstrom, Clapp, Hicks, McDonnel (Chairman), O'Brien, Peters . *Associate Professors:* Bowman, Garber, Huff, Larsen, Lawyer, Lee, Lewis, Miller, Muldrow, Odom, Ryan, Thompson . *Assistant Professors:* Cary, Hunt, Inniss, Johnson, Keep, Symes . *Instructors:* Barton, Carlton, Donker, Farley, Hars, Haynes, LaBelle, Merritt, Standley, Williams . *Lecturer:* Skinner.

### TEACHER EDUCATION

*Major* Elementary 45 credits

- English 261, 262, 263, 343, 380, 390
- Two courses from the English 321-326 series
- Two courses from English 331, 332, 333
- English 495 and Library 305 unless taken as part of the Elementary Teaching Minor
- Electives under departmental advisement

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*Major* Secondary 45 credits

- English 261, 262, 263, 343, 488
- Three courses from the English 321-326 series
- Two courses 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.

*Minor* 24-25 credits

#### A. Linguistics Emphasis

- Linguistics 200, 303
- English 391, 404a, 404b, 490, 491, 496 (Ling 301 or 302 recommended for Fifth Year.)

### B. *Rhetoric*

- Linguistics 200
- English 302, 391, 404a, 404b, 496
- Six credits in electives under advisement

### C. *Creative Writing*

- English 303a, 303b, 403a or 403b, 488
- Four credits under advisement in an area other than English
- Eight to eleven credits under departmental advisement in upper division electives.

### D. *Journalism*

(See Interdepartmental Programs, page 154.)

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

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

### *Teaching Competence*

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

### *Extended Minor* 36 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, 404b, 496
- One course from the English 321-326 series
- Two courses from the English 331-333 series
- Library Science 307

## ARTS AND SCIENCES

### *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

- Two courses from English 331, 332, 333
- English 349 or 359
- Electives under departmental advisement, including at least one 400 level course.
- Supporting courses: 24 credits or the equivalent in one foreign language.

### *Minor* 25 credits

#### A. *English*

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

#### B. *Linguistics*

- Linguistics 200, 201, 301, 302, 303
- English 391, 490, 491

#### C. *Rhetorical Emphasis*

- Linguistics 200
- English 302, 404a, 404b
- 12 credits in electives under advisement

#### D. *Creative Writing*

- English 303a, 303b, 403 or 404, 488
- Four credits under advisement in an area other than English
- Eleven credits in upper division electives under departmental advisement

#### E. *Journalism*

(See Interdepartmental Programs, page 154.)

## 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 degrees, see *Graduate Bulletin*.

## COURSES IN ENGLISH

101 LANGUAGE AND EXPOSITION (3)  
Study of language and the principles of exposition; emphasis on organization and interpretation; study of rhetorical contexts.

131, 132, 133 MASTERPIECES OF WORLD LITERATURE WITH COMPOSITION (3 ea)  
Papers based on readings from classical, medieval, Renaissance, neoclassical, romantic, and modern literature.

201 LITERATURE AND EXPOSITION (3)  
Prerequisite: Eng 101 or equivalent. Elective course in composition based on imaginative literature.

202 LITERATURE AND EXPOSITION (3)  
Prerequisite: Eng 101 or equivalent. Elective course in composition based on literature of the natural and social sciences.

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.

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 General Education 121, 122, 123.

302 ADVANCED EXPOSITION (3)  
Prerequisite: permission of instructor. Opportunity for writing on a mature level for publication.

303 CREATIVE WRITING (3)  
303a Fiction 303b Poetry  
Prerequisite: permission of instructor. Opportunity for disciplined expression in poetry and/or fiction.

*For all subsequent courses, English 261, 262, 263 are prerequisite for all majors and minors. Transfers are expected to complete needed courses in this series in their first two quarters in residence. For non-majors and non-minors, English 263 is prerequisite to subsequent courses. For all 400 level literature courses, the prerequisite is 15 credits in literature, or permission of instructor.*

321-326 ENGLISH LITERATURE (4 ea)  
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)  
Historical, critical study of major American writers.  
331 Poe through Whitman  
332 Twain through Dreiser  
333 Frost through Faulkner

341 CHAUCER (3)  
Chaucer's language and poetry, with emphasis upon *The Canterbury Tales*.

343 SHAKESPEARE (5)  
Survey of principal plays. Also offered as Speech 320.

349 MAJOR ENGLISH WRITERS (3 ea)  
Different writers of eminence will be treated from year to year in this series.

359 MAJOR AMERICAN WRITERS (3 ea)  
Different writers of eminence will be treated from year to year in this series.

380 WORLD LITERATURE FOR THE ELEMENTARY TEACHER (3)  
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.

390 THE STRUCTURE OF AMERICAN ENGLISH (3)  
The nature of language, backgrounds of American grammar and usage, review of traditional grammar and introduction to the "new" grammars.

391 LINGUISTICS AND DESCRIPTIONS OF THE ENGLISH LANGUAGE (4)  
Prerequisite: Linguistics 200 or permission of instructor. Traditional, structural and transformational English grammars.

399a,b,c HONORS TUTORIAL (2.5 ea)  
403 SENIOR WRITING WORKSHOP (1.5)  
403a Creative Writing—Fiction  
403b Creative Writing—Poetry  
Prerequisite: English 302 or 303 or permission of instructor. Individual projects in various types of writing.

404a INTRODUCTION TO RHETORIC (3)  
Rationale of informative and persuasive writing; classical and modern treatments of invention, arrangement, prose style.

- 404b RHETORICAL ANALYSIS (3)  
Analysis of semantics, style, and tone; emphasis on expository writing.
- 440 PERIOD STUDIES (2-5)  
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.
- 460 STUDIES IN FORM AND TEMPER (2-5)  
Prerequisite: acceptance for the departmental honors program, or permission of instructor. Different literary types and genres will be treated from year to year in this series.
- 461, 462, 463 DEVELOPMENT OF ENGLISH DRAMA (3 ea)  
461 Medieval and Elizabethan—Jacobean  
462 Restoration and Eighteenth Century  
463 Late 19th and Early 20th Centuries  
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)  
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: English 326 and 333 or permission of instructor. Selected representative English and American poets of stature.
- 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)  
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)  
English and American novels since World War II.
- 480 INTRODUCTION TO ORIENTAL LITERATURE (5)  
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.
- 481 THE BIBLE AS LITERATURE (3)  
Cultural backgrounds of the Old and New Testaments, together with a literary analysis of selected passages.
- 483 SOCIAL CHANGE AND THE MORAL ORDER IN RECENT LITERATURE (4)  
Also offered as Philosophy 483 and Sociology 483.
- 487 HISTORY OF LITERARY CRITICISM (5)  
The theory of literature; analysis of critical principles and problems from ancient to modern times.
- 488 MODERN LITERARY CRITICISM (3)  
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 STRUCTURAL AND TRANSFORMATIONAL GRAMMARS (3)
- 491 HISTORY OF THE ENGLISH LANGUAGE (3)  
The historical development of the English language: phonology, morphology, syntax, semantics.
- 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.
- 497c SURVEY OF CURRENT LINGUISTIC THOUGHT (3)  
Analysis of content and procedures in the teaching of English with emphasis on application of recent findings of linguistic science pertaining to the nature of language; the source of "correctness" in usage, dialects, and meaning; evolution of English and the grammars of English. Extension, 1968.
- 497d CURRENT ATTITUDES TOWARD ENGLISH USAGE (3)  
The "abstract rule" view as contrasted to the "social group usage" view; facts related to the latter; the structural approach to English grammar. Extension, 1968.
- 498 WORKSHOP IN THE TEACHING OF ENGLISH (5)
- 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.

- 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.
- 503 WRITING SEMINAR: POETRY (3)  
Prerequisite: Eng 302 or 303 or equivalent.
- 504 WRITING SEMINAR: FICTION (3)  
Prerequisite: Eng 302 or 303 or equivalent.
- 520 SEMINAR IN ANGLO-SAXON LITERATURE (3-5)  
Prerequisite: English 591a or equivalent.
- 521 SEMINAR IN MEDIEVAL LITERATURE (3-5)  
Prerequisite: English 321 or 341 or equivalent.
- 522 SEMINAR IN SIXTEENTH-SEVENTEENTH CENTURY LITERATURE (3-5)  
Prerequisite: English 322 or 343 or equivalent.
- 527 SEMINAR IN EIGHTEENTH CENTURY LITERATURE (3-5)  
Prerequisite: English 323 or equivalent.
- 524 SEMINAR IN ROMANTIC LITERATURE (3-5)  
Prerequisite: English 324 or equivalent.
- 525 SEMINAR IN VICTORIAN LITERATURE (3-5)  
Prerequisite: English 325 or equivalent.
- 526 SEMINAR IN CONTEMPORARY LITERATURE (3-5)  
Prerequisite: English 326 or 333 or equivalent.
- 531 SEMINAR IN AMERICAN LITERATURE: BEGINNINGS TO 1860 (3-5)
- 532 SEMINAR IN AMERICAN LITERATURE: 1860-PRESENT (3-5)  
Prerequisite: English 332 or equivalent.
- 541 SEMINAR IN CHAUCER (3-5)  
Prerequisite: English 321 or 341 or equivalent.
- 543 SEMINAR IN SHAKESPEARE (3-5)  
Prerequisite: English 343 or equivalent.
- 545 SEMINAR IN MILTON (3-5)  
Prerequisite: English 322 or 343 or equivalent.
- 560 SEMINAR IN LITERARY FORM (3-5)
- 587 SEMINAR IN LITERARY CRITICISM (3-5)
- 589 DIRECTED INDIVIDUAL STUDY (1-3)  
Research on a topic not included in formal courses. This course may be taken only once.
- 590 LINGUISTICS (3-5)  
Prerequisite: English 490 or equivalent.
- 591 HISTORICAL LINGUISTICS (3-5)  
591a Old English 591b Middle English  
Prerequisite: English 491 or equivalent.
- 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*.)

## FOREIGN LANGUAGES

*Associate Professors:* Baird, Bouniol, Faber, King, Robinson (Chairman), Young . *Assistant Professors:* Adam, Barragan, Brockhaus, Dordevic, Goldsmith, Hernandez, Milicic, Moerschner, Shiebert . *Instructor:* Hies . *Lecturers:* Elmendorf, Melbin, Van Voorst Vader.

Students majoring in one foreign language may elect a minor in a second language. At least nine credits in any concentration must be taken in residence.

## TEACHER EDUCATION

*Major* Elementary 45 credits

(Offered in French, German, Russian or Spanish.)

- Courses required in the language selected: 201, 202, 203, 310, 311, 410, 411
- French 204 for French majors



- German 331 or 332 for German majors
- Foreign Language Education 432
- Foreign Language Linguistics 370
- Electives under departmental advisement

#### *Major—Latin* Secondary

- 45 credits selected under advisement

#### *Major—A Modern Language* Secondary

45 credits in courses numbered 201 and above in one language (French, German, Russian or Spanish.)

- Courses numbered 201, 202, 203 in the language selected.
- Three courses from 310, 311, 410, 411
- Three courses from 301, 302, 303, 304, 305, 306, 340, 341, 342, 343
- One course from 401, 402, 403, 450
- Foreign Language Education 432
- Foreign Language Linguistics 370
- Course 290 for German, Russian, Spanish majors.
- German 331 or 332 for German majors
- Electives under departmental advisement to include at least one 400 level course

#### *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—Linguistics*

- Linguistics 200, 201, 301, 302, 303
- 6 credits selected under departmental advisement in a foreign language.

## ARTS AND SCIENCES

### *Major—Greek or Latin*

- 45 credits in courses selected under advisement.

### *Major—A Modern Foreign Language*

45 credits in courses 201 and above in French, German, Russian, or Spanish, plus supporting courses.

- Course 290 in the selected language (except French)
- Three courses from 310, 311, 410, 411
- Three courses from 301, 302, 303, 304, 305, 306, 340, 341, 342, 343
- Two courses from 401, 402, 403, 450
- 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 six credits in courses numbered 290 and above.

### *Minor—Greek or Latin*

- 12 credits beyond the first year in Latin or Greek.

### *Minor—Linguistics*

- Linguistics 200, 201, 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.

## 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

#### 370 INTRODUCTION TO APPLIED LINGUISTICS FOR FOREIGN LANGUAGE MAJORS (3)

Prerequisite: 25 credits or 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.

### FRENCH

#### 101, 102, 103 FIRST YEAR FRENCH (5 ea)

Each course prerequisite to the next. Fundamentals of the French language; pronunciation, grammar, aural comprehension, reading, and speaking.

#### 110 FIRST YEAR FRENCH (3)

Prerequisite: permission of the department. An accelerated course to prepare students to enter French 103; not open to beginners.

#### 197 FRENCH FOR A READING KNOWLEDGE (3)

For students needing a reading knowledge of the language; not applicable to a major or minor.

#### 201, 202, 203 SECOND YEAR FRENCH (5 ea)

Prerequisite: French 103 or two years of high school French or equivalent. Continuation of fundamentals, reading, aural comprehension and speaking.

#### 210 PHONETICS (2)

Prerequisite: French 201. Phonetic transcription and intensive oral practice.

#### 237 CONVERSATION (2)

Prerequisite: French 103 or equivalent. Offered as a part of the Study Aboard Program.

#### 301 SURVEY OF FRENCH LITERATURE AND CIVILIZATION (5)

Prerequisite: French 203. From the beginnings through the pre-Classical period.

#### 302 SURVEY OF FRENCH LITERATURE AND CIVILIZATION (5)

From the Classical through the pre-Romantic periods.

#### 303 SURVEY OF FRENCH LITERATURE AND CIVILIZATION (5)

From the Romantic period to the present.

#### 310, 311 THIRD YEAR COMPOSITION AND CONVERSATION (3 ea)

Prerequisite: French 203 or equivalent; French 310 prerequisite to 311. Written and oral composition and vocabulary building, *explication de texte*.

#### 337 CONVERSATION (4)

Prerequisite: French 202 or equivalent. Offered as a part of the Study Abroad program.

#### 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 DEVELOPMENT OF THE FRENCH NOVEL (3)

Prerequisite: 9 credits in upper division French. Theory of novel and its development.

#### 402 DEVELOPMENT OF FRENCH DRAMA (3)

Prerequisite: 9 credits in upper division French. Theory of drama and its development.

#### 403 DEVELOPMENT OF FRENCH POETRY (3)

Prerequisite: 9 credits in upper division French. Theory of poetry and its development.

#### 410, 411 ADVANCED COMPOSITION AND GRAMMAR (3 ea)

Prerequisites: French 311 or permission of instructor; French 410 prerequisite to 411. Written and oral composition and vocabulary building.

#### 437 CONVERSATION (4)

Prerequisite: 9 credits of upper division French. Offered as a part of the Study Aboard Program.

#### 450 SEMINAR IN FRENCH LITERATURE (3)

Prerequisites: 9 credits in upper division French and permission of department. Major authors and movements. Since topics vary, the course may be repeated.

#### 496a,b,c HONORS TUTORIAL (2-5 ea)

### GERMAN

#### 101, 102, 103 FIRST YEAR GERMAN (5 ea)

Each course prerequisite to the next. Fundamentals of the language; pronunciation, grammar, aural comprehension, reading and speaking.

110 FIRST YEAR GERMAN (3)

Prerequisite: permission of department. An accelerated course to prepare students to enter German 103; not open to beginners.

201, 202 SECOND YEAR GERMAN (5 ea)

Prerequisite: German 103 or two years high school German or equivalent. Review of the fundamentals, reading, aural comprehension, and speaking.

203 SECOND YEAR GERMAN (3)

Prerequisite: German 202. Review of the fundamentals, reading, aural comprehension and speaking.

290 INTRODUCTION TO GERMAN LITERATURE (3)

Prerequisite: 9 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 AND CONVERSATION (3 ea)

Prerequisite: German 203 or the equivalent; German 310 prerequisite to 311. Written and oral composition 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: 9 credits of second year German or equivalent. Significant elements of German civilization presented through German texts.

332 GERMAN CIVILIZATION TODAY (3)

Prerequisite: 9 credits of second year German or equivalent. Significant elements of German civilization.

341 THE GERMAN DRAMA (3)

Prerequisite: German 290 or permission of instructor. Interpretation, discussion of selected readings.

342 GERMAN POETRY (3)

Prerequisite: German 290 or permission of instructor. Interpretation and discussion of selected readings.

343 THE GERMAN NOVELLE OF THE NINETEENTH CENTURY (3)

Prerequisite: German 290 or permission of instructor. Interpretation and discussion of selected readings.

344 THE GERMAN NOVELLE OF THE TWENTIETH CENTURY (3)

German 290 or permission of instructor. 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)

## GREEK

101, 102, 103 FIRST YEAR 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.

201, 202, 203 SECOND YEAR GREEK (3 ea)

Prerequisite: Greek 103 or equivalent. 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 state production.

303 GREEK HISTORIANS (3)

Prerequisite: Greek 203 or equivalent. Selections from Herodotus and Thucydides; development of historical writing in Greece.

310 GREEK COMPOSITION (3)

Prerequisite: Greek 203 or equivalent. Systematic grammar review with exercises in continuous prose composition based on various prose writers.

350 GREEK MYTHOLOGY (3)

The nature of mythical thought, its development among the Greeks, and its influence on Western literature; selected readings in English; not applicable to a Greek major or minor.

367 GREEK LITERATURE IN TRANSLATION (3)

Epic, lyric, drama, history, oratory, and their influence on Western literature; not applicable to a Greek major or minor.

## LATIN

101, 102, 103 FIRST YEAR LATIN (5 ea)

Each course prerequisite to the next. Fundamentals of grammar to provide a reading knowledge; selected readings from various Roman writers.

110 FIRST YEAR LATIN (5)

Prerequisite: permission of department. An accelerated course to prepare students to enter Latin 103; not open to beginners.

201, 202, 203 SECOND YEAR 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.

304 POST-CLASSICAL LATIN (3)

Prerequisite: Latin 203 or equivalent. Selected prose and poetry from the post-classical period.

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.

310 LATIN COMPOSITION (3)

Systematic review of grammar; introduction to continuous prose composition with exercises based on various prose authors.

350 LATIN AND GREEK IN CURRENT USE (2)

(No knowledge of these languages is required.) Principles governing the formation of English words derived from Latin and Greek; not applicable to a major or minor.

396a,b,c HONORS TUTORIAL (2-5)

## RUSSIAN

101, 102, 103 FIRST YEAR RUSSIAN (5 ea)

Each course prerequisite to the next. Fundamentals of the language; pronunciation, grammar, aural comprehension, reading, and speaking.

110 FIRST YEAR RUSSIAN (3)

Prerequisite: permission of department. An accelerated course to prepare students to enter Russian 103; not open to beginners.

201, 202 SECOND YEAR RUSSIAN (5 ea)

Prerequisite: Russian 103 or two years high school Russian or equivalent. Review of the fundamentals, reading, aural comprehension, and speaking.

203 SECOND YEAR RUSSIAN (3)

Prerequisite: Russian 202. Review of the fundamentals, reading, aural comprehension, and speaking.

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 Turgenyev.

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  
AND CONVERSATION (3 ea)  
Prerequisite: Russian 203 or equivalent; Russian 310  
prerequisite to 311. Written and oral composition and vocabu-  
lary 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 RUSSIAN LITERATURE IN TRANSLATION (3)  
Selections from eminent Russian authors read and  
discussed in English; not applicable to a major or minor in  
Russian. When topics vary, the course may be repeated.

396a,b,c, HONORS TUTORIAL (2-5)

410 STRUCTURE OF RUSSIAN I (3)  
Prerequisite: three years of college Russian or permis-  
sion 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.

496a,b,c HONORS TUTORIAL (2-5 ea)

## SPANISH

101, 102, 103 FIRST YEAR SPANISH (5 ea)  
Each course prerequisite to the next. Fundamentals of  
the language, pronunciation, grammar, aural comprehension,  
reading and speaking.

110 FIRST YEAR SPANISH (3)  
Prerequisite: permission of department. An accel-  
erated course to prepare students to enter Spanish 103; not open  
to beginners.

201, 202 SECOND YEAR SPANISH (5 ea)  
Prerequisite: Spanish 103 or two years high school  
Spanish or equivalent. Review of the fundamentals, reading,  
aural comprehension, and speaking.

203 SECOND YEAR SPANISH (3)  
Prerequisite: Spanish 202. Review of the fundamen-  
tals, reading, aural comprehension, and speaking.

290 INTRODUCTION TO PROBLEMS OF  
HISPANIC LITERATURE (3)  
Prerequisite: 10 credits in second year Spanish or  
equivalent. Selected works of major Spanish authors with  
emphasis on reading improvement and methods of textual  
interpretation.

301 SPANISH LITERATURE AND CIVILIZATION:  
BEGINNINGS TO 1538 (5)  
Prerequisite: Spanish 290 or permission of depart-  
ment. Literary development from El Cid to La Celestina; special  
study of major works.

302 SPANISH LITERATURE AND CIVILIZATION:  
SIGLO DE ORO (5)  
Prerequisite: Spanish 290 or permission of depart-  
ment. Literary development in various genres during the Golden  
Age; special study of major works and writers.

303 SPANISH LITERATURE AND CIVILIZATION:  
MODERN PERIOD (5)  
Prerequisite: Spanish 290 or permission of depart-  
ment. Literary development in various genres from end of  
Golden Age to present; special study of major works.

304 SPANISH-AMERICAN LITERATURE AND  
CIVILIZATION: BEGINNINGS TO 1800 (5)  
Prerequisite: Spanish 290 or permission of depart-  
ment. Development from Quechua writings to the 19th century.

305 SPANISH-AMERICAN LITERATURE AND  
CIVILIZATION: NINETEENTH CENTURY (5)  
Prerequisite: Spanish 290 or permission of depart-  
ment. Ligardi to present developments.

306 MODERN SPANISH-AMERICAN  
LITERATURE AND CIVILIZATION (5)  
Prerequisite: Spanish 290 or permission of depart-  
ment. Prose and poetry of 20th century writers comprising the  
school of modernism.

310, 311 THIRD YEAR CONVERSATION  
AND COMPOSITION (3 ea)  
Prerequisite: Spanish 203 or the equivalent; Spanish  
310 prerequisite to 311. Written and oral composition and  
vocabulary building.

340 READINGS IN CONTEMPORARY  
SPANISH DRAMA (3)  
Prerequisite: Spanish 203 or equivalent. Interpretation  
and discussion of selected readings.

341 THE CONTEMPORARY SPANISH NOVEL (3)  
Prerequisite: Spanish 203 or equivalent. Interpretation  
and discussion of selected readings.

342 SPANISH POETRY (3)

Prerequisite: Spanish 203 or equivalent. Interpretations and discussion of selected readings.

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 Spanish. Masterpieces of the Middle Ages.

402 SPANISH LITERATURE OF THE GOLDEN AGE (3)

Prerequisite: 9 credits in upper division Spanish. Outstanding authors of Spain's classical period.

403 MODERN SPANISH LITERATURE (3)

Prerequisite: 9 credits in upper division Spanish. Selections reflecting development of recent literature.

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.

## GEOGRAPHY

*Professors:* Critchfield (Chairman), Monahan . *Associate Professors:* Mookherjee, Raney . *Assistant Professors:* Scott, Teshera . *Lecturers:* Jansen, Tweedie

### TEACHER EDUCATION

*Major* Elementary 45 credits

- Geography 201, 203, 251, 401, 421, 460
- Five credits from Geography 311, 313, 314, 315, 316, 318, 319, 320, 415
- One course from Geography 331, 351, 353, 423, 424, 453
- One course from Geography 207, 341, 422, 430, 435, 440, 470, 480, 481
- Electives
- All selections are to be made under departmental advisement.

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*Major* Secondary 45 credits

- Geography 201, 203, 207, 251, 460
  - Five credits from Geography 311, 313, 314, 315, 316, 318, 319, 320, 401, 415
  - One course from Geography 331, 423, 424, 431
  - One course from Geography 341, 407, 408, 421, 422, 430, 435, 440, 470
  - One course from Geography 351, 353, 453, 454, 480, 481, 490
  - Electives
- All selections are to be made under departmental advisement.

*Minor* 20 credits

- Geography 201
- Geography 207 or 100
- Electives under advisement

### Teaching Competence

Recommendation for teaching competence normally requires completion of the major.

## ARTS AND SCIENCES

The program of the undergraduate major or minor in geography should include fundamental courses in both the natural sciences and the social studies. The department will recommend supporting courses related to the student's career objectives. The student contemplating graduate work toward the Ph.D. 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

- Geography 201, 203, 207, 351, 481
- Two courses from Geog 311, 313, 314, 315, 316, 318, 319, 320, 401, 405
- One course from Geography 331, 423, 424, 431
- One course from Geography 341, 407, 408, 421, 422, 430, 435, 440, 470
- Two courses from Geography 353, 453, 454, 480, 490
- Electives under departmental advisement

### Minor—Geography 25 credits

- Geography 201
- Electives under departmental advisement

### Major—Urban and Regional Planning

(See Interdepartmental Programs, page 157.)

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors students, a geography major who wishes to graduate "with honors" must complete five credits from Geog 480, 481, 490; 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

- 100 WORLD REGIONAL GEOGRAPHY (5)  
Population, resources, and economic development of the major world regions.
- 101 THE NATURAL ENVIRONMENT (4)  
Prerequisite: In the revised General Education program beginning fall 1968, Physics 101 and Chem 101 or equivalents must precede this course. Elements, processes, and unifying concepts in the natural environment of man. Geography majors should take 203.
- 201 HUMAN GEOGRAPHY (5)  
Interrelations of man and his natural environment, emphasizing cultural influences on world geographic patterns.
- 203 PHYSICAL GEOGRAPHY (5)  
Principles and techniques in analysis of areal distributions in the natural environment; landforms, water, climate, soils, vegetation. Not open to students who have taken Geog 101; those with credit in Geog 101 take Geog 331, 422, 423, or 424 in place of Geog 203 in the major.
- 207 ECONOMIC GEOGRAPHY (5)  
World resources, industries, commodities, and commerce.
- 251 MAP READING AND ANALYSIS (2)  
Interpretation of map symbols and content at different scales; analysis of different types of maps and charts.
- 311 THE UNITED STATES AND CANADA (5)  
Prerequisite: Geog 100 or 201 or permission. Physical environments, resources, settlement and economies of Canada and the United States.
- 313 CARIBBEAN AMERICA (3)  
Prerequisite: Geog 100 or 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.
- 314 SOUTH AMERICA (5)  
Prerequisite: Geog 100 or 201 or permission. South American nations, emphasizing culture, natural environment, economic activities, and regional differences.
- 315 ASIA (5)  
Prerequisite: Geog 100 or 201 or permission. Asia's settlement, population, economic resources and activities, and associated problems.

- 316 EUROPE (5)  
Prerequisite: Geog 100 or 201 or permission. Economic, political, and cultural problems of Europe.
- 318 THE PACIFIC (3)  
Prerequisite: Geog 100 or 201 or permission. Physical environment, resources, and settlement of the Pacific Islands, Australia, and New Zealand.
- 319 AFRICA (5)  
Prerequisite: Geog 100 or 201 or permission. Resources, peoples, regions, and economic development of Africa.
- 320 THE U.S.S.R. (3)  
Prerequisite: Geog 100 or 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.
- 396a,b,c HONORS TUTORIAL (2-5 ea)
- 400 SPECIAL PROBLEMS IN GEOGRAPHY (2-5)  
Individual projects under supervision.
- 401 THE PACIFIC NORTHWEST (3)  
Prerequisite: Geog 100 or 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.
- 415 INDIA AND PAKISTAN (3)  
Prerequisite: Geog 100 or 201 or permission. Natural and cultural regions of India and Pakistan; their resources, population, and economic activities.
- 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.
- 424 BIOGEOGRAPHY (3)  
Prerequisite: Geog 101 or 203 or permission. Origin, distribution, and adaptation of plant and animal association; 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 occupance and the reconstruction of past geographies of the United States and Canada.
- 440 GEOGRAPHY OF POPULATION (3)  
Prerequisite: Geog 201 or Sociology 311 or permission. Distribution of population density and composition; patterns of migration and settlement in selected world areas.
- 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 100 or 201 or permission. Geographical basis of contemporary world problems and international relations; military strategy, tension zones, natural resources, boundaries; the current problem areas.
- 480 THEORETICAL AND APPLIED GEOGRAPHY (4)  
Prerequisite: 20 credits in geography. Seminars in topics such as location theory, land use planning, population, regional analysis.
- 481 READINGS IN THE HISTORY AND THEORY OF GEOGRAPHY (3)  
Prerequisite: 20 credits in geography. Directed readings from the works of leading geographers of the past and present on the nature and development of geography.
- 490 SEMINAR IN GEOGRAPHIC RESEARCH AND WRITING (3)  
Prerequisite: 20 credits in geography. Source materials and techniques of geographic research; selected topics investigated in detail as a basis for written papers.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 497a GEOGRAPHY OF SOUTH ASIA (3)  
Man-environment system and the contemporary cultural geography of South Asia. Summer 1968.
- 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 biogeography, climatology, landforms, or soil geography.
- 522 SEMINAR IN CULTURAL GEOGRAPHY (5)  
Advanced topics in social, economic, historical or political geography.
- 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 concurrent. 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: admission to candidacy for the master's degree and appointment of thesis adviser.

## GEOLOGY

*Professors:* Easterbrook (Chairman), Ross . *Associate Professors:* Christman, Ellis, Rahm, Swineford . *Assistant Professors:* Brown, Pevear, Schwartz . *Lecturer:* Babcock  
The student interested in a geology or earth science

major should consult early in his college career with departmental advisers in order to plan the proper sequence of courses. The following courses should be taken in satisfying general education science requirements: Geol 211, Physics 131, Chem 121, Math 121.

## TEACHER EDUCATION

### *Major—Earth Science* Elementary 45 credits

- Geology 211, 212, 310, 311 or 306 and 407
- Geography 203, 331, Physics 105, 131
- Electives under departmental advisement from Geology 316, 317, 340, 390, 399, 400, 407, 410, 412, 413, 414, 430, 440; Geography 353, 421 or 422, 423; Physics 205, 321; Biology 406.

### *Major—Earth Science* Secondary 45 credits

- Geology 211, 212, 306, 310, 390, 407
- Geography 331, Physics 105, 131
- Electives from Geology 316, 317, 319, 340, 399, 400, 410, 412, 413, 414, 418, 420, 426, 430, 440, 460; Geography 353, 421 or 422, 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

## ARTS AND SCIENCES

### *Major Concentration*

60 credits plus Supporting Courses

(A pre-graduate geology program which satisfies both a major and a minor)

- Geology 211, 212, 306, 307, 310, 316, 317, 407, 410, 418, 420
- 12 credits under advisement from Geology 300, 319, 340, 370, 399, 400, 413, 414, 416, 423, 424, 425, 426, 430, 436, 440, 444, 446, 460
- Supporting courses: Chem 121, 122, 123, 127, 128, Physics 231, 232, 233 (or 131, 132, 133), Math 122, 222; choice of (a) Chem 233, 461, (b) two courses from Physics 341, 371, 381, or (c) two courses from Biol 240, 301, Botany 252, 352, Zool 261, 262

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Students preparing for graduate work are advised to complete one year of a foreign language.

### *Major* 50 credits plus Supporting Courses

(An accompanying minor in one of the sciences or in mathematics is recommended.)

- Geology 211, 212, 306, 307, 310, 316, 317, 407, 418, 420
- 7 credits under advisement from Geology 300, 319, 340, 370, 399, 400, 410, 412, 413, 414, 416, 423, 424, 425, 426, 430, 436, 440, 444, 446, 460
- Supporting courses: Chem 121, 122, Physics 131 or 231; Math 121; 20 additional credits under advisement in physics, biology, chemistry, or mathematics.

### *Minor* 25 credits

- Geology 211, 212
- Electives under departmental advisement

### *Major—Geophysics*

(See Interdepartmental Offerings.)

## 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: In the revised General Education program beginning fall 1968, Physics 101 and Chem 101 or equivalents must precede this course. 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 the 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.
- 300 SPECIAL PROJECTS IN GEOLOGY (2-5)  
Prerequisites: 10 credits in geology and permission of department. Special projects under supervision.
- 306 MINERALOGY (5)  
Prerequisites: Geol 211 and Chem 121. Identification of common rock-forming and other common minerals with special reference to their geologic occurrence.
- 307 CRYSTALLOGRAPHY AND CRYSTAL CHEMISTRY (4)  
Prerequisite: Geol 306. Crystal structure and chemical principles fundamental to the study of 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)  
Prerequisites: Geol 101 or 211, and high school or college chemistry. More detailed work with rocks and minerals than is afforded in Geology 101 or 211; the origin, occurrence, and identification of minerals and rocks.
- 316 PRINCIPLES OF PALEONTOLOGY (5)  
Prerequisite: 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.
- 370 STATISTICAL METHODS IN GEOLOGY (3)  
Prerequisite: Math 240, 270 and 15 credits in geology. Acquisition, processing, and analysis of geologic data. Sampling techniques, computer programs, and statistical analysis.
- 384 EARTH SCIENCE FOR THE ELEMENTARY SCHOOL (3)  
Prerequisite: Geol 101. Concepts, experiences, and materials from the earth sciences adaptable to the elementary school.
- 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 GEOLOGY (1)  
Prerequisite: permission of department. Geological reports, papers, and discussion.
- 400 SPECIAL PROJECTS IN GEOLOGY (2-5)  
Prerequisite: permission of department. Special projects under supervision.
- 407 PETROLOGY (3)  
Prerequisite: Geol 306 or 311. Origin, occurrence, and classification of igneous, sedimentary, and metamorphic rocks, and hand specimen identification.
- 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)  
Prerequisite: Geol 311 or 306 or permission of department. The significant geologic features of Washington State; field studies.
- 416 STRATIGRAPHY (5)  
Prerequisite: Geol 316. Analysis of physical and biological characteristics of stratified rock sequence; principles of correlation, determination of geologic age and facies relationships.

- 418 OPTICAL MINERALOGY (5)  
Prerequisite: Geol 307. Optical phenomena as related to mineralogy and identification of minerals from optical properties with the use of the polarizing microscope.
- 420 PETROGRAPHY (2)  
Prerequisite: Geol 418 and concurrent enrollment in Geol 407. Microscopic and hand specimen identification and interpretation of igneous, sedimentary, and metamorphic rocks.
- 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, 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 (3)  
Prerequisite: Geol 310. Processes and phenomena of modern and ancient glaciers; effects of Pleistocene glaciations.
- 444 X-RAY DIFFRACTION (2)  
Prerequisite: Geol 307, Chem 122, 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 (4)  
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 THEORETICAL STRUCTURAL GEOLOGY (3)  
Prerequisite: Geology 452. Internal structure of the earth as deduced by geophysical studies.
- 460 GEOCHEMISTRY (3)  
Prerequisite: Math 122 or 220, Chem 122, Geol 307. 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.
- 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. Independent or class study of recent advances in physical geology.
- 512 ADVANCED STUDIES IN HISTORICAL GEOLOGY (3)  
Prerequisite: Geol 316 or permission. Independent or class study of recent advances in historical geology.
- 513 GEOCHEMISTRY OF SOLIDS (3)  
Prerequisite: Geol 307. 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.
- 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.
- 570 THESIS (3-12)  
Independent research.

# HISTORY

*Professors:* Boylan, Bultmann (Chairman), Murray, Radke . *Associate Professors:* Hiller, McAfee, Roe, Schuler, Thomas . *Assistant Professors:* DeLorme, Hitchman, Horn, Jackson, Roley . *Instructors:* Bullock, Christensen, Davis . *Lecturer:* Knibbs

## TEACHER EDUCATION

*Major* All Levels 45 credits

- History 203, 204
- Two courses from History 426, 427, 428, 429, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 444, 448
- One course from History 410, 411, 412, 413, 415, 416, 420
- History 499 (for senior high teachers only)
- Electives under advisement

*Minor* 25 credits

- History 203, 204
- Electives, including one upper division course, under advisement

### *Teaching Competence*

Recommendation for teaching competence in history normally requires completion of the major with a grade average of 2.5 or better. An exception is the augmented minor which follows.

*Extended Minor* 33-35 credits

For English or political science majors desiring a combined recommendation appropriate for junior high or middle school.

- History 203, 204
- One Modern European course from: 426, 427, 428, 429, 431, 432, 433, 436, 437, 438, 439, 440, 441
- One course from: History 270, 280, 385
- One upper division U. S. history course
- 10 credits in electives under departmental advisement.

## ARTS AND SCIENCES

*Major* 50 credits plus Supporting Courses

- History 203, 204
- Two courses from History 426, 427, 428, 429, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 444, 448
- One course from History 410, 411, 412, 413, 415, 416, 420
- Electives under advisement; History 499 strongly recommended for students anticipating graduate study in history.
- Supporting course: Political Science 250 or 5 credits in approved upper division political science. A reading knowledge of one appropriate foreign language is recommended.

*Minor* 25 credits

- History 203, 204
- Electives under departmental advisement

## DEPARTMENTAL HONORS

A history major who wishes to graduate "with honors" must meet the general requirements for all honor students. He should consult the department chairman regarding special requirements.

## GRADUATE STUDY

For concentrations in history leading to the Master of Education or Master of Arts degrees, 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, 400, 408, 495, 499, 500, 501, 503, 504, 505, 506, 511, 599

Ancient and Medieval—410, 411, 412, 413, 415, 416, 420, 511, 512, 520

Modern Europe—336, 337, 341, 347, 425, 426, 427, 428, 429, 431, 432, 433, 434, 436, 437, 438, 439, 440, 441, 444, 448, 533, 536, 540

United States—203, 204, 360, 365, 367, 368, 391, 450, 451, 452, 453, 454, 455, 457, 459, 461, 463, 465, 466, 550, 553, 555, 560, 561, 563, 567, 591

Western Hemisphere—270, 471, 473, 571, 573

Afro-Asia—280, 385, 481, 482, 483, 484, 485, 487, 582

105, 106 HISTORY OF CIVILIZATION (4 ea)

Not open to those who have completed or intend to take General Education 121, 122, 123. Human development from earliest times to the present; an orientation to contemporary life and culture based on a study of the growth of human culture: the development of institutions, the arts, and ideas.

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 THE FAR EAST (5)

The Far East from 1500 to the present.

336 FRANCE IN THE MODERN WORLD (3)

Leading political, social and intellectual trends in 19th and 20th century French history. Summer only.

337 THE BRITISH EMPIRE (5)

Development of the overseas Empire of Great Britain from the Elizabethan period to the present.

341 EUROPEAN ECONOMIC HISTORY (5)

Economic development from the origins of capitalism to the present, with special emphasis on the emergence of modern industrialism.

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.

365 GREAT PERSONALITIES IN AMERICAN HISTORY (3)

Biographical approach based on evaluation of careers of typical leaders in public affairs, the arts and ideas.

367 SOCIETY AND THOUGHT IN EARLY AMERICA (TO THE CIVIL WAR) (5)

Social and intellectual development in America, from the Colonial Period to the Sectional Crisis.

368 SOCIETY AND THOUGHT IN MODERN AMERICA (5)

Social and intellectual trends in the United States from Darwin to Hoffer.

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.

400 SPECIAL PROBLEMS (1-5)

Prerequisite: permission of department.

408 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: Hist 105 or Gen Ed 121. Genesis of Western civilization; our cultural debt to the ancient Mesopotamians, Egyptians, Hittites, Phoenicians, Aramaeans, Hebrews, Assyrians, and Persians.

411 GREECE (5)

Prerequisite: Hist 105 or Gen Ed 121; open to sophomores with permission of instructor. The Greek World from Minoan-Mycenaean period to about 220 B.C.

412 THE ROMAN REPUBLIC (3)

Prerequisite: Hist 105 or Gen Ed 121; open to sophomores with permission of instructor. From the foundation of Rome (753 B.C.) to the end of the Republic.

413 THE ROMAN EMPIRE (3)

Prerequisite: Hist 105 or Gen Ed 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 WESTERN MEDIEVAL EUROPE (5)  
Prerequisite: Hist 105 or Gen Ed 121; open to sophomores with permission of instructor. Political, social, economic, and cultural developments of Western Europe from the death of Theodosius I (395 A.D.) to the eve of the Hundred Years War (1337).
- 416 THE BYZANTINE EMPIRE (5)  
Prerequisite: Hist 105 or Gen Ed 121; open to sophomores with permission of instructor. From the dedication of Constantinople to its fall (330-1453).
- 420 THE RENAISSANCE AND THE REFORMATION (5)  
Prerequisite: Hist 105 or Gen Ed 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 (3)  
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.
- 431 GERMANY (5)  
From the Thirty-Years War to the present; rise of Brandenburg-Prussia and role of Germany in the international state system.
- 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.
- 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.
- 448 EAST CENTRAL EUROPE TO 1919 (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 EARLY TWENTIETH CENTURY AMERICA (5)  
Political, economic, social, and intellectual development in the United States from 1900 to 1939.
- 459 THE UNITED STATES IN THE CONTEMPORARY WORLD, 1939 (5)  
Internal and international consequences of the rise of the United States as a world power since the beginning of the Second World War.
- 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: Hist 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
- 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.
- 481 CHINA (5)  
Chinese history from the Ming Dynasty to the present.
- 482 INDIA (5)  
Modern India in its political, social, economic, and cultural development.
- 483 ASIA IN THE TWENTIETH CENTURY (3)  
Impact of the Western World on the Orient in the light of Asiatic development since 1900.
- 484 CONTEMPORARY CHINA AND JAPAN (3)  
Rise of Chinese and Japanese nationalism from the mid-nineteenth century to the mid-twentieth century. Summer only.
- 485 CONTEMPORARY AFRICA SOUTH OF THE SAHARA (3)  
European imperialism in Africa in the late nineteenth and the twentieth century with emphasis on the recent development of African nationalism.
- 487 THE NEAR EAST (5)  
Cultural and historical background of Arab and Turkish lands of North Africa, the Near East; decline of Islamic influence in early times, its revival in the twentieth century.
- 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.
- 497d HISTORY OF SOUTH ASIA (3)  
Economic, social, and political problems of South Asian countries from a historical perspective. Summer 1968.
- 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 (5)  
Selected historiographical studies—Western Europe.
- 502 HISTORIOGRAPHY II (5)  
Selected historiographical studies—United States.
- 504 WRITING SEMINAR (4)  
Materials and methodology of historical research.
- 505 WRITING SEMINAR (4)  
Prerequisite: History 504. Continuation of research begun in History 504. Not offered summers.
- 506 WRITING SEMINAR: THESIS (4)  
Prerequisite: History 505. Not offered summers.
- 511-591 GRADUATE SEMINARS (4)  
Prerequisite for each of these seminars: 36 credits in history or permission of department; History 511, 512, 571, 573 require one appropriate upper division course as prerequisite.
- |  |                           |
|--|---------------------------|
| 511 Ancient Greece                           | 512 Roman History         |
| 520 Renaissance and Reformation              |                           |
| 533 Russian History                          | 536 English History       |
| 540 Modern European History                  |                           |
| 550 Colonial American History                |                           |
| 553 Civil War and Reconstruction             |                           |
| 555 Progressive Movement                     |                           |
| 560 American Economic History                |                           |
| 561 American Diplomatic History              |                           |
| 563 American Constitutional History          |                           |
| 567 American Social and Intellectual History |                           |
| 571 Canada                                   | 573 Latin America         |
| 582 Modern India                             | 591 The Pacific Northwest |
- 599a,b SEMINARS IN HISTORICAL RESEARCH AND WRITING (4 ea)  
Materials and methodology of historical research.



# HOME ECONOMICS

*Associate Professor:* Ramsland (Chairman) . *Assistant Professors:* Barron, Bieler, Larrabee, Roberts  
*Instructor:* Peach . *Lecturers:* Frick, Hashisaki, Thomas . *Visiting Lecturer:* Knowles

## TEACHER 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, 261, 272
  - 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.

*Minor* 20 credits

Courses selected under departmental advisement. Preliminary consultation is essential before undertaking a minor.

### *Teaching Competence*

Recommendation for teaching competence in home economics normally requires completion of the major with a grade average of 2.5 or better.

## ARTS AND SCIENCES

*Major Concentrations* 70 credits plus  
Supporting Courses

(These concentrations satisfy both a major and 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 Economics Emphasis*

- Home Econ 151, 164, 253, 272, 320 or 321, 338, 375, 424, 430 or 432
- Home Econ electives 16-21 credits
- Supporting courses: Chemistry 115, Economics 201 plus 35 credits under advisement from Art, Sociology, Psychology, Economics, Chemistry, Biology, Technology or Philosophy.

### *Foods, Nutrition, or Foods-Nutrition Combined Emphasis*

- 30 credits selected from Home Econ 151, 153, 250, 253, 272, 273, 350, 351, 353, 354, 372, 434, 450, 451, 453, 455
- Home Econ electives 12-15 credits
- Supporting courses: 40 credits to be selected under advisement from Chemistry, Biology, Economics, Statistics, Psychology, Sociology-Anthropology, Technology, or Zoology.

### *Child Development and Family Relationships Emphasis*

- Home Econ 320, 321, 338, 350, 420, 422, 423, 424, 425, 443
- Home Econ electives 14-17 credits
- Supporting courses: Economics 201, Psychology 201 and 351, Sociology 201, 366 and 481, plus 14 credits under advisement.

### *Housing, Equipment and Furnishings Emphasis*

- Home Econ 164, 267, 272, 273, 364, 371, 372, 375, 376, 470, 475, 476
- Home Econ 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)

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, Biol 101 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 Ed 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 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)

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 Ed 105. Legal, economic, and 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, Biol. 101. Nutritional needs during pregnancy, lactation, growth, and old age; indices of nutritional status.

### 252 FOOD AND MEAL MANAGEMENT (men) (2)

Basic principles related to food, its preparation and service.

### 253 FOODS (3)

Prerequisites: Home Econ 150 and permission of department. 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.

### 261 CLOTHING ANALYSIS (2)

Prerequisite: Home Econ 260. New developments and techniques applied to methods of teaching clothing.

### 267 WEAVING DESIGN (3)

Weaving taught through the use of a variety of looms and materials. Also offered as Technology 201.

### 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. Non-electrical and electrical appliances in relation to food preparation and demonstration.

### 300 SPECIAL PROBLEMS IN HOME ECONOMICS (1-5)

(See Home Economics 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 Ed 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 Ed 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 Ed 105, Econ 201. Management of family income and expenditures in the changing family cycle.
- 350 CHILD NUTRITION (2)  
Prerequisites: 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.
- 354 GROUP FOOD SERVICE (3)  
Prerequisites: Home Econ 353 or permission of department. Preparation and management of food for groups.
- 361 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.
- 362 FAMILY CLOTHING (2)  
Prerequisite: Home Econ 260 or 261, or permission of department. Selection and construction of clothing for the family.
- 363 FLAT PATTERN AND DRAPING (3)  
Prerequisite: Home Econ 260 or 261. Basic theory and principles of pattern and draping techniques.
- 364 TEXTILES FOR HOME FURNISHINGS (3)  
Prerequisite: Home Econ 164. Historical and contemporary design of decorative and functional textiles for home furnishings.
- 365 NEW FABRICS AND FINISHES (2)  
Prerequisite: Home Econ 164 recommended. New developments in fabrics and finishes.
- 368 HISTORY OF COSTUME (3)  
Historical costumes from the Egyptian period to the present day.
- 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)  
Prerequisites: Home Econ 370 and 372. Housing for the family; its planning and design.
- 372 ADVANCED HOUSEHOLD EQUIPMENT (3)  
Prerequisites: Home Econ 272, Tech 313. 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.
- 397a CLOTHING AND TEXTILES (3)  
Sociological and psychological aspects of clothing and textiles. Winter 1968.
- 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.
- 410 SEMINAR IN HOME ECONOMICS (1)  
Prerequisite: Home Econ 310. Current issues.
- 420 LABORATORY EXPERIENCE WITH THE PRE-SCHOOL CHILD (3)  
Prerequisites: Home Econ 120, Psych 251 and permission of department; a tuberculosis test required in compliance with State Law. Observation and participation in nursery school laboratory; administration and evaluation of child development program.
- 422 NURSERY EDUCATION (3)  
Prerequisite: Ed 431 or permission of department. Development of curriculum for nursery school age children emphasizing experiences that develop language and physical coordination, inquiry and creativity, and readiness for kindergarten and grade one. 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)  
 Prerequisites: 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 Ed 105, Home Econ 353, 230, and permission of department. Application of concepts and principles of home management to group and home living.
- 434     **FOOD ECONOMICS**   (3)  
 Prerequisites: Econ 201 and Home Econ 334. World consumption patterns; governmental agencies involved in international cooperative programs of food production; legal agencies and aspects of purchase, production and distribution.
- 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)  
 Prerequisites: 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)  
 Prerequisites: 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, Biol 101; senior status or permission of department. Significant current research in human nutrition. Formerly Home Econ 350.
- 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.
- 453     **RESEARCH PROJECTS IN FOODS**   (2-5)  
 Prerequisites: Home Econ 455 and permission of department. Problems and procedures pertaining to food studies; group food service; interpretation and evaluation of recent research; field work.
- 455     **EXPERIMENTAL FOODS**   (3)  
 Prerequisites: Home Econ 253, general education chemistry requirement, and permission. Application of scientific principles and experimental procedures to food processes.
- 460     **TAILORING**   (3)  
 Prerequisite: Home Econ 260 or 261, or permission of department. Modern tailoring techniques.
- 469     **SPECIAL PROBLEMS IN CLOTHING CONSTRUCTION**   (3)  
 Prerequisite: Home Econ 260, or permission of department. Construction and fitting problems; individual projects.
- 470     **HOUSING AND SOCIETY**   (3)  
 Prerequisite: Sociology 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.
- 497f    **FOOD AND CIVILIZATION**   (2)  
 Prerequisite: Home Econ 150 or equivalent, or permission of department. Food in culture and society and sociological factors; problems of feeding tomorrow's world. Summer.
- 497g    **CLOTHING AND THE ADOLESCENT**   (2)  
 Prerequisite: Home Econ 260 or equivalent, or permission of department. Role of clothing in the adolescent's social-psychological development; relation of clothing to communication and self-concept; teaching implications. Summer.
- 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 Economics 400.)

# LIBRARY SCIENCE

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

*Professor:* McGaw . *Associate Professor:* Mathes  
*Assistant Professor:* Rahmes

## TEACHER EDUCATION

### *State Standards*

18 credits for preparation of librarians with less than 400 enrollment: Library Science 305, 307, 308 (which ever is appropriate); 401, 402, 403, 404; Education 450. A library school degree is required in larger schools.

*Minor* 24 credits

- Library Science 305, 308, 401, 402, 403, 404
- Education 450, 451

(Students wishing to prepare for elementary school library work, should substitute 306 or 309 for 308.)

## 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 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 305. 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.

### 497a LIBRARY MATERIALS FOR TEACHERS (3)

Prerequisite: a course in children's literature or permission of instructor. Evaluation and use of children's books and non-print materials, (filmstrips, records, etc.) in their implementation of the elementary school curriculum. Spring 1968.

# MATHEMATICS

*Professors:* Abel, Hashisaki (Chairman), Reay, Rygg, Woll . *Associate Professors:* R. Atneosen, Craswell, Duemmel, Gelder, Gray, J. Hildebrand, McFarland, Mitra, Sanderson, Witter . *Assistant Professors:* Chalice, F. Hildebrand, Kauffman, Kelley, Levin, Lindquist, Read . *Lecturers:* G. Atneosen, Froderberg, McMullen

The study of college level mathematics should begin with Mathematics 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.

Mathematics 121 is offered for students needing a knowledge of the topics listed in (d). The student who is deficient in (a) should enroll in Mathematics 100; students deficient in (c) should enroll in Mathematics 105. These courses, if needed, should be completed before enrolling in Mathematics 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.

## TEACHER EDUCATION

*Major* Elementary 45 credits

- Mathematics 121 (if needed), 122, 222, 241, 305, 310

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- Math 321 for 251 in Elementary Teaching Minor
- One course from the 400 level
- Electives under departmental advisement

*Major* Secondary 45 credits

- Mathematics 121 (if needed), 122, 222, 223, 483, 224 or 302, 241 or 305, 301, 401 or 410.
- Electives from Mathematics 270 and upper division courses under advisement

*Minor* 24-30 credits

- Mathematics 121 (if needed), 122, 222, 223, 310, 321
- Mathematics 481 or 483

## 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 Mathematics 122, 222, 223, 224 or 301, 241 or 305, 310 or 410, 321 or 401, 483.

## ARTS AND SCIENCES

*Major* 60 credits, plus Supporting Courses

- Mathematics 121 (if needed), 122, 222, 223, 224
- Not less than 18 credits in approved courses numbered 400 or above
- Include either the one year sequence in advanced calculus (325, 425, 426), and 8 credits in modern algebra (401, 402, 403), or 8 credits from the advanced calculus sequence and the one year sequence in modern algebra.
- Electives under departmental advisement
- Supporting courses: 15 credits from Physics 231, 232, 233 or other courses related to mathematics as approved by the department; language competency in French, German, or Russian.

### *Minor* 25 credits

- Mathematics 121 (if needed), 122, 222, 223
- Electives from Mathematics 224, 241, 270 and upper division courses as advised.

### *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.

## DEPARTMENTAL HONORS

### *Arts and Sciences*

In order to graduate with “honors in mathematics,” a student must complete Mathematics 325, 331, 401, 402, 403, 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 Mathematics 301, 325, 401, 425,

and 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

### 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 Mathematics 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.

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, 224 ANALYTIC GEOMETRY AND CALCULUS (5,4,4)  
Prerequisite: Math 122. Elementary treatment of coordinate geometry of the plane and solid spaces. Mathematics 222—the integral and integration, the differentiation of transcendental functions, and parametric equations; Mathematics 223, 224—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.

251 THEORY OF ARITHMETIC (4)  
Prerequisite: Math 100, 105, 121, 151, (one course); not open to students with credit in Math 301 or 321. Systems of numeration, sets, relations and number systems, and integration of these concepts.

270 DIGITAL COMPUTER PROGRAMMING (3)  
Prerequisites: Math 220, 222, or 240. Machine language, compiler language, and elementary numerical methods; laboratory experience at the Computer Center.\*

301 VECTORS AND MATRIX ALGEBRA (4)  
Prerequisite: Math 223 or permission of instructor. Linear spaces, subspaces, dimension, linear transformations, matrices of transformations, and determinants.

302 VECTORS AND MATRIX ALGEBRA (4)  
Prerequisite: Math 301. Problems and applications of linear algebra, inner products, orthogonality, special linear transformations, application to infinite dimensional spaces.

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.

306 LINEAR PROGRAMMING (3)  
Prerequisites: Math 270, 301. Graphical solution of linear programming problems; convex sets in the Cartesian plane; linear forms; fundamental extreme point theorem; simplex method in linear programming; elementary aspects of the theory of games; matrix games and linear programming.

310 EUCLIDEAN AND NON-EUCLIDEAN GEOMETRY (3)  
Prerequisite: Math 223; not open to students with credit in 400 level mathematics. Metric development of Euclidean geometry, and consideration of non-Euclidean geometries.

321 THE ALGEBRAIC FOUNDATION OF MATHEMATICS (4)  
Prerequisite: Math 222; not open to students with credit in Math 301 or 325 or 400 level courses. Algebraic systems; the concept of order and completeness; the natural numbers and construction of rational and real numbers.

325 INTERMEDIATE ANALYSIS (4)  
Prerequisite: Math 224 or permission of instructor. Continuity and differentiability of functions on the real line; theory of Riemann integrations and fundamental theorems of calculus; uniform convergence.

331 DIFFERENTIAL EQUATIONS (4)  
Prerequisite: Math 224 or permission of instructor. Ordinary differential equations, elementary methods of solution of first, second, and higher order linear equations; solutions by operators and by series; method of Frobenius, Legendre and Bessel equations.

332 DIFFERENTIAL EQUATIONS (3)  
Prerequisite: Math 331. Partial differential equations and boundary value problems; Fourier Series and orthogonality; Dirichlet-Fourier theorem and Sturm Liouville theorem.

341, 342 STATISTICAL METHODS (4 ea)  
Prerequisites: Math 121, 241, 270. Elementary course in statistical methodology with emphasis on point estimates and confidence interval estimation, hypothesis testing, and analysis of variance.

361 VECTOR ANALYSIS (4)  
Prerequisite: Math 224 or permission. Algebra of vectors, vector spaces, vector calculus, line integrals, divergence, curl, Stokes' Theorem, application of vectors to the study of work, potential theory, and fluid flow.

381 INFORMAL GEOMETRY (3)  
Prerequisite: Math 251; for elementary teachers. Experimental geometry as models of physical space and geometry as a deductive system.

396a,b,c HONORS TUTORIAL (2 ea)  
Prerequisite: permission of department.

\*The facilities of the Computer Center, including an IBM 1620 Computer, are available to qualified students free of charge for instruction in computer techniques, for research and for general education in computer applications. Mathematics 270 provides basic instruction in the use of the computer.



- 397f DIGITAL COMPUTER PROGRAMMING II (3)  
Prerequisite: Math 270 or permission of instructor. Assembler language programming for the IBM 360 series; introduction to architecture of the 360. Spring 1968.
- 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 224 and 302, 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.
- 410, 411 MODERN GEOMETRY I, II (4 ea)  
Prerequisite: Math 301 or 401. Synthetic projective planes; collineations, dilatations, translations and similitudes; non-Desarguean planes, non-Fano planes, vertex preserving endomorphisms; introduction of coordinates; Veblen Wedderburn systems, alternate division rings; the fundamental theorem of projective and affine geometry.
- 415 CONVEXITY (4)  
Prerequisite: Math 301 or permission of instructor. Geometry of convex bodies and polytopes, separation and support theorems, combinatorial analysis, Helly's Theorem and its relatives, integral representation of convex sets in terms of their external structure.
- 424, 425, 426 ADVANCED CALCULUS (4 ea)  
Prerequisite: Math 301 and either 325 or 224 and permission. Sequences and series; power series and uniform convergence; compactness and completeness in abstract metric spaces; selected topics from real and abstract analysis.
- 427 INTRODUCTION TO ANALYSIS (4)  
Prerequisite: Math 426. Metric spaces, topological space and concepts.
- 428 FUNCTIONS OF SEVERAL VARIABLES (4)  
Prerequisite: Math 301 and either 325 or 425. Differentiability of mappings between Euclidean spaces and other topics in the theory of functions of several variables.
- 431 INTRODUCTION TO COMPLEX VARIABLES (4)  
Prerequisite: Math 325 or 425. Differentiation and integration of complex-valued functions; Cauchy integral theorem; calculations of residues.
- 441, 442, 443 MATHEMATICAL STATISTICS (4 ea)  
Prerequisites: Math 301, 325, 425 (or concurrent). Probability theory; development of distributions; generating functions: averages, moments, regression, correlation, variance, and statistical inference.
- 471, 472, 473 NUMERICAL METHODS (3 ea)  
Prerequisites: Math 270, 301, and 331 or permission of instructor. Solution of equations, polynomial approximation, interpolation, error analysis, numerical quadrature, systems of equations, matrices, eigenvalues, least-squares, minimax, ordinary and partial differential equations, boundary value problems.
- 481 MATHEMATICS IN GRADES 1 THROUGH 8 (4)  
Prerequisite: Math 251 or permission of instructor. The teaching of mathematics in terms of objectives and methods of presentation.
- 483 MATHEMATICS IN THE SECONDARY SCHOOL (3)  
Prerequisite: upper division courses in algebra and in geometry. Mathematics content of advanced high school courses from teacher's viewpoint; the major experimental programs.
- 491 MODERN MATHEMATICS FOR TEACHERS (3)  
Sets, set operations and relations, systems of numeration, rational numbers.
- 492 MODERN MATHEMATICS FOR TEACHERS (3)  
Real number system, congruence classes, set operations and relations, intuitive geometry, coordinate geometry.
- 495 EXPERIMENTAL MATHEMATICS IN THE ELEMENTARY SCHOOL (3)  
Prerequisite: Math 251. Experimental elementary school mathematics projects with emphasis on the mathematical context of such programs.
- 496a,b,c HONORS TUTORIAL (2 ea)  
Prerequisite: permission of department.
- 497a DIGITAL COMPUTER PROGRAMMING III (3)  
Prerequisite: Math 397f. The structure of assemblers and macro compilers; programming examples from the area of utility system functions including techniques of sorting, binary searches, data conversion, random number generation; elementary work in I/O and interrupt procedures; laboratory work included.
- 499 MATHEMATICS SEMINAR (1-3)
- 500 SPECIAL PROBLEMS (1-5)  
Prerequisite: advanced standing and permission of instructor.
- 501, 502, 503 ADVANCED ABSTRACT ALGEBRA (3 ea)  
Prerequisite: Math 403 or permission of instructor. 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.

511, 512, 513 TOPOLOGY (3 ea)

Prerequisite: Math 425. Topological spaces, metric spaces, convergence, connectedness, compactness, product and quotient spaces, function spaces.

521, 522 ANALYSIS (3 ea)

Prerequisite: Math 427 or equivalent. Measure theory, Lebesgue integration, Fourier series, function spaces.

525, 526, 527 THEORY OF FUNCTIONS OF A REAL VARIABLE (3 ea)

Prerequisite: Math 522 or permission of instructor. Topological concepts in analysis; general measure theory; integration in locally compact Hausdorff spaces, LP spaces, abstract Hilbert spaces; classical representation theorems; related topics.

531, 532, 533 COMPLEX VARIABLES (3 ea)

Prerequisite: Math 426. 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.

570 THESIS (variable credit)

590 MATHEMATICS CURRICULUM SEMINAR (1)

Prerequisite: admission to the Master-Teacher program. The mathematics curriculum in the public schools.

597j MODERN GEOMETRY (4)

Prerequisite: graduate status or permission of instructor. Modern geometry approached from the standpoint of linear algebra and convex sets.

597k,l COMPUTER SCIENCE WITH APPLICATIONS (4 ea)

Prerequisite: bachelor's degree in mathematics and permission of the Director of the Summer Institute for Junior College Teachers of Mathematics. A compiler language (PL/1) with applications from mathematics, statistics, and accounting; operating system (IBM 360/40) with mass storage and remote terminals; laboratory experience in educational and administrative applications.

597m,n MODERN HIGHER ALGEBRA (4 ea)

Prerequisite: bachelor's degree in mathematics and permission of the Director of the Summer Institute for Junior College Teachers of Mathematics. Linear algebras and their representations, invariance and conical forms.

597p,q TOPICS IN DIFFERENTIAL EQUATIONS (4 ea)

Prerequisites: bachelor's degree in mathematics and permission of the Director of the Summer Institute for Junior College Teachers of Mathematics. Solution of ordinary differential equations; special functions; applications.

598 RESEARCH (variable credit)

599 MATHEMATICS SEMINAR (1-3)

699 MATHEMATICS SEMINAR (1-3)

Prerequisite: graduate course in the area of the seminar. The anticipated areas for Summer 1968 are analysis, algebra, topology, and geometry.

## MUSIC

*Professors:* North (Chairman), Regier . *Associate Professors:* Detrekoy, Glass, Osborn, Scandrett, Schaub, Stoner, Szonoru, Walter, Whitcomb . *Assistant Professors:* Ager, Hamm, Hinds, Sackrison, Terey-Smith . *Affiliated:* L. Bussard, N. Bussard, Cummings, Funes, Hamstreet, McDaniel, Nakayama, Reubart, Thal, Wohlmacher

### 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.

## 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 during the academic year. There is an additional charge of \$40 per credit for applied music instruction during the Summer Session.

Minimum applied performance proficiency levels required for entrance to private applied music study are detailed in a bulletin available upon request from the Music Department office.

## THEORY PLACEMENT EXAMINATION

A placement examination is required for all incoming freshman music students to determine their correct status in the theory program. This examination will be given during the first class period of Music 131 fall quarter. Those not passing will enroll in Music 130 as a prerequisite to Music 131. All students transferring with advanced standing will also take a theory placement examination given during registration at the beginning of the quarter in which they enter the college. 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 and minors are required to pass a preliminary and a final piano competency examination in order to complete their program. Students who enter as freshmen should pass the preliminary examination by

the end of their sophomore year. Transfer students should pass the preliminary examination during registration at the beginning of the quarter in which they enter the college. The final examination will be taken at the end of the quarter prior to student teaching since it is prerequisite to student teaching in music.

## SCHOLARSHIPS

In addition to general college scholarships, several awards are available from off-campus music organizations. For further information, consult the Music Department.

## ARTS AND SCIENCES

*Major* 70 credits, plus Performance Requirement

- Theory: Music 131, 132, 133, 231, 232, 331, 332, 333
- Ear Training: Music 135, 136, 137, 235, 236
- Form and Analysis: Music 335
- History: Music 341, 342, 343; Music 443 (one course in the series)
- Conducting: Music 309, 310, or Music 311, 312
- Applied Music: Major performing instrument or voice, 12 credits
- Secondary applied instrument or voice, 6 credits
- Music 326, 3 credits
- Major performing group as stated above for all majors
- Senior Recital
- Concert attendance and piano competency requirements as stated above

*Minor* 25 credits

- Theory: Music 131, 132, 133, 231, 232
- Ear Training: Music 135, 136, 137, 235, 236
- History: Music 341
- Applied Music: Major performing instrument or voice, 4 credits
- Piano competence 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.

## TEACHER 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
- Ear Training: Music 135, 136, 137, 235, 236
- Form and Analysis: Music 335
- History: Music 341, 342, 343
- Conducting: Music 309, 310, or Music 311, 312
- Education: Music 351, 462, 464
- Methods: Music 105, 106, 204, 205, 301, 302 plus two courses selected from Music 107, 206, 207, 303
- Applied Music: Major performing instrument or voice, 11 credits
- 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
- Ear Training: Music 135, 136, 137, 235, 236
- History: Music 341, 342, 343
- Education: Music 351 (for Music 350) in Elementary Teaching Minor; Music 451
- Methods: Music 105, 106, 107
- Applied Music: Major performing instrument or voice, 6 credits.
- Major performing group as stated above for all majors.
- Concert attendance, piano competency requirements as stated above
- Music 335 recommended as an elective as it is prerequisite to graduate study

**Minor** 25 credits

- Theory: Music 131, 132, 133, 231, 232
- Ear Training: Music 135, 136, 137, 235, 236
- History: Music 341
- Methods: Music 105
- Applied Music: Major performing instrument or voice, 3 credits

- Piano competency as stated above

Note: Music 131, 132, 133 are prerequisite to all other non-performance courses in the minor.

### *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 the area of music; those enrolling in the 39 credit elementary major will complete supervised teaching in elementary music and in a general elementary assignment.

## DEPARTMENTAL HONORS

In addition to the general honors requirements, a student planning to graduate "with honors" in music must complete Music 396a,b,c; Music 401; Music 496a,b,c; and a comprehensive examination. Students qualifying for the Departmental Honors Program may elect either of two areas: Music History and Criticism, or Music Composition and Theory. The area chosen must be realized by a thesis and illustrated by a musical performance.

## GRADUATE STUDY

For concentrations in music leading to the Master of Education degree, 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. Fundamental techniques with stress upon sight-reading, accompanying, and literature.

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.

- 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.  
211 Organ  
212 Piano  
213 Strings  
214 Band instruments  
215 Voice
- 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.
- 227 WESTERN STATESMEN (1)  
Prerequisite: permission of instructor. Men's choral group.
- 231 ADVANCED HARMONIC PRACTICE (2)  
Prerequisite: Music 133. Incomplete major dominant ninth chord; complete dominant ninth chord; use of the sequence; non-dominant seventh chords; ninth, eleventh, and thirteenth chords; keyboard experience; analysis.
- 232 ADVANCED HARMONIC PRACTICE (2)  
Prerequisite: Music 231. Altered supertonic and submediant seventh chords; Neapolitan chord; augmented sixth chords; keyboard experience; analysis.
- 235 ADVANCED EAR TRAINING (1)  
Prerequisite: Music 137. Sight singing and musical dictation. To be taken concurrently with Music 231.
- 236 EAR TRAINING (1)  
Prerequisite: Music 235. Sight singing and musical dictation. To be taken concurrently with Music 232.
- 301, 302, 303 STRING TECHNIQUE AND PEDAGOGY (1 ea)  
Each course prerequisite to the next. Principles and techniques of playing and teaching string instruments.
- 309, 310 CHORAL CONDUCTING (3 ea)  
Prerequisite: Music 232 and 236. Music 309 prerequisite to 310. Choral conducting techniques, score reading, and interpretative analysis.
- 311, 312 INSTRUMENTAL CONDUCTING (3 ea)  
Prerequisite: Music 232 and 236. Music 311 prerequisite to 312. Instrumental conducting techniques, score reading, and interpretative analysis.
- 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 ELEMENTARY HARMONIC PRACTICE (3)  
Prerequisite: passing of Theory Placement Examination or Music 130. Intervals; triads in root position; harmonic progression; four-part writing with proper voice leading; first inversion of triads; figured bass; keyboard experience; analysis.
- 132 ELEMENTARY HARMONIC PRACTICE (3)  
Prerequisite: Music 131. Harmonizing melodies; cadences; use of non-harmonic tones; second inversion of triads; modulation; keyboard experience; analysis.
- 133 ELEMENTARY HARMONIC PRACTICE (3)  
Prerequisite: Music 132. Dominant seventh chords; secondary dominants; irregular resolution of the dominant; diminished seventh chord; keyboard experience; analysis.
- 135 ELEMENTARY EAR TRAINING (1)  
Prerequisite: passing of Theory Placement Examination or Music 130. Sight singing and musical dictation; melodic, harmonic, and rhythmic materials. To be taken concurrently with Music 131.
- 136 ELEMENTARY EAR TRAINING (1)  
Prerequisite: Music 135. Sight singing and musical dictation. To be taken concurrently with Music 132.
- 137 ELEMENTARY EAR TRAINING (1)  
Prerequisite: Music 136. Sight singing and musical dictation. To be taken concurrently with Music 133.
- 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. Intermediate techniques; 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.

- 321 CONCERT CHOIR (1)  
Selected group experience, vocal ability, reading skill, musicianship, and interest in serious choral music considered for membership.
- 322 SYMPHONY ORCHESTRA (1)  
Prerequisite: permission of instructor; open to all students who can qualify.
- 323 WIND ENSEMBLE (1)  
Prerequisite: permission of instructor.
- 324 WESTERN SYMPHONIC STRINGS (1)  
Open to all students who can qualify. String and chamber orchestra.
- 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.
- 331, 332, 333 COUNTERPOINT (3 ea)  
Prerequisite: Music 232. Vocal and instrumental counterpoint from the 16th through the 19th centuries in theory and practice.
- 335 FORM AND ANALYSIS (3)  
Prerequisite: Music 232. Study and analysis of harmonic and contrapuntal structures.
- 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)  
Prerequisite: Music 232, 341. Main styles, forms, composers in 17th-18th centuries; performance of representative compositions.
- 343 HISTORY OF MUSIC 1800 TO PRESENT (3)  
Prerequisite: Music 232, 342. Main styles, forms and composers from 1800 to the present; performance of representative compositions.
- 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 organizations of the elementary music program; observation and laboratory experience.
- 396a,b,c HONORS TUTORIAL (2-5 ea)  
Prerequisite: approval of department.
- 400 SPECIAL PROBLEMS (1-5)  
Individual study under departmental supervision.
- 401 HONORS SEMINAR (3)
- 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.
- 430 HARMONIC STRUCTURE AND FORM (5)  
Prerequisite: Music 232. Traditional harmonic usage emphasizing harmonic analysis and the function of harmony in musical forms.
- 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.
- 434 PHYSICS OF MUSICAL INSTRUMENTS (3)  
Production and transmission of musical tone and the acoustical problems of musical performance.
- 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.
- 440 COLLEGIUM MUSICUM (1)  
Study of musical literature and historical performance practices.
- 442 AMERICAN MUSIC (3)  
History and development of American music from colonial times to the present.
- 443 HISTORY OF MUSICAL MEDIA (4 ea)  
443a Choral Music      443d Keyboard Music  
443b Solo Song        443e Chamber Music  
443c Opera            443f Symphonic Music  
Prerequisite: Music 343. Development and literature of the important musical media from their origin to the present.

- 451 MUSIC LISTENING IN THE ELEMENTARY SCHOOL (3)  
Literature, activities, and teaching techniques; correlation with other classroom studies; out-of-classroom activities and programs.
- 452 MUSIC LITERATURE FOR ELEMENTARY SCHOOLS (3)  
Appropriate literature for the elementary school music activities of singing, rhythms, outside reading, programs.
- 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 history and appreciation 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.
- 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.
- 470 MUSIC SEMINAR (1)  
Readings and discussion of major issues and development in music and music education.
- 496a,b,c HONORS TUTORIAL (2-5)  
Prerequisite: permission of department.
- 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 (1)  
Curriculum, teaching practices, and trends of public school music.
- 511-515 INDIVIDUAL INSTRUCTION—GRADUATE LEVEL (1-2 ea)  
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.

553 PSYCHOLOGY OF MUSIC (3)

Recent advances in the psychological foundations of total organization, perception, and function underlying music education's objectives and procedures. Summer only.

554 DIRECTED READINGS AND RESEARCH (3)

Seminar discussion of areas of needed research in music education. To be taken concurrently with Education 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.

556 AESTHETICS IN MUSIC (3)

The aesthetic basis of music, the role of aesthetic principles in the critical evaluation of musical composition, performance, and theories of music education.

# PHILOSOPHY

*Professors:* Daugert (Chairman) . *Associate Professors:* Karason, Purtill . *Assistant Professors:* Fleetwood, Montague, Morrow . *Instructor:* Stoothoff

## ARTS AND SCIENCES

*Major* 45 credits

- Philosophy 111, 112, 113, 202, 220 or 420
- Philosophy 304, 305, 306, 310, 407
- Electives under departmental advisement

*Minor* 25 credits

- Philosophy 111, 112, 113, 202, 310
- Electives under departmental advisement

## TEACHER EDUCATION

*Minor* 25 credits

- Philosophy 111, 112, 113, 202, 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)  
Prerequisite: three years of high school mathematics. Rules of valid deduction from premises and methods of formulating valid generalizations from experience.
- 111 TYPES OF PHILOSOPHY (3)  
Major types such as idealism, realism, Thomism, pragmatism, ordinary language; main questions and problems they were designed to solve. Recommended as a first course in philosophy.
- 112 INTRODUCTION TO TRADITIONAL PHILOSOPHY (3)  
Fundamental problems, principles, and methods in the major fields of philosophy; traditional views concerning substance, causality, knowledge, belief, goodness, and duty.
- 113 INTRODUCTION TO CONTEMPORARY PHILOSOPHY (3)  
Major philosophers, great problems and schools of philosophy of the 20th century, including Russell, Wittgenstein and Sartre; Positivism, Existentialism, and Ordinary Language Philosophy.
- 202 LOGIC FOR PHILOSOPHY (4)  
Prerequisite: permission of instructor; 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.
- 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."
- 230 SOCIAL AND POLITICAL PHILOSOPHY (3)  
Concepts and principles involved in analysis and appraisal of social institutions with attention to natural rights, natural law, social utility, social function, and justice.
- 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.
- 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; a brief examination of Kant as he relates to these men.
- 307 HISTORY OF PHILOSOPHY: THE NINETEENTH AND TWENTIETH CENTURIES (4)  
Prerequisite: Phil 102 or 202 and one additional philosophy course, or permission of instructor. Emphasis upon post-Kantian idealism 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 Jonathan Edwards to the present.
- 310 THEORY OF KNOWLEDGE (3)  
Prerequisites: Philosophy 202 and one course numbered above 200. The attempt to understand the possibility, nature, origins, and limits of knowledge; problems and concepts.
- 350 ORIENTAL PHILOSOPHY AND RELIGION (3)  
Major philosophical and religious traditions of the Orient.
- 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.

406 PHILOSOPHY OF LITERATURE (2)  
The nature of literature and the relation of its aesthetic to its moral and cognitive values.

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: Philosophy 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 interrelations of the sciences.

420 ETHICAL THEORY (3)  
Prerequisite: Philosophy 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.

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 English 483 and Sociology 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, AND RECREATION

## MEN'S DEPARTMENT

*Associate Professors:* Lappenbusch, LeProtti, Lounsberry, Tomaras (Chairman) . *Assistant Professors:* Long, Randall, Wiseman . *Lecturers:* Emerson, C. Hamilton

## WOMEN'S DEPARTMENT

*Associate Professors:* Aitken (Chairman), Hansen, Kilby  
*Assistant Professors:* Arnett, Gutchow, Hamilton, Shaffer . *Instructors:* Ames, Bryan, Jacobs

The departmental programs encompass activity courses to meet general education requirements; activity courses as electives; professional study in fields of physical education, health education, and recreational leadership; intramural sports and dance; intercollegiate athletics.

## GENERAL EDUCATION REQUIREMENTS

The student selects a minimum of three activity courses to meet the general education requirements. Students may select activities of their own choosing as available,

except for the following restrictions:

(1) All students must satisfactorily pass the minimum swimming proficiency test or take P E 112.

(2) Women students may be required to enroll in adapted or low-fitness sections of P E 102w Movement Fundamentals, on the basis of performance on the Physical Education Placement Test given to new freshmen at entrance.

## TEACHER EDUCATION—MEN

*Major* Secondary 45 credits

- PE 201m, 202m, 203m, 207m, 208m, 209m, 351m
- PE 204m, 205, 302, 303, 308m, 404m, 490
- Health Ed 350 or 450
- Zoology 241
- Electives under departmental advisement

Students must establish competence in certain activities before approval is granted for student teaching in physical education. These activities are: badminton, basketball, dance, gymnastics, soccer, swimming, tennis, track, volleyball, weight training, and wrestling. Competence in an activity may be demonstrated by completing the appropriate course with a minimum grade of "C," or by a performance and written test (the test does not award credit).

Successful performance in each activity is also a prerequisite to teaching competence recommendation for certification.

*Major* Elementary 45 credits

- PE 201m, 203m, 205, 302, 303, 311, 312, 326, 404m, 490
- Health Ed 252, 350, 450
- Zoology 241
- Electives under departmental advisement

*Major Concentration* 70 credits

(Specialist in Physical Education, Health Education, and Recreation; satisfies both the major and minor requirement)

- PE 201m, 202m, 203m, 207m, 208m, 209m, 351m
- PE 204m, 205, 302, 303, 306, 308m, 404m, 410m, 490
- Health Ed 252, 350, 450
- Recreation 201, 250, 412
- Industrial Arts 301
- Eight credits from PE 217, 380m, 381m, 382m, 383m, 384m
- Zoology 241
- Electives under departmental advisement, some of which may be from other departments.

*Minor—Physical Education* 25 credits

- Six credits from PE 201m, 202m, 203m, 207m, 208m, 209m
- PE 204m, 205, 308m, 351m, 404m
- Electives under departmental advisement

*Minor—Athletic Coaching* 25 credits

(This minor is not open to P E majors)

- PE 204m, 302, 343m, 406m
- Zoology 241
- 10 credits from P E 217, 351m, 380m, 381m, 382m, 383m, 384m

*Minor—Health Science* 25 credits

- Health Education 252, 350, 450
- Biology 447; Zoology 243
- Home Economics 150
- Two courses under advisement from Biology 247, 371, Zoology 241, 261, 262

## TEACHER EDUCATION—WOMEN

*Major* Secondary 48 credits\*

- P E 102w, 201w, 202w, 203w, 207w, 208w, 209w
  - P E 205, 302, 305w, 320, 342w, 402, 404w, 405
  - Health Education 252
  - Zoology 241 and 243, or Zoology 248-249
- P E 306 is recommended for junior high teaching. Students who combine this major with a Health Science

\*Includes satisfaction of 3 credit general education requirement.

Minor will take an additional 10 credits under departmental advisement due to the overlap of requirements.

**Major—Elementary** 48 credits\*

- P E 102w, 201w, 202w, 203w, 207w, 208w, 209w
  - P E 205, 302, 311, 312, 326, 402, 403
  - Health Ed 252; Zool 241, 243, or 248-249
  - Two credits under departmental advisement
- Also recommended: Health Education 350 and inclusion of Ed 326 in the elementary minor

**Major—Dance** 48 credits\*

- P E 102w, 202w, 208w, 209w
  - P E 205, 226, 302, 305w, 322, 424
  - P E 320, 324, 325, 326, 405, 425 or 426
  - Zoology 241-243 or Zool 248-249
- Recommended courses: P E 134, an officiating course and an additional team sport.

**Major Concentration** 72 credits

(For specialists in elementary and secondary girls' physical education; includes a major and a Health Science minor)

- P E 102w, 201w, 202w, 203w, 207w, 208w, 209w
  - P E 205, 302, 305w, 311, 312, 320, 326, 342w
  - P E 402, 403, 404w, 405
  - Health Education 252, 350, 450
  - Biology 447; Home Econ 150
  - Zoology 248-249 or 241 and 243
- Additional recommended courses: Rec 250, P E 303; 490

**Minor—Physical Education** 28 credits\*

- P E 102w, 201w, 202w, 203w, 207w, 208w, 209w
- P E 205, 305w, 306, 320, 404w
- Health Ed 252
- Upper division electives under advisement

**Minor—Dance** 25 credits

- P E 123, 126, 225, 226
- P E 320, 322, 324, 325, 425 or 426
- 7 credits elective under departmental advisement

\*Includes satisfaction of 3 credit general education requirement.

**Minor—Health Science** 25 credits

- Health Education 252, 350, 450
- Home Econ 150; Biol 447
- Zoology 248-249 or 241 and 243
- One or more credits from Biol 345, 371, Health Ed 352, Home Econ 250, Zool 262

**Teaching Competence**

Recommendation for teaching competence for girls' physical education normally requires completion of a major with a grade of 2.5 or better. Participation in intramural activities is required of all women majors and minors during four quarters of the first two years.

**ARTS AND SCIENCES  
—MEN AND WOMEN**

**Major—Recreation (Men)** 85 credits

- Rec 201, 250, 301, 302, 412
- 8 credits from Rec 450, 451, 452
- P E 201m, 202m, 207m, 208m, 209m
- P E 205, 216, 217, 306, 351m
- Tech 240, 301; Health Ed 252
- Econ 101; Soc/Anth 201, 366
- Speech 330; Ed 450
- 13 credits from: Psych 351, 352, 440; Econ 271; Music 350; Bot 251, 252
- Electives under departmental advisement

**Major—Recreation (Women)** 85 credits

- Recreation 201, 250, 301, 302, 412
- 8 credits in Rec 450, 451, 452
- P E 202w, 207w, 208w, 209w
- P E 205, 305w, 306, 320
- Health Education 252
- Supporting Courses: I A 301, Mus 350, Psych 351, 352, 440; Soc 201, Speh 330; 17 credits under advisement from one or two concentrations in art, music, dance, outdoor education, or sports and aquatics.

**Major—Dance** 85 credits

- P E 122, 125, 126, 128, 225, 226, 227
- P E 320, 321, 322, 323, 324, 325, 326
- P E 424, 425, 426
- Supporting courses: Zool 241-243 or 248-249; P E 302, Art 190; six credits from Art 193, 194, 195, Music 140, Phil 405; three credits from Phil 111, 112, 113, Soc/Anth 201, Psych 201; five credits from Soc/Anth 361, 362, 363, 364, Speech 130.

**Minor—Dance** 25 credits

- P E 123, 126, 128, 225, 226
- P E 322, 324, 325, 425 or 426
- Philosophy 405
- Six additional credits under departmental advisement.

**Minor—Health Science** 25 credits

- Biology 447; Zool 241, 243, or 248-249
- Health Ed 350; Home Econ 150
- Two courses under advisement from Health Ed 252, 450; Biol 371; Chem 115; Zool 261, 262

**Minor—Dance** 25 credits

- P E 121, 123, 126, 226, 228, 229, 320, 324, 325, 425
- Philosophy 405
- Electives under departmental advisement

**Minor—Recreation (Women)** 25 credits

- 6 credits from P E 202w, 207w, 208w, 209w
- P E 306
- Recreation 201, 250, 412, 450 (3 credits)
- Electives under departmental advisement

**GRADUATE STUDY**

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

**ACTIVITIES COURSES**

Activity 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**

- 102w Movement Fundamentals
- 103 Jogging
- 106m Body Conditioning
- 108m Weight Training
- 109m Intermediate Weight Training

**110-119 AQUATICS**

- 112 Beginning Swimming (for non-swimmers)
- 113 Intermediate Swimming. Prerequisite: P E 112 or ability to swim twenty-five yards and support self in deep water.
- 114 Advanced Swimming. Prerequisite: P E 113 or ability to swim 100 yards with one stroke and to use a variety of other strokes.
- 115 Aquatic Art. Prerequisite: P E 114 or equivalent.
- 116 Advanced Aquatic Art.

**120-129 DANCE**

- 120 Beginning Social Dance
- 121 Intermediate 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**

- 132 Beginning Badminton
- 133 Intermediate Badminton
- 134 Fencing
- 136 Beginning Tennis
- 137 Intermediate Tennis
- 138m Beginning Wrestling
- 139m Intermediate Wrestling

The student furnishes equipment for PE 136, 137

**140-149 TEAM SPORTS**

- 141w Field Hockey
- 142m,w Basketball
- 143m,w Softball
- 144m,w Speedball and Soccer
- 145m,w Volleyball
- 147m Touch Football
- 148w Lacrosse

## 150-161 INDIVIDUAL SPORTS

- 150 Archery
- 151m,w Gymnastics and Tumbling
- 152 Beginning Bowling (bowling alley fee \$6)
- 154 Beginning Golf
- 155 Intermediate 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

The student enrolling in 157, 158, 159, 160 pays cost of transportation and individual instruction. Students in 157, 158, 159, 161 also furnish equipment.

## 180-190 INTERCOLLEGIATE SPORTS

- 180m Intercollegiate Football
- 180w Intercollegiate Field Hockey
- 181m,w Intercollegiate Basketball
- 182m Intercollegiate Baseball
- 182w Intercollegiate Softball
- 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

## PROFESSIONAL COURSES

### 201m, 202m, 203m PROFESSIONAL ACTIVITIES (2 ea)

- 201m Team Sports
- 202m Individual Sports
- 203m Aquatics (prerequisite: intermediate level swimmer)

Open to freshmen majors or minors.

### 201w, 202w, 203w PROFESSIONAL ACTIVITIES (2 ea)

- 201w Field Hockey, Basketball
- 202w Badminton, Gymnastics
- 203w Volleyball, Softball, Track and Field

Required of freshmen majors or minors in physical education. Development of knowledge and skill.

### 204m ATHLETIC INJURIES AND TRAINING (3)

Treatment for injuries common to the playground, gymnasium, and athletic field; training and safety measures for prevention of injuries; procedures for building physical stamina; experience in taping procedures.

205 HISTORY OF PHYSICAL AND HEALTH EDUCATION AND RECREATION (3)  
Historical backgrounds, the range of opportunities in the fields, qualifications, professional preparation.

### 207m PROFESSIONAL ACTIVITIES—TRACK AND PHYSICAL CONDITIONING (1)

Open to freshman majors and minors.

### 208m PROFESSIONAL ACTIVITIES—WRESTLING AND WEIGHT TRAINING (2)

Open to freshman majors and minors.

### 209m PROFESSIONAL ACTIVITIES—DANCE IN THE PUBLIC SCHOOLS (1)

Open to freshman majors and minors.

### 207w, 208w, 209w PROFESSIONAL ACTIVITIES (2 ea)

- 207w Soccer, Speedball, Fencing, and Bowling
- 208w Modern Dance, Aquatics
- 209w Social, Folk and Square Dance, Tennis, Archery and Golf

Required of sophomore majors and minors in P.E.

### 216 LIFESAVING AND WATER SAFETY (2)

Prerequisite: satisfactory performance 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 Lifesaving Certificate. Stroke analysis and methods of teaching lifesaving and aquatics skills; instruction leading to qualification as an American Red Cross Water Safety Instructor.

### 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: P E 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.

### 300 SPECIAL PROBLEMS IN THE AREA OF PHYSICAL EDUCATION (2-5)

Prerequisite: permission of department chairman.

### 302 KINESIOLOGY (3)

Prerequisite: Zool 241 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.

- 303 PHYSIOLOGY OF MUSCULAR EXERCISE (3)  
Prerequisite: Zool 241. Application of physiological facts to the problems of conditioning; relation to physical activities.
- 305w METHODS AND MATERIALS FOR TEACHING SPORTS (4)  
Prerequisites: P E 302 and professional activities sequences. Preparation for teaching individual and team sports to secondary school girls.
- 306 METHODS AND MATERIALS FOR ELEMENTARY SCHOOL PHYSICAL EDUCATION (3)  
Prerequisite: Psych 352. Purposes and requirements of the program, with emphasis on planning, methods and materials of instruction.
- 308m METHODS AND MATERIALS OF PHYSICAL EDUCATION FOR BOYS (3)  
Prerequisite: completion of activities requirements for majors and minors, or permission. Activities and appropriate methods of instruction for secondary school boys.
- 311 MOVEMENT EXPLORATION AND GYMNASTICS FOR CHILDREN (3)  
Prerequisite: professional activities sequence; prerequisite or concurrent: P E 302. Movement as a basis for game and dance skills; stunts, tumbling, fitness activities, gymnastics for the elementary school.
- 312 GAMES AND SPORTS FOR CHILDREN (3)  
Prerequisite: P E 311. Selected children's games and activities for development of fundamental sports skills.
- 320 METHODS AND MATERIALS FOR TEACHING DANCE (3)  
Prerequisites: P E 120, 122, 125, or equivalent. Teaching modern, folk, social, and square dancing.
- 321 MUSICAL ACCOMPANIMENT AND MOVEMENT (3)  
Prerequisite: P E 226. Music mediums: instrumental, voice, percussion, electronic; music structures and their relationship to movement and dance.
- 322 ELEMENTARY DANCE COMPOSITION (3)  
Prerequisite: P E 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: P E 322. Composition in pre-classic and modern forms.
- 324 THEORY AND PRACTICE OF CONTEMPORARY DANCE (2)  
Prerequisites: P E 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 (2)  
Principles, techniques and practice of officiating in team sports for men.
- 351m TEACHING GYMNASTICS (1)  
Prerequisite: P E 151m. Intermediate performance skills, with opportunity for each student to teach several basic stunts and calisthenics.
- 380m COACHING FOOTBALL (3)  
Theory and appreciation of football, with methods and materials of organization.
- 381m COACHING BASKETBALL (3)
- 382m COACHING BASEBALL (2)
- 383m COACHING TRACK (2)  
Theory of track and field events and organization and administration of a track meet.
- 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.
- 402 BODY MECHANICS AND CORRECTIVE PHYSICAL EDUCATION (3)  
Prerequisites: Zool 241 or equivalent; P E 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)  
Prerequisite: Psych 352; P E 312, 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: P E 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: P E 205 and 305w. Criteria for the selection of activities, the organization of classes, departmental personnel and policies, physical plant and its upkeep, purchase and care of equipment.
- 405 PRINCIPLES OF PHYSICAL EDUCATION (3)  
Prerequisites: P E 205, 306, and 305w or 308m. Scientific and philosophical principles related to physical education, its purposes, scope, and curriculum.
- 406m THE ADMINISTRATION OF ATHLETICS (2)  
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.
- 410m INTRAMURAL SPORTS (3)  
Problems, planning, and content of intramural sports programs in schools and colleges.
- 410w EXTRA-CLASS ACTIVITIES IN PHYSICAL EDUCATION FOR GIRLS (2)  
Intramural programs, tournaments, play days, sports days, and G.A.A. for secondary school. Summers only.
- 424 DANCE PERFORMANCES (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.
- 490 TECHNIQUES FOR EVALUATING PHYSICAL ABILITIES (3)  
Prerequisites: Psych 371 and permission of instructor. Application of measurement theory to physical education; selection and administration of appropriate tests and interpretation of results.
- 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.
- 497h WORKSHOP IN ATHLETIC INJURIES (2)  
Advanced techniques for treating athletic injuries at school and college level, as presented by representatives of the medical and athletic training profession. Summer 1968.
- 497j APPLICATION OF WEIGHT TRAINING TO PHYSICAL EDUCATION AND ATHLETICS (2)  
Resistance exercise combining isometric and isotonic exercise in physical education and athletic programs; theoretical and practical experience. Summer 1968.
- 497k PHYSICAL EDUCATION FOR THE ELEMENTARY SCHOOL (2)  
The use of problem solving and movement exploration techniques in the teaching of games, dance, and gymnastics to elementary school children. Summer 1968.
- 497n OVERVIEW OF ELEMENTARY SCHOOL PHYSICAL EDUCATION (3)  
Prerequisite: teaching experience. New methods and materials; organization, selection of activities, curriculum and scheduling development. Extension 1968.
- 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 or teaching experience. Organization and development of physical fitness programs in the public schools.
- 500 PROBLEMS IN PHYSICAL EDUCATION (2-5)  
For teachers with experience in physical education. Controversial issues in the field; the professional problems pertinent to the individual members of the group.
- 501 SURVEY OF RESEARCH AND 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 241, P E 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)

Design and construction of gymnasiums and other physical education facilities, and the purchase and care of athletic and physical education equipment.

504 CURRICULUM IN PHYSICAL EDUCATION (3)

Physical education programs based on the needs of boys and girls.

505 CURRENT DEVELOPMENTS IN PHYSICAL EDUCATION (3)

Prerequisite: teaching experience. Developments of current significance in the field of physical education, including recreation and athletics.

506 RESEARCH TECHNIQUES IN PHYSICAL EDUCATION (3)

Prerequisites: P E 501, Ed 501. Utilization of laboratory equipment and techniques pertinent to research; design of experiments, conduct of laboratory research, and evaluation of research reports.

## COURSES IN HEALTH EDUCATION

150 CONSUMER HEALTH (1)

Analysis of spurious health practices, consumer protection, health superstitions and evaluation of health advertising.

151 STIMULANTS AND DEPRESSANTS (1)

Pharmacology and addiction and/or habituation of stimulants and depressants.

152 SOCIETY AND SEX (1)

Sociological, psychological, and biological aspects of 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)

Developments in personal and consumer health, mental and emotional health, and family life education.

352 THE FIRST AID INSTRUCTOR (1)

Prerequisites: 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.

450 HEALTH EDUCATION IN THE PUBLIC SCHOOLS (3)

Prerequisite: H Ed 350 or equivalent. Basic principles of health instruction, organization, methods and materials, and school health services.

500 PROBLEMS IN HEALTH EDUCATION (2-5)

For the graduate student concerned with a special problem in the field.

## COURSES IN RECREATION

201 RECREATION LEADERSHIP (2)

Historical and philosophical foundations of leisure and recreation; scope of recreation; leadership principles; professional opportunities in recreation.

250 CAMPING AND OUTDOOR EDUCATION (3)

Organization and program in private, agency and school camps; qualifications and responsibilities of the camp counselor; camping techniques.

301 ACTIVITIES FOR SOCIAL RECREATION (2)

Prerequisite: Rec 201. The use of active and quiet games, music, crafts, dance, and dramatics for socialization of groups.

302 RECREATIONAL ACTIVITIES FOR THE ILL AND HANDICAPPED (3)

Prerequisite: Rec 201. Activities and techniques in working with mentally ill and physically handicapped.

412 ORGANIZATION AND ADMINISTRATION OF SCHOOL AND COMMUNITY RECREATION (3)

Prerequisites: Rec 201, 250. Development of programs for school and community recreation including personnel, finance, facilities, and activities.

450, 451, 452 FIELD WORK IN RECREATION (1-4)

Prerequisites: P E 306 or Rec 201; Rec 412. Practical experience in a community recreation program.

500 PROBLEMS IN RECREATION (2-5)

For experienced recreation leaders; individual study of problems growing out of professional experience.

# PHYSICS

*Professors:* McLeod (Chairman), Lahti, Lindsay . *Associate Professors:* Atneosen, Brown, Rupaal, Veit  
*Assistant Professors:* Davidson, Dittrich, Sprague

## TEACHER EDUCATION

**Major** Secondary  
45 credits plus Supporting Courses

- Physics 231 to meet the general education requirement
- Physics 232, 233, 341, 371, 398 (one credit)
- One course from Physics 401, 402, or 403
- One course from Physics 407, 408, Gen Sci 405
- Physical Science 492
- Electives under departmental advisement, 13 credits
- Supporting courses: 15 credits in mathematics

**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
- Electives, 3 credits
- Supporting courses: 15 credits in mathematics

### **Major Concentration**

Physics-Mathematics 70 credits

128

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 requirements
- 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.

## ARTS AND SCIENCES

**Major** 50 credits plus Supporting Courses

- Physics 231 to meet the general education requirement
- Physics 232, 233, 341, 342, 343, 371, 381, 471, 472
- One course from Physics 401, 402, 403
- One course from Physics 407, 408, Gen Sci 405
- Upper division electives, six credits
- Supporting courses: 32 credits in mathematics, including Math 121, 122, 222, 223, 224, 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

- Two courses from Physics 341, 371, 381
- Electives, 2 credits
- Supporting courses: 18 credits in mathematics including Math 222

### *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, 341, 342, 343, 371, 381, 382, 471, 472 and other upper division electives; Math 222, 223, 270, 301, 302, 325, 331, 332, and 400 level 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.

- Mathematics 121, 122, 222, 223, 224, 270, 301, 325, 331, 332, 425, 426
- 8 credits selected from Math 361, 371 and approved 400 level courses (at least 4 credits in the latter)
- Physics 231, 232, 233, 341, 342, 343, 371, 381, 471, 472
- 11 credits in upper division courses, including Physics

481, 482, 483 or Physics 485, 486, 487

- Supporting courses: 10 credits under advisement

### DEPARTMENTAL HONORS

Physics majors who wish to graduate “with honors” should consult the department chairman for special requirements beyond the general honors courses for all honors students.

### 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 101, 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.

#### 105 INTRODUCTION TO SOLAR SYSTEM ASTRONOMY (3)

Prerequisite: one and one-half years high school algebra or Math 100. The real and apparent motion of stars; the solar system's physical characteristics and theories of origin.

#### 131 PRINCIPLES OF PHYSICS (4)

Prerequisite: 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.
- 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 GEOMETRICAL OPTICS (3)  
Prerequisite or concurrent: Math 222. Reflection and refraction at plane and spherical surfaces; thin and thick lenses, lens aberrations, optical instruments.
- 255 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 and oscillators, four terminal network parameters.
- 300 SPECIAL PROJECTS OR PROBLEMS (1-2)  
Prerequisite: 15 credits in physics and permission of instructor. Projects or independent study under supervision.
- 311 RADIATION BIOPHYSICS (3)  
Prerequisites: Physics 133 or 233 and Math 121 or permission of instructor. Physical and biological effects of penetrating radiations.
- 312 RADIATION BIOPHYSICS LABORATORY (3)  
Prerequisites: Physics 133 or 233; Physics 311 or permission of instructor; Math 270. Techniques of radiation dosimetry and bioassay.
- 321, 322 ATMOSPHERIC 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)  
Prerequisite: one year college physics and Math 222. Interference; introduction to interferometry; Fraunhofer and Fresnel diffraction; polarization.
- 341 ANALYTICAL MECHANICS (4)  
Prerequisites: Physics 233 and Math 222. Vector treatment of the laws of motion; Lagrange's equations.
- 342, 343 ANALYTICAL MECHANICS (3 ea)  
Prerequisites: Physics 341, Math 331 (or concurrent). Hamiltonian mechanics, dynamics of a rigid body, small oscillations.
- 355 INTRODUCTION TO ELECTRONIC CIRCUITS (3)  
Prerequisite: Math 222, Physics 371 or 255 or permission of instructor. R-C and transformer coupled amplifiers, power amplifiers, feed back oscillators, modulation and demodulation.
- 361, 362 THERMODYNAMICS AND STATISTICAL MECHANICS (3 ea)  
Prerequisites: Physics 233 and Math 224 or permission of instructor; Physics 361 and Math 331 prerequisite to Physics 362. Kinetic theory, the laws of thermodynamics, classical statistical mechanics.
- 371 ELECTRICITY AND MAGNETISM (4)  
Prerequisite: 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 INTRODUCTION TO ATOMIC AND NUCLEAR PHYSICS (4)  
Prerequisite: Physics 233 (or 133) and Math 222. Special theory of relativity; quantum properties of waves and particles, X-rays and crystal structure; Rutherford scattering; the Bohr model of the atom, electron spin and complex atoms; natural radioactive decay; detection of nuclear radiation.
- 382 ATOMIC AND NUCLEAR PHYSICS (4)  
Prerequisite: Physics 381. Characteristic X-ray spectra; quantum theory of radiation and of the hydrogen atom; nuclear reactions; artificial radioactivity; theory of alpha, beta, and gamma decay; fission; particle accelerators.
- 398 LABORATORY INSTRUCTION (1 ea quarter)  
Laboratory programs and instructional methods in general physics laboratories. Limited to maximum of three credits.
- 399 SEMINAR IN PHYSICS (1)  
Prerequisite: 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 PHYSICS SENIOR LABORATORY (2)  
Prerequisite or concurrent: Physics 341. Experiments in mechanics.
- 402 PHYSICS SENIOR LABORATORY (2)  
Prerequisite or concurrent: Physics 371, 381. Experimentation in electricity, magnetism, and atomic physics.

- 403 PHYSICS SENIOR LABORATORY (2)  
Prerequisite: Physics 382. Advanced experiments in nuclear reaction physics.
- 407 FOUNDATIONS OF PHYSICS (3)  
Prerequisite: one year college physics. Development of concepts from the Greek period through the eighteenth century.
- 408 FOUNDATIONS OF PHYSICS (3)  
Prerequisite: Physics 407. Development of concepts during the 19th and 20th centuries.
- 431 INTRODUCTION TO SOLID STATE PHYSICS (4)  
Prerequisite: Physics 381, Math 331 (or concurrent). Theoretical and experimental description of mechanical, electrical, and magnetic properties of solids.
- 435 SPECTROSCOPY (3)  
Prerequisite: Physics 335. Advanced topics in optics with emphasis on interferometry and spectroscopy.
- 451 INTRODUCTION TO NUCLEAR STRUCTURE (2)  
Prerequisites: Physics 382, 341, 371. Physical properties of the proton, neutron and deuteron; nuclear spin and statistics; neutron scattering and neutron reactions; introduction to the theory of nuclear forces.
- 455 NUCLEAR ELECTRONICS (3)  
Prerequisite: Physics 355. Pulse, switching and digital circuits; linear amplifiers; pulse height and time analyzers.
- 471, 472 INTRODUCTION TO ELECTROMAGNETIC THEORY (3 ea)  
Prerequisites: Physics 371 and Math 331; Physics 471 prerequisite to Physics 472. Potential theory, Maxwell's field equations, electro-magnetic waves.
- 481, 482, 483 INTRODUCTION TO QUANTUM MECHANICS (3 ea)  
Prerequisite: Physics 343, 371, 381; Math 331, 332; each course in the sequence prerequisite to the next. Wave mechanics, Schroedinger equation, angular momentum, approximation methods.
- 485, 486, 487 INTRODUCTION TO MATHEMATICAL PHYSICS (3 ea)  
Prerequisite: Physics 343, 472; Math 331, 332; each course in the sequence prerequisite to the next. Tensor analysis, series expansion and boundary value problems, linear transforms, spherical harmonics, Lorentz transformations, approximation methods.
- 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 ADVANCED MECHANICS (3 ea)  
Prerequisite: 45 credits in physics including Physics 487; each course prerequisite to the next. Advanced classical mechanics in action angle variables; Hamiltonian-Jacobi theory; small oscillations; continuum mechanics.
- 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.
- 561, 562 PHYSICS OF PLASMAS (3 ea)  
Prerequisite: 45 credits in physics; Physics 561 prerequisite to 562. The physics of fully ionized gases; fusion, gas dynamics, effects of simultaneous electric and magnetic fields, magneto-hydrodynamics, and developments in plasma research.
- 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 483 and 487; 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.
- 591, 592, 593 RELATIVITY THEORY (3)  
Prerequisite: 45 credits in physics including Physics 487. Special relativity mechanics and electrodynamics in Physics 591; design theory of high energy particle accelerators in Physics 592; general relativity theory including planetary motion, electrodynamic formulations, and brief reviews of the status of unified field theories in Physics 593.
- 598 GRADUATE SEMINAR (1-3)
- 599 RESEARCH (3-9)  
Prerequisites: permission of instructor and department chairman. Investigation of an original problem in physics under supervision.

# POLITICAL SCIENCE

*Professors:* Payne, Vernon, Wuest . *Associate Professors:* Clarke (Acting Chairman), Dickson, Hebal  
*Instructors:* Kepl, Ziegler . *Lecturers:* Chard, Kruhlak

## ARTS AND SCIENCES

*Major* 50 credits plus Supporting Courses

- Political Science 101, 250, 270
- Eight or more credits from each of *four* of the following areas:

*Comparative Government:* Political Science 305, 401, 402, 403, 404, 405, 406, 407, 453

*Political Dynamics:* Political Science 340, 345, 440, 442, 450, 453, 455

*Public Administration:* Political Science 253, 320, 345, 420, 421, 422, 423, 424, 425, 428, 453, 455

*Public Law:* Political Science 310, 315, 410, 411, 428

*Political Theory:* Political Science 360, 460, 461, 462, 463, 465

*International Relations:* Political Science 375, 376, 406, 411, 472, 474, 475

History 203, 204 and Econ 201 are recommended as supporting courses.

*Minor* 25 credits

- Political Science 101, 250, 270
- Five credits in each of *two* of the areas listed above

## TEACHER EDUCATION

*Major* Secondary 45 credits

- Political Science 101, 250, 270
- Eight or more credits from each of *three* of the areas listed under the Arts and Sciences major.

*Minor* 25 credits

- Political Science 101, 250, 270
- Five credits from each of *two* areas selected under departmental advisement.

### *Teaching Competence*

Recommendation for teaching competence normally requires completion of the major with a grade average of 2.5 or better. An exception may be made for history majors desiring a combined recommendation appropriate for junior high school. Such students will complete an augmented minor of 33-35 credits.

## 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; Political Science 499; 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.

## GRADUATE STUDY

For a concentration in political science leading to the Master of Arts degree, see *Graduate Bulletin*.

## COURSES IN POLITICAL SCIENCE

- 101 GOVERNMENT IN THE MODERN WORLD (5)  
Special areas of human interest and activity in political science and their relationship to government in the modern world.
- 250 AMERICAN NATIONAL GOVERNMENT (5)  
Principles and institutions of national government; its main functions.
- 253 STATE AND LOCAL GOVERNMENT (5)  
Prerequisite: Pol Sci 250 or permission of instructor. Sub-national levels of government and intergovernmental relations; legislative, executive, and judicial authorities; the electoral process.
- 270 INTERNATIONAL POLITICS (5)  
Prerequisite: Pol Sci 250 or permission of instructor. Basic principles and forces in international relations with emphasis on the nation-state, nationalism, and international order.
- 305 INTRODUCTION TO FOREIGN GOVERNMENTS (5)  
Prerequisite: Pol Sci 101, 250 or permission of instructor. Basic types, institutions, and practices of foreign governments.
- 310 AMERICAN CONSTITUTIONAL LAW (5)  
Prerequisite: Pol Sci 250. Significant Supreme Court decisions interpreting major parts of the Constitution in practice.
- 315 LAW AND SOCIETY (3)  
Prerequisite: Pol Sci 250 or permission of instructor. Jurisprudence, the legal order, sources of law and the judicial process.
- 320 PUBLIC ADMINISTRATION (5)  
Prerequisite: Pol Sci 250, or one course from Soc/Anth 201 or 301 or Psych 201 or 440, or permission of instructor. The conduct of public business with emphasis on the executive branch of government; some treatment of other countries.
- 340 POLITICAL PARTIES AND ELECTIONS (5)  
Prerequisite: Pol Sci 101 and 250, or permission of instructor. Nature and functions of political parties; electoral methods.
- 345 GOVERNMENTAL AND POLITICAL PROBLEMS OF WASHINGTON (3)  
Prerequisite: Pol Sci 250 and 253, or permission of instructor. Governmental and political issues of the state of Washington.
- 360 INTRODUCTION TO POLITICAL THEORY (5)  
Prerequisites: Pol Sci 101 and 250, or permission of instructor. Origin and evolution of major concepts of political theory.
- 375 FOREIGN POLICIES OF MAJOR POWERS (3)  
Prerequisite: Pol Sci 270 or permission of instructor. Foreign policies of major powers other than the United States.
- 376 AMERICAN FOREIGN POLICY (3)  
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.
- 400 SELECTED READINGS AND RESEARCH (2-5)  
Prerequisite: permission of department. Supervised readings and/or research in a selected area of political science.
- 401 GOVERNMENT AND POLITICS OF GREAT BRITAIN (3)  
Prerequisites: Pol Sci 101 or permission of instructor. Analysis of the British system of government.
- 402 GOVERNMENTS AND POLITICS OF WESTERN EUROPE (3)  
Prerequisite: Pol Sci 101 or permission of instructor. Political systems of France, West Germany, Switzerland and/or other countries.
- 403 GOVERNMENT OF THE SOVIET UNION (3)  
Prerequisite: Pol Sci 101 or permission of instructor. The political system of the U.S.S.R. emphasizing constitutional theory and practice, the Communist party, and the position of the individual.
- 404 GOVERNMENTS AND POLITICS OF LATIN AMERICA (3)  
Prerequisite: Pol Sci 101 or permission of instructor.
- 405 THE MIDDLE EAST (3)  
Prerequisite: Pol Sci 101 or permission of instructor. Outstanding political, cultural, and governmental problems of the Middle East.
- 406 GOVERNMENT AND POLITICS OF CANADA (3)  
Prerequisite: Pol Sci 101 or permission of instructor. Canadian government and politics; problems such as federalism and position in the Commonwealth.

- 407 GOVERNMENTS AND POLITICS OF THE FAR EAST (3)  
Prerequisite: Pol Sci 101 or permission of instructor. The political systems of China and Japan, and other selected countries of the Far East.
- 410 THE SUPREME COURT AND CIVIL RIGHTS (3)  
Prerequisite: Pol Sci 250 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 instructor. Origin, principles, and problems.
- 420 NATURAL RESOURCES: ADMINISTRATIVE AND POLICY PROBLEMS (3)  
Prerequisite: Pol Sci 320 or permission of instructor. Problems in forest policy, minerals, water and power, with emphasis on Western United States.
- 421 METROPOLITAN AREA GOVERNMENT (3)  
Prerequisite: one of the following: Pol Sci 101, 250, Soc/Anth 201, Geog 341, permission of instructor. Problems related to the "exploding metropolis," alternative forms of "metro" government, and critical urban problems.
- 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 250 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.
- 425 THE BUDGETARY PROCESS (3)  
Prerequisite: Pol Sci 320 or permission of instructor. Theoretical, political, and administrative aspects of budgeting considered as a policy process.
- 428 THE REGULATORY PROCESS (3)  
Prerequisite: Pol Sci 320 or permission of instructor. Administrative regulation in relation to the political process.
- 440 THE LEGISLATIVE PROCESS (3)  
Prerequisite: Pol Sci 101 and 250 or 253 or 340 or permission of instructor. Interaction of executive, administrators, parties, pressure groups, the press, and public in the legislative process at both national and state levels.
- 442 POLITICAL BEHAVIOR (5)  
Prerequisite: Pol Sci 340 or permission of instructor. Human action in political settings, with emphasis on social class analysis, voting, and legislative behavior.
- 450 PUBLIC OPINION (3)  
Prerequisite: Pol Sci 250 and 340, or permission of instructor. Nature, formation, and role of public opinion; public opinion surveys, pressure groups, and the role of government in the forming of public opinion.
- 453 COMPARATIVE LOCAL GOVERNMENT (3)  
Prerequisite: Pol Sci 253 or 409 or permission of instructor. Structures and functions of local governments in relation to higher levels of government in the United States, Canada, Great Britain, and France.
- 455 COMMUNITY POLITICAL SYSTEMS (3)  
Prerequisite: Pol Sci 253 or permission of instructor. Systems below the state or provincial level, including city, village, county, and rural.
- 460 POLITICAL THEORY: ANCIENT AND MEDIEVAL (3)  
Prerequisite: Gen Ed 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 Ed 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 Ed 123 or Hist 106 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)  
Prerequisite: Hist 203, 204, or equivalent, or Pol Sci 101 and/or 250. 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.
- 472 THE DEVELOPING COUNTRIES (3)  
Prerequisite: Pol Sci 270 or permission of instructor. The newly independent and/or politically and economically underdeveloped nations.



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 INTERNATIONAL RELATIONS IN THE WESTERN HEMISPHERE (3)

Prerequisites: Pol Sci 270 and 404, or permission of instructor. Relations among countries in the Western Hemisphere with emphasis on the United States and Latin America.

496a,b,c HONORS TUTORIAL (2-5 ea)

497a GOVERNMENT AND POLITICS OF SOUTH ASIA (3)

The structure and evolution of political institutions in South Asia; their relation to regional problems. Summer 1968.

499 SENIOR SEMINAR: APPROACHES TO THE STUDY OF POLITICS (3)

Prerequisite: 30 credits in political science, senior standing, permission of department. Methods of studying political phenomena and application of systematic political theory.

*Admission to graduate level courses* requires a minimum background of 25 credits in political science and permission of the department.

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.

520 SEMINAR IN PUBLIC ADMINISTRATION (3)

Organizational theory and practice in public settings; comparative aspects.

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:* Adams, Blood, Budd, Harwood, Kuder, Meade, Meyer (Chairman), Nugent, Ross, Woodring  
*Associate Professors:* Crow, Diers, Elich, Jones, Kintz, MacKay, Mason, Straughan, Thompson, Tyler, Wilkins  
*Assistant Professors:* Carmean, Finneran, Heid, Lippman, Lonner, Panek, Reck, Zohner

## TEACHER EDUCATION

*Major* Elementary

45 credits in addition to professional requirements

☐ Psychology 201, 301, 302

Electives; recommended courses include Psych 313, 400, 402, 407, 423, 440; others may be approved by Departmental advisers

*Minor* 20 credits

Psychology 201  
 15 credits in psychology other than the required professional educational psychology courses; recommended courses include 301, 302

## ARTS AND SCIENCES

*Major* 40 credits plus Supporting Courses

Psychology 201, 301, 302  
 Two courses from Psych 402, 403, 407, 408, 409  
 One course from Psych 421, 422, 423  
 Supporting courses: Philosophy 113, Soc/Anth 201 and one of the following sequences:  
a. Chemistry 121, 122, 251  
b. Chemistry 115, 251, and one course from c,d,e.  
c. Physics 131, 132, 133 or 231, 232, 233  
d. Math 220, 241, 270  
e. Zool 241-243 or 261-262; and one course from Biol 301, 371, Zool 363 or 366

Recommended additional electives: one year of a foreign language, Phil 411, Psych 406, upper division mathematics or science courses.

Students planning master's degree work in psychology should consult the *Graduate Bulletin* for prerequisite courses.

*Minor* 24 credits

Psychology 201, 301  
 Two courses from Psych 302, 313, 320, 352, 402, 403, 407, 408, 409, 413, 440, 473  
(Psych 403, 407, 409 are recommended for biology majors; Psych 320 for economics majors)

## DEPARTMENTAL HONORS

In addition to the general requirements for all honors  
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students, a psychology major who wishes to graduate "with honors," must complete Psychology 401, a comprehensive examination in psychology, and 24 credits in a demonstrated reading knowledge in French, German, or Russian.

## 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 351, 352, 371, 431, 453, 459, 466, 471. 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.
- 301 EXPERIMENTAL PSYCHOLOGY I (5)  
Prerequisite: Psych 201. Introduction to experimental methodology in psychology and statistical treatment of results. Lectures and laboratory.
- 302 EXPERIMENTAL PSYCHOLOGY II (5)  
Prerequisite: Psych 301. 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 philosophic assumptions, historical position, and experimental data considered in evaluating personality theories.
- 320 INDUSTRIAL PSYCHOLOGY (4)  
Prerequisite: Psych 201. Application of psychological principles to industrial problems of personnel selection and appraisal, human relations, marketing, training and engineering psychology.
- 321 PROBLEMS OF CONSUMER PSYCHOLOGY (3)  
Prerequisite: Psychology 201. A study of problems of consumer behavior utilizing psychological research methodologies.
- 351 PRINCIPLES OF HUMAN LEARNING (3)  
Prerequisite: Gen Ed 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)

Prerequisite: 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.

373 ELEMENTARY STATISTICAL INFERENCE (3)

Prerequisite: Math 240 or departmental examination (see department for preparatory study program). Statistical procedures and informed reading or original research. Also offered as Ed 373.

396a,b,c HONORS TUTORIAL (2-5)

400 ADVANCED PSYCHOLOGICAL RESEARCH PROBLEMS (3)

Prerequisite: Psych 302 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)

Psych 301 or 303. Experimental findings, and theoretical interpretations of the biological and psychological aspects of motivation; lectures and laboratory.

403 COMPARATIVE PSYCHOLOGY (5)

Prerequisites: Psych 301 or 303; Biol 101. Phylogenetic comparison of animal behavior, learning, motivation, and sensory processes in selected species of animals; lectures and laboratory.

407 PERCEPTION (5)

Prerequisite: Psych 301 or 303. Sensory processes and stimuli necessary to perception; perceptual theory, classical and contemporary; lectures and laboratory.

408 LEARNING (5)

Prerequisite: Psych 301 or 303. 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.

409 PHYSIOLOGICAL PSYCHOLOGY (5)

Prerequisites: Psych 301 or 303; Zool 248-249. Biological foundations of behavior; lecture and laboratory.

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 301. Psychoses, neuroses, and other application of psychological tests and scaling techniques; for undergraduate credit only.

421 SEMINAR IN HISTORY AND SYSTEMS OF PSYCHOLOGY (3)

Prerequisites: graduate or senior status, Psych 302, and permission of instructor. Historical development of the systematic viewpoints of psychology.

422 SEMINAR IN PSYCHOLOGICAL THEORY (3)

Prerequisites: senior status, Psych 302, 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 302, and permission of instructor. Selected topics which vary from year to year.

431 INTRODUCTION TO GUIDANCE SERVICES (3)

Prerequisite: 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 SOCIAL PSYCHOLOGY (5)

Prerequisites: Psych 201 and 10 credits in psychology or 5 credits in psychology and 10 credits in sociology/anthropology. The human as a social animal.

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.

459 SEMINAR IN EDUCATIONAL PSYCHOLOGY (1)

Prerequisite: successful completion of Independent Study Program.

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.
- 473 ADVANCED STATISTICAL INFERENCE (3)  
Prerequisite: Psych 301. Advanced methods for analysis of research data; advised for students who wish to pursue graduate training in psychology. Also offered as Ed 473.
- 496a,b,c HONORS TUTORIAL (2-5 ea)
- 497k SPECIAL PROBLEMS IN COUNSELING SERVICES (3)  
Prerequisite: permission of instructor. Techniques of study and case histories of applied school psychology problems. Extension 1968.
- 497l PROBLEMS IN COMPARATIVE PSYCHOLOGY (3)  
Prerequisite: permission of instructor. Behavior of the major invertebrates and vertebrates. Spring 1968.
- 497m CROSS-CULTURAL PROBLEMS IN PSYCHOLOGY (3)  
Prerequisite: permission of instructor. Interdisciplinary seminar; behavioral differences rooted in the cultures and specific learnings of societies differing from those of North America.
- 497n ADVANCED HUMAN LEARNING (3)  
Prerequisite: Psych 351 or equivalent. Major concepts of human learning; recent developments in human learning theory as related to the teaching-learning process.
- 500 SPECIAL PROBLEMS (1-3)  
Prerequisite: permission of instructor.
- 501a PRO-SEMINAR: SYSTEMS OF PSYCHOLOGY (2)
- 501b PRO-SEMINAR: PERCEPTION (2)
- 501c PRO-SEMINAR: LEARNING (2)
- 501d PRO-SEMINAR: MOTIVATION (2)
- 501e PRO-SEMINAR: SOCIAL (2)
- 501f PRO-SEMINAR: PERSONALITY (2)
- 511 INSTRUMENTATION FOR PSYCHOLOGICAL RESEARCH (1)  
Typical technological solutions to problems encountered in original research; lecture and laboratory.
- 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.
- 531a,b SUPERVISED PRACTICE IN COUNSELING (3)  
Prerequisite: permission of instructor. Supervised experience with selected cases in a college, school or agency; a—college level, b—public school or community agency.
- 532 PSYCHOLOGICAL CASE WORK SEMINAR (3)  
Prerequisite: Psych 521 (or 578 concurrent). Presentation of actual cases to allow for team interaction among, and interdisciplinary evaluation by a variety of specialists as to procedure, referral, interaction, and follow-up.
- 533 COUNSELING THEORY AND PRACTICE (3)  
Prerequisites: Psych 452, 536, and permission of instructor. Counseling and clinical interview with laboratory opportunity for the development of interviewing skills.
- 536 INTRODUCTION TO COUNSELING PSYCHOLOGY (3)  
Prerequisite: Psych 431 and permission of instructor. Theories of psychological counseling as they relate to philosophical positions, social conditions, personality, and learning theory.
- 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.
- 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.

- 571 INDIVIDUAL APPRAISAL IN COUNSELING (3)  
Prerequisites: Psych 373 or equivalent and Psych 431 and permission of instructor. The collection, evaluation, application, and interpretation of data available to the school counselor.
- 572 INDIVIDUAL INTELLIGENCE TESTS (5)  
Prerequisites: Psych 373 and permission of instructor. Theory and principles underlying the construction of individual intelligence tests; supervised practice in the administration of tests.
- 577 ADVANCED CLINICAL PROCEDURES AND REPORT WRITING (3)  
Prerequisites: Psych 572 and permission of instructor. Clinical appraisal with special attention to value and limitations of personality and interest measures.
- 578 SUPERVISED PRACTICE IN SCHOOL PSYCHOLOGY (3)  
Prerequisites: Psych 577 and permission of instructor. Diagnostic and interpretative work with selected cases under direct supervision.
- 591 PSYCHOLOGY OF OCCUPATIONS (3)  
Prerequisites: Psych 431 and permission of instructor. Sources of occupational materials, theories of career development; applications to vocational counseling.
- 592, 593 DESIGN AND ANALYSIS OF EXPERIMENTS (3 ea)  
Prerequisite: Psych 473; 592 prerequisite to 593. Multidimensional analysis of variance, trend analysis, and analysis of covariance.

- 594 MULTIVARIATE ANALYSIS (3)  
Prerequisite: Psych 413, 473. Topics in correlation theory and application including factor analysis and regression analysis.
- 596a,b,c REVIEW OF PSYCHOLOGICAL APPRAISAL AND TREATMENT (2 ea)  
Prerequisite: permission of instructor.  
596a Survey of Intelligence and Aptitude Tests. Prerequisite: a course in principles of psychological testing. Research and theory related to more widely used individual and group tests.  
596b Survey of the Techniques of Personality Evaluation. Objective and projective personality tests for children and adults.  
596c Survey of Therapeutic Practices and Clinical Procedures. Major systematic approaches to psychotherapy; critical evaluation of use of drugs, shock, psychosurgery, hypnosis and other special techniques.
- 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:* Bosch, Cali (Chairman), Harris . *Assistant Professors:* Drake, Grabert, Thomas . *Instructor:* Clinton . *Lecturers:* Paulus, Tweddell

### TEACHER EDUCATION

*Major* Elementary 45 credits

Soc/Anth 200, 201, 202, 370 or 375

- One course from Soc/Anth 390, 391, 425, 431 or 401  
 One course from Soc/Anth 361, 362, 363, 364, 462  
 Electives under departmental advisement  
 Supporting course: Math 240 or equivalent

(Note: no major is offered in secondary education.)

*Minor* 25 credits

- Soc/Anth 200, 201, 202  
 Electives under departmental advisement

## ARTS AND SCIENCES

*Major* 55 credits

- Soc/Anth 200, 201, 202, 311, 375, 390 or 391
- Electives under departmental advisement
- Supporting courses: Psych 440, Math 240 or equivalent

*Minor—Sociology/Anthropology* 25 credits

- 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.

### 202 PRINCIPLES OF SOCIOLOGY/ANTHROPOLOGY (5)

Prerequisite: Soc/Anth 201 or permission of instructor. Introduction to the analytical study of social phenomena.

### 310 THE RISE OF CIVILIZATIONS (5)

Prerequisites: Soc/Anth 200, 201 or permission of instructor. Village agricultural societies as revealed by archaeology; crystallization of village farming societies into urban civilizations in the Near East, Egypt, India, China and New World parallel developments.

### 311 WORLD DEMOGRAPHY (5)

Prerequisites: Math 240 and Soc/Anth 202, or permission of instructor. Growth, distribution and composition of human population; elementary demographic techniques essential to understanding the components of population change.

### 320 ECONOMIC ORGANIZATION (5)

Prerequisite: Soc/Anth 202 and permission of instructor. 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 permission of instructor. 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 202 or permission of instructor. Political structure in selected areas (and societies) of the world; the relationship between political institutions and other aspects of the social system.

### 351 FAMILY AND KINSHIP ORGANIZATION (5)

Prerequisite: Soc/Anth 202 or permission of instructor. Types of family systems from selected societies, with emphasis upon variation in structure and socio-psychological functions.

### 354 SOCIOLOGY OF DEVIANT BEHAVIOR (5)

Prerequisite: Soc/Anth 202 or permission of instructor. 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 permission of instructor. Ethnographic survey of the peoples and cultures.

### 362 PEOPLES OF EURASIA (5)

Prerequisite: Soc/Anth 201 or permission of instructor. Ethnographic survey of the peoples and cultures.

### 363 PEOPLES OF AFRICA (5)

Prerequisite: Soc/Anth 201 or permission of instructor. Ethnographic survey of the peoples and cultures of Africa south of the Sahara.

### 364 PEOPLES OF THE PACIFIC (5)

Prerequisite: Soc/Anth 201 or permission of instructor. Ethnographic survey of the peoples and cultures of the Pacific area.

### 366 COMMUNITY ORGANIZATION (5)

Prerequisite: Soc/Anth 202. The nature of "community" analyzed in terms of changing demographic, institutional, and interpersonal patterns.

- 370 INTRODUCTION TO RESEARCH METHODS (5)  
Prerequisite: Soc/Anth 202. The nature of scientific theory; the development of social research; the basic methods and techniques of data gathering, processing, and analysis.
- 375 INTERMEDIATE STATISTICS (3)  
Prerequisite: 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.
- 396a,b,c HONORS TUTORIAL (3-5 ea)
- 401 SEMINARS (3)  
Prerequisite: permission of instructor.  
401c Population Problems  
401d Social Interaction and Group Dynamics  
401f Mental Illness  
401g Archaeology of the Northwest  
401n Contemporary Social Issues  
401t Drug Dependence
- 401h HONORS SEMINAR  
Prerequisite: permission of instructor.
- 402 ARCHAEOLOGICAL 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 ARCHAEOLOGICAL ANALYSIS AND INTERPRETATION (3)  
Prerequisite: Soc/Anth 402 or permission of instructor. Archaeological laboratory methods; artifact identification, classification, measurement; map reproduction, soil and feature profiles, use of photographs and other graphic methods.
- 413 POPULATION OF WASHINGTON STATE (3)  
Prerequisite: permission of instructor. Sources, uses, limitations, and statistical analyses of demographic data; fertility, mortality, population and school enrollment projections; a course for administrators, educators, and sociologists.
- 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.
- 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.
- 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.
- 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 202 or permission of instructor. Tribal distributions, social organization, and ecological adjustment with emphasis on the Indians of Western Washington; problems of adjustment to the modern world.
- 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)**  
 Prerequisites: 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--Archaeology; 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.
- 496a,b,c   **HONORS TUTORIAL (3-5 ea)**
- 497d      **INTERACTION PROCESS ON STATE MENTAL  
 HOSPITAL WARDS (5)**  
 Analysis of differences in functioning of two wards at Northern State Hospital. Winter 1968.
- 497e      **SOCIOLOGY/ANTHROPOLOGY FOR THE  
 PUBLIC SCHOOL TEACHER (3)**  
 Relevancy of sociological/anthropological theory to social studies curriculum; discussions of aspects of social processes. Extension 1968.
- 497f      **PEOPLES AND SOCIAL INSTITUTIONS OF  
 SOUTH ASIA (3)**  
 Ethnographic survey of peoples and cultures of South Asian countries. Summer 1968.
- 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 operational design for empirical research.
- 511      **SEMINAR: DEMOGRAPHY (3)**  
 Prerequisites: 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)**  
 Prerequisite: 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:* Brewster (Acting Chairman), Carlile, Schinske . *Associate Professors:* Gregory, Herbold, Napiecinski . *Assistant Professors:* Flanders, Sigler, Webb . *Instructors:* Adams, Catrell, Cornelison, Engdahl, Smith, Wilkinson

## TEACHER EDUCATION

*Major—General Classroom*  
Elementary 45 credits

- Speech 130, 201, 233, 330, 350, 430
- Speech 331 or 433, 355, 357, 361, 373, 484
- Electives under departmental advisement

*Major—Speech Therapist* 45 credits

- One course from Speech 201, 204, 205, 233
- Speech 350, 355, 356, 373, 357, 361, 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.

Satisfactory completion of the above major leads to eligibility for Washington's Provisional Certificate in speech therapy.

The American Speech and Hearing Association recommendation for certification of speech therapists includes, effective in 1970, a minimum of 90 quarter hours preparation. Such preparation would extend into the fifth year or graduate degree program. Consult the department for details.

*Major* Secondary 45 credits

- Speech 130, 201, 202, 205, 233, 236
- Speech 305, 332, 350, 373, 437, 485
- Electives under departmental advisement

*Minor* 25 credits

- Speech 130, 201, 205, 233, 236, 437, 485
- Electives under departmental advisement

## ARTS AND SCIENCES

*Major* 50 credits

- Common Core—Speech 130, 201, 233, 340, 350, 373
- Specialization of 20 credits in one of the following areas, plus six credits in a second area:

### *Theatre*

Required in the 20-hour concentration:

- Speech 236, 332, 424, 425 or 426, 437
- Electives: Speech 230, 231, 232, 237, 238, 320, 330, 331, 333, 334, 336, 338, 421, 422, 430, 433, 438

### *Public Address*

Speech 202, 204, 205, 206, 207, 208, 305, 310, 335, 341, 401, 441, 478, 480, 490.

### *Speech Therapy*

Speech 355, 356, 357, 358, 359, 360, 361, 454, 455, 456, 457, 458, 459, 461, 462, 463.

*Minor* 25 credits

- Speech 130, 201, 233, 340, 350, 373
- Electives under advisement from the above three areas

## GRADUATE STUDY

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

## COURSES IN SPEECH

100 FUNDAMENTALS OF SPEECH (3)  
Functional approach to effective communication; application of principles to practical problems of speech.

105 VOICE AND ARTICULATION IMPROVEMENT (2)  
Prerequisite: permission of department. Laboratory work designed to improve articulation and increase voice proficiency in the classroom, on the stage, and lecture platform, and in everyday life.

130 INTRODUCTION TO THE THEATRE (3)  
Appreciation of the art of theatre, cinema, and television; play analysis, play production, and dramatic criticism.

200 SPEECH ANALYSIS (3)  
Prerequisite: Speech 100. Analytical study of the speech process enabling the student to improve his own speech and to deal more intelligently with the speech problems of others.

201 EXTEMPORE SPEAKING (3)  
Theory and practice in an extemporaneous mode of speaking.

202 PARLIAMENTARY LAW (1)  
Parliamentary principles and procedures.

204 DISCUSSION AND CONFERENCE (3)  
Prerequisite: Speech 100. Fundamentals of effective participation in small problem solving groups with topics of current interest.

205 ARGUMENTATION AND DEBATE (3)  
Prerequisite: Speech 100. Application of principles of reasoned discourse to public discussion of controversial issues; the theory of debate.

206, 207, 208 INTERCOLLEGIATE FORENSICS (1-3 ea)  
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 THE ACTED DRAMA (1-3 ea)  
Admission by tryout only. Participation in plays offered for public production. Three credits may be allowed for major work, with 1 or 2 credits for minor parts or responsibilities; a maximum total of 6 credits may be earned in these courses

233 ORAL INTERPRETATION (3)  
Practice in reading prose, poetry, and drama to determine the logical and emotional meaning of a selection and to project that meaning to listeners.

236 STAGECRAFT (3)  
Prerequisite: Speech 130. Theory, practice, and organization of planning, drafting, construction, and rigging of scenery; technical analysis and laboratory work on current productions.

237 STAGE LIGHTING (3)  
Prerequisite: Speech 236. Technical and artistic study of light and color as they affect other theatre arts and contribute to artistic design; laboratory work in production.

238 STAGE MAKE-UP (1)  
Theory and practice in the actual application of make-up for students working in activities involving stage production.

301 SPEECH FOR THE TEACHER (3)  
Open to teacher education students only. Theory and practice, when applicable, in discussion, oral interpretation, public speaking, speech science, theatre.

305 PERSUASION (3)  
Prerequisite: at least one 200 level course in public address. The principles that influence the belief and action of audiences; application of these principles.

310 ORAL-GRAPHIC COMMUNICATION (2)  
Prerequisite: Speech 100. Learning to coordinate oral and graphic communication techniques by presenting speeches involving several types of visual materials.

320 SHAKESPEARE (5)  
Survey of principal plays. Also offered as English 343.

330 INTRODUCTION TO CHILD DRAMA (3)  
Prerequisite: Speech 130. 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. 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 BEGINNING ACTING (3)  
Prerequisite: Speech 130 or permission of instructor. Fundamentals of acting; emphasis on improvisation, pantomime, and basic stage movement.

- 333 INTERMEDIATE ACTING (3)  
Prerequisite: Speech 332. Major exercise in body and voice applied to the realistic convention of acting.
- 334 ADVANCED ACTING (3)  
Prerequisite: Speech 333. Acting of period plays—classic, commedia, Elizabethan, Restoration, 18th century.
- 335 ADVANCED ORAL INTERPRETATION (3)  
Prerequisite: Speech 233. Advanced techniques in oral reading; laboratory work in Readers Theatre.
- 336 DESIGN FOR THE STAGE (3)  
Prerequisite: Speech 236. Design for modern theatre with emphasis on interpretation of the play through design; practical design and techniques.
- 338 COSTUMING (3)  
The history of costume and its adaptation to the needs and limitations of the stage; laboratory work on dramatic production.
- 340 INTRODUCTION TO MASS COMMUNICATION MEDIA (3)  
Development of mass media; their role in society; freedom of information; laws of libel; the communication process; audiences.
- 341 BROADCAST SPEECH (3)  
Prerequisite: Speech 340 or permission of instructor. Laboratory practice before the microphone and camera; applying the methods of oral communications to the broadcast media.
- 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 (3)  
The speech and hearing mechanisms and the physical aspects of speech.
- 355 INTRODUCTION TO SPEECH CORRECTION (3)  
Survey of speech disorders; identification, classification, and the fundamentals of therapy.
- 356 ARTICULATION AND VOICE DISORDERS (3)  
Prerequisite: Speech 355. Symptomatology etiology, and therapy for voice and articulation disorders.
- 357 OBSERVATION OF CLINICAL PRACTICE (1)  
Prerequisite: Speech 355 or concurrent. Directed observation and evaluation of the methods, materials, and techniques used in treating speech and hearing cases.
- 358 CLINICAL PRACTICE IN SPEECH THERAPY (3)  
Prerequisites: Speech 350, 355, 356, 357, 361, 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 DEVELOPMENT (3)  
Prerequisites: Speech 355, 357. Overview of diagnosis and treatment of language impaired children, emphasizing clinical implications of motor, visual, and perceptual areas, as well as normal language development.
- 373 PHONETICS (3)  
Training in recognition and production of sounds of spoken English through use of the International Phonetic Alphabet.
- 400 SPECIAL PROBLEMS (1-3)  
Prerequisite: permission of instructor. Investigation of special problems in the fields of speech.
- 401 SPEECH WRITING (3)  
Prerequisite: Speech 201. Manuscript preparation for selected audiences; theory and practice.
- 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; Restoration and eighteenth century; from the late nineteenth century to World War II. (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.
- 427 AMERICAN DRAMA AND THEATRE: 1750-1890 (3)  
Development of native theatre traced with reference to well-known actors; stock and touring companies, frontier theatres, plays, and playwrights.

430 CREATIVE DRAMATICS (3)

Prerequisite: Speech 330. Developing original dramatizations with children; the observation of children's classes in creative dramatics; story selections, story telling, and story dramatization.

433 CHILDREN'S THEATRE (3)

Prerequisite: Speech 330. Plays for children; play selection, play direction, and play production.

437 PLAY DIRECTION (3)

Prerequisites: Speech 236, 332. Theory and practice of stage direction, including play selection, casting, and blocking.

438 ADVANCED PLAY DIRECTION (3)

Prerequisite: Speech 437. Continuation of Speech 437, with special emphasis on working with the actor.

441 PRODUCING AND DIRECTING THE BROADCAST PROGRAM (3)

Prerequisite: Speech 341 or permission of instructor. Program production and directing for radio and television with emphasis on educational broadcasting.

454 DISORDERS OF RHYTHM (3)

Prerequisites: Speech 355 and 357. Stuttering, cluttering, and related disorders.

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.

457, 458, 459 ADVANCED CLINICAL PRACTICE IN SPEECH THERAPY (2 ea)

Prerequisites: Speech 360. Supervised clinical practice dealing with more complex cases.

461 INTRODUCTION TO HEARING (3)

Prerequisites: Speech 355, 356, 373. Structure and functioning of the auditory mechanism, emphasizing the psycho-physics of audition; symptomatology and pathology of hearing disorders.

462 AUDIOMETRIC TESTING (3)

Prerequisite: Speech 461. Determining types and kinds of hearing loss; practice in testing the hearing function and interpreting the results.

463 HEARING REHABILITATION (3)

Prerequisite: Speech 461. Principles, procedures, and techniques of auditory training, speech conservation, speech reading, and language development for the aurally handicapped.

470 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.

478 SEMANTICS (3)

Prerequisite: senior or graduate status. Functions of language; ways in which language is used; its relationship to thought and action.

480 THE HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS (3)

Prerequisite: some background in American history. Principal speakers from Jonathan Edwards to the present day; their relationship to American political, social, and intellectual life.

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.

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 CLASSICAL RHETORIC (3)

Principles of rhetoric proposed by Aristotle, Quintilian, and Cicero, and the relationship of those principles to modern speech making.

500 SPECIAL PROBLEMS (1-3)

Prerequisite: permission of instructor. For advanced students who wish to investigate special problems.

505 SEMINAR IN PERSUASION AND ARGUMENTATION (3)

Prerequisite: undergraduate major in speech, or permission. Evaluation of experimental research.

530 SEMINAR IN PLAY PRODUCTION (3)  
Prerequisite: 12 credits in theatre courses, or permission of instructor. Synthesis and application of the principles of theatre arts in selection and presentation of major dramatic productions for school, college, or community.

531 SEMINAR IN DRAMATIC THEORY AND CRITICISM (3)  
Prerequisite: undergraduate major in speech, or permission of instructor. Evaluating concepts, principles, and issues dominant in main periods of dramaturgical thought.

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.

551 SEMINAR IN SPEECH DISORDERS: THEORY AND THERAPY (3)  
Prerequisites: 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 DIAGNOSTIC METHODS IN SPEECH THERAPY (3)  
Prerequisites: 15 credits in speech and hearing therapy. Materials, procedures, techniques and instruments used in diagnosing speech disorders.

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.

562 SEMINAR IN HEARING DISORDERS: THEORY AND THERAPY (3)  
Prerequisites: experience as speech and/or hearing therapist and permission of instructor. Detailed study and research in the area 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.

## TECHNOLOGY

*Professor:* Schwalm . *Associate Professors:* Channer, Olsen, Porter (Chairman) . *Assistant Professors:* Black, Fowler, Hill, Jasnosz, Moon, Wood

### TEACHER EDUCATION (Industrial Arts)

*Major* Secondary 46 credits

Industrial Arts majors will take Physics 131 to satisfy the general education physics requirement.

Technology 101, 210, 214, 491, 493

17 credits from Tech 223, 231, 240, 270, 280, 333

Electives under advisement from one or two of the following technologies:

a. Graphic Communications Technology (industrial graphics, graphic arts, photography).

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 101, 210, 214, 491, 493
- 17 credits from Tech 223, 231, 240, 270, 280, 333
- Physics 131 plus a minimum of 15 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 Econ 334, 370, 375, 476; Math 220 (or 122), 240, 270; Physics 132, 133
- Technology electives under departmental advisement

*Minor* 25 credits

Courses to be selected under departmental advisement.

## ARTS AND SCIENCES (Industrial Technology)

### BACHELOR OF ARTS DEGREE

*Major* 50 credits plus supporting courses

- Technology 210, 214, 223, 231, 240, 270, 280
- 25 upper division credits in technology including a minimum of 20 credits in one of the following technologies:
  - a. Graphic Communications Technology (industrial graphics, graphic arts, photography).
  - b. Materials and Processes Technology (woods, metals, plastics).
  - c. Mechanical and Electrical Technology (electricity, electronics, power mechanics).
  - d. Industrial Design
- Supporting Courses: Chem 115, Physics 131, Math 220 (or 121), 270, Econ 201, 325

### BACHELOR OF SCIENCE DEGREE

*Major Concentration* 110 credits  
(Satisfies both a major and a minor.)

- Technology 210, 214, 223, 231, 240, 270, 280
- 46 upper division credits in Technology, including a minimum of 20 credits in one of the following technologies:
  - a. Graphic Communications Technology (industrial graphics, graphic arts, photography).
  - b. Materials and Processes Technology (woods, metals, plastics).
  - c. Mechanical and Electrical Technology (electricity, electronics, power mechanics).
  - d. Industrial Design
- Supporting Courses: Chem 115 and 251 (or 121, 122, 123); Physics 131; Math 220 or 122, 240, 270; Econ 201, 202, 325

### GRADUATE STUDY

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

### COURSES IN TECHNOLOGY

- 101 ORIENTATION TO INDUSTRIAL ARTS TECHNOLOGY (2)  
The areas of technology, program of studies, and career opportunities.
- 201 WEAVING DESIGN (3)  
Weaving design taught through the use of a variety of looms and materials.
- 210 INDUSTRIAL GRAPHICS (3)  
Experiences 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.
- 212 **DESCRIPTIVE GEOMETRY (3)**  
Prerequisite: Tech 211. Theory and problems with practical application and the projection of points, lines, surfaces, and solids.
- 214 **FUNDAMENTALS OF PRODUCT DESIGN (3)**  
Basic concepts in design and involvement in the design process.
- 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.
- 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)**  
Techniques and methods of the graphic arts; their relation to more effective visual communication: survey of the visual communication field.
- 270 **APPLIED ELECTRICITY (3)**  
Theory and practice in electricity; projects and related studies involving the principles of electricity, electrical construction, repair, and maintenance.
- 280 **POWER MECHANICS (3)**  
Historical development of major power sources; theory, design factors, practice with pneumatics, refrigeration, heat engines.
- 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.
- 304 **JEWELRY DESIGN (3)**  
Design and construction of jewelry in various metals with emphasis on silver; the setting of stones. Also offered as Art 350.
- 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.
- 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)**  
The materials, products and processes of the plastics industry.
- 340 **GENERAL GRAPHIC ARTS I (3)**  
Prerequisite: 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.

- 342 GRAPHIC ARTS FOR ART MAJOR (3)  
Prerequisite: permission of instructor. Technical processes for preparation and reproduction of graphic material.
- 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.
- 360 GENERAL PHOTOGRAPHY I (3)  
Function, principles, and application of photography in visual communication.
- 361 GENERAL PHOTOGRAPHY II (3)  
Prerequisite: Tech 360 or permission of instructor. Application of theory and techniques to advanced projects providing a basic knowledge of commercial and industrial photography.
- 370 ELECTRON TUBE CIRCUITRY (4)  
Prerequisite: Tech 270 or Phys 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.
- 381 ADVANCED POWER MECHANICS (5)  
Prerequisite: Tech 280 or permission of instructor. Efficiency determinants, power measurement and practical application of hydraulic and fluidic theory; operation and control of internal combustion engines.
- 382 AUTOMOTIVE ELECTRICITY (2)  
Prerequisite: Tech 270 or 280 or permission of instructor. Repair and maintenance of the electrical components of the automobile and other small gasoline engines, with emphasis on understanding basic principles of operation.
- 384 MECHANICS OF MATERIALS (3)  
Study and experimentation in stress, strain, torsion, shear-blending, pure bending, plane stress, and design of members.
- 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 industrial arts 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 (3)  
Prerequisite: Tech 210 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.
- 419 DIRECTED RESEARCH IN DRAFTING (1-3)  
Prerequisite Tech 211 or permission of instructor. Research problem in drafting conducted under supervision.
- 420 PHYSICAL METALLURGY (3)  
Prerequisite: Chem 115, Math 220, and Tech 223, or permission of instructor. Metals and alloys; their physical properties, phase diagrams, transformations, hot and cold working, heat treatments, control of micro-structure; and relation of physical properties to micro-structure.
- 421 FERROUS METALLURGY (3)  
Prerequisite: Tech 420 or permission of instructor. The metal iron and its alloys.
- 422 NON-FERROUS METALS (3)  
Prerequisite: Tech 420 or permission of instructor. The non-ferrous metals and their alloys.
- 425 MATERIALS SCIENCE (3)  
Prerequisites: Tech 223, Math 220, Chem 115. Properties and utilization of metals and non-metals. Relationship between properties of interest and fundamental atomic arrangements. Systematic survey of the engineering materials.
- 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.



- 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)  
Prerequisite: Tech 341 and 361, 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)  
Prerequisites: 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.
- 469 DIRECTED RESEARCH IN PHOTOGRAPHY (1-3)  
Prerequisites: Tech 360, 361, 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)  
Prerequisites: Tech 270, 370, 371, or permission of instructor. Advanced study in problems chosen and conducted under supervision.

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DRIVER EDUCATION: Tech 481, 482, 483, 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 experiences.
- \*483 DIRECTED RESEARCH IN DRIVER AND TRAFFIC SAFETY EDUCATION (1-3)  
A special problem in driver and traffic safety.

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- 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; prerequisite to directed teaching in industrial arts.
- 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)  
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.

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\*Not applicable to undergraduate or graduate requirements in Technology.

496 ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL EDUCATION (3)

Interrelationships of industrial arts, industrial-vocational education, adult education, technical education and apprentice training.

497a DESIGN FOR INDUSTRIAL ARTS TEACHERS (3)

Prerequisite: one year teaching experience, IA undergraduate major. Design concepts and practices and their integration into the teaching of industrial arts. Summer 1968.

497b CONCEPTS IN VISUAL COMMUNICATION (5)

The tools, techniques, and functions of a total system of communication media; interpretation and analysis of visual communication materials through creation, development, and presentation of ideas utilizing various media.

540 GRAPHIC ARTS TECHNOLOGY (3)

Prerequisite: undergraduate concentration in graphic arts. The technological changes in the graphic arts 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.

544 SEMINAR: CURRENT GRAPHIC ARTS TOPICS (3)

Prerequisite: undergraduate concentration in graphic arts. Research and discussion concerning pertinent problems in the graphic arts 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

Several study programs are offered by cooperating departments. These programs include various majors and minors shared by more than one department. In some instances courses are listed by interdepartmental designations. Courses and concentrations are listed in this section for the following programs:

152

General Education  
General Science  
Geophysics  
Honors  
Journalism  
Linguistics

Physical Science  
Science Education  
Social Studies Education  
Urban and Regional  
Planning  
VICOED

## GENERAL EDUCATION

Each candidate for the Bachelor of Arts and the Bachelor of Arts in Education degree is required to complete General Education courses through the various options outlined on pages 38-39.

English 101 and Speech 100 are to be completed in the student's first year. The remaining courses are to be included as study programs prescribed, generally during the first two years. After satisfying all 100 level General Education requirements, a student must take an additional 45 credits before graduation. Transfer students admitted with senior status must complete all 100 level General Education requirements before the final quarter in residence.

Some General Education courses are given as departmental offerings. Descriptions of these courses are included in the respective departmental sections. Inter-departmental courses are listed under the General Education titles as below:

### 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 ECONOMIC 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 SURVEY OF 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.

## GENERAL SCIENCE

### *Major Elementary* 45 credits

Physics 131, 105 and/or Geog 331

Geology 211, 311

3 to 8 credits from: Biol 301, 371, Botany 252, Zool 243, 261, 262, or one of the field courses: Biol 240, Botany 253, or Zool 263

Electives under advisement,\* with a minimum of 11 credits (including the above) in each of the science fields: physical, biological, geological.

### *Major Concentration* 70 credits

This concentration satisfies both the major and the minor for junior high school teachers.

Physical Science 25 credits under advisement including Phys Sci 492 and Physics 131, 132, 133 or equivalent.

Biology and Geology 25 credits in one field and 15 credits in the other; courses are to be selected under departmental advisement\* and must include Biology 493 or Geology 390.

Electives under advisement to bring the total to 70 credits

## 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.

\*Dr. W. A. Brown of the Physics Department is the adviser for this major.

## GEOPHYSICS

### *Major Concentration* 110 credits

This Arts and Sciences concentration, appropriate for those planning to enter graduate study in geophysics, satisfies both a major and a minor.

- Math 122, 222, 223, 224, 331
- Geol 211, 212, 306, 307, 418, 420, 452, 453
- Physics 231, 232, 233, 341, 371, 381
- Chemistry 121, 122, 123
- 16 credits under advisement from geology, physics, and chemistry.

For advisement in this concentration, consult the departments of Geology or Physics.

## 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 completed at least 20 credits of honors courses; d. have written a senior thesis. (Rare 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. The following departments offer honors work: Art, Biology, Chemistry, Economics, Education, English, Foreign Languages, Geography, Geology, History, Mathematics, Music, Philosophy, Physics, Political Science, Psychology, Sociology-Anthropology.

## HONORS COURSES

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)

## JOURNALISM

### *Minor* 24 credits

(Teacher Education or Arts and Sciences)

- Journalism 104, 240, 304, 204 or 405
- Six credits in Newspaper Staff courses (111, etc.)
- Six credits from: Journ 204 or 405 (if not used above), 400, 406; English 302, 303, Speech 340, 341, Tech 360.

## COURSES IN JOURNALISM

- 104 NEWSWRITING (3)  
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 (1 ea)  
Prerequisite: Journ 104 or permission of instructor. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.
- 204 COPY EDITING (3)  
Prerequisite: Journ 104 or permission of instructor. Newspaper copy desk operations: editing, headline writing; dummyming; page make-up; editorial writing.

211, 212, 213 NEWSPAPER STAFF (1 ea)

Prerequisite: Journ 104 or permission of instructor. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.

240 HISTORY AND LAW OF THE PRESS (3)

Historical and theoretical evaluation of the press correlated with social, economic, and political trends; constitutional guarantees, libel, contempt, privacy; other restrictions.

304 ADVANCED NEWSWRITING (3)

Prerequisite: Journ 104. Interviewing, news coverage, including campus sources, and standard community news sources, with emphasis on social agencies; writing for newspapers.

311, 312, 313 NEWSPAPER STAFF (1 ea)

Prerequisite: Journ 104 or permission of instructor. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.

400 SPECIAL PROBLEMS IN JOURNALISM (1-3)

Individual studies and projects exploring specialized aspects of journalism.

405 CURRENT PROBLEMS (3)

Prerequisite: Journ 240 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.

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 (1 ea)

Prerequisite: Journ 104 or permission of instructor. Participation on the staff of the college newspaper; critiques in news reporting, writing, editing and make-up.

## 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 200, 201, 301, 302, 303

*Additional work* according to department chosen:

□ English (Arts and Sciences) add English 391, 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 Sociology-Anthropology 488 and 5 additional credits selected under departmental advisement.

Advisement and approval of programs should be sought from the department concerned.

## COURSES IN LINGUISTICS

200 INTRODUCTION TO LINGUISTIC SCIENCE (3)

Survey of linguistic method and theory. The nature of language and the basic principles of the phoneme, morpheme, and immediate constituent analysis.

201 METHODS IN COMPARATIVE LINGUISTICS (3)

Prerequisite: Linguistics 200. Principles of language typology, linguistic geography, comparative methods, and historical reconstruction.

301 PHONEMICS (3)

Prerequisite: Linguistics 200. Theory, methods, and problems of phonemic analysis and description.

302 MORPHEMICS (3)

Prerequisite: Linguistics 200. Theory, methods, and problems of morphemic analysis and description.

303 SYNTAX AND GRAMMATICAL THEORY (3)

Prerequisite: Linguistics 200. Comparative survey of modern theories of grammar with special reference to syntax.

## PHYSICAL SCIENCE

*Major* Secondary 45 credits

- General Science 405
- 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 these interdepartmental concentrations, Dr. W. A. Brown of the Physics Department is consulting adviser.

### COURSES IN PHYSICAL SCIENCE

#### 382 PHYSICAL SCIENCE FOR THE ELEMENTARY SCHOOL (3)

Prerequisite: science general education requirements or equivalent. Use of experiments, demonstrations, and reading to achieve selected objectives in teaching.

#### 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.

## SCIENCE EDUCATION

There are no concentrations in this category.

Questions relating to these courses should be directed to Dr. W. A. Brown of the Physics Department, Coordinator of Science Education.

Science Education students interested in a course in the analysis of teaching, see Education 441.

### COURSES IN SCIENCE EDUCATION

#### 380 SCIENCE FOR THE ELEMENTARY SCHOOL (5)

Prerequisite: general education requirements in science and mathematics. Selected generalizations and processes in science adaptable to the elementary school; classroom-laboratory study of "new" curricula with observation and participation in a clinical situation.

#### 480 SPECIAL PROJECTS IN SCIENCE FOR THE ELEMENTARY SCHOOL (2-5)

Prerequisites: Biol 101 and one science course for the elementary school, or teaching experience; permission of instructor.

#### 490 SPECIAL PROJECTS IN SCIENCE TEACHING IN THE JUNIOR AND SENIOR HIGH SCHOOL (2-5)

Prerequisites: Phys Sci 492 or Biol 493; permission of instructor.

#### 497a INTEGRATION OF ELEMENTARY MATHEMATICS AND SCIENCE COURSES (3)

Knowledge and methodology for presenting an integrated curriculum in mathematics and science to primary children; emphasis on the inquiry method.

#### 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.

#### 580 SPECIAL PROBLEMS IN SCIENCE TEACHING IN THE ELEMENTARY SCHOOL (2-5)

Prerequisites: teaching experience and permission of instructor. Problems concerning content, utilization of community resources, materials of the environment, development of special areas for instruction, integration with other activities in the school program, and organization of courses of study.

#### 582 IMPROVEMENT OF SCIENCE INSTRUCTION IN THE ELEMENTARY SCHOOL (2-5)

Developing science programs for a particular school system and reorganizing science instruction.

#### 590 SPECIAL PROJECTS IN SCIENCE TEACHING IN THE JUNIOR AND SENIOR HIGH SCHOOL (2-5)

Prerequisites: permission of instructor and teaching experience.

#### 592 IMPROVEMENT OF SCIENCE INSTRUCTION IN THE JUNIOR AND SENIOR HIGH SCHOOL (2-5)

Developing a science program to meet the needs and circumstances of a specific school situation.

## SOCIAL STUDIES EDUCATION

For advisement or approval of these majors, students should consult the chairman of the Department of History.

**Major** Junior High School 45 credits

- Geography 201
- 5 credits from Geog 311, 313, 314, 315, 316
- History 203 or 204
- Sociology-Anthropology 201
- Social Studies Education 426
- Political Science 250 or Economics 201
- Electives under advisement: 17 credits concentrated in one field: geography, history, political science, or sociology-anthropology.

**Major** Elementary 45 credits

- History 203, 204; Geography 201, 311
- Sociology-Anthropology 201
- Political Science 250 or Economics 201
- Electives 15 credits under advisement in one of the following four fields: geography, history, political science, or sociology-anthropology.

**Teaching Competence**

Recommendation for teaching competence in social studies requires completion of the major with a grade average of 2.0 or better.

**COURSES**

425 SOCIAL STUDIES FOR THE ELEMENTARY SCHOOL (3)

Prerequisites: Ed 301, Psych 352. The incorporation of social science concepts in the social studies program.

426 SOCIAL STUDIES FOR THE SECONDARY SCHOOL (3)

Choice and adaptation of materials of instruction to the junior and senior high school level.

497b CHINA PAST AND PRESENT (3)

Essential elements of traditional Chinese civilization; the history of China from mid-17th century to the present.

497c PROBLEMS IN AN INDUSTRIAL SOCIETY (3)

Specific problems that concern an industrial society; primarily for elementary and secondary teachers of social studies. Extension 1968.

**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 the Geography Department is essential.

- Economics 201, 202, 482
- English 202
- Geography 201, 341, 351, 430
- Mathematics 240 or 341, 342
- Political Science 250, 253, 421
- Sociology 202, 366, 413
- Technology 210, 313
- Economics 375 or Sociology 375
- Geography 311 or 401
- Geography 421 or Political Science 420
- Geography 454 or 480 or 490
- Electives from the alternate requirements above or the following to complete 105 credits; Biology 447; Economics 341, 408, 410, 415; English 302; Geography 207, 331, 353, 407, 408, 422, 440, 452, 453; History 466; Home Economics 175, 370; Mathematics 220, 270; 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 econ, geography, political science, or sociology/anthropology.

**VISUAL COMMUNICATION EDUCATION**

Under the sponsorship of the Ford Foundation, Western Washington State College is undertaking two interdisciplinary pilot programs in Visual Communication Education. Cooperating departments are: Art, Chemistry, Economics and Business, English, Industrial Arts, Physics, Psychology, Sociology-Anthropology, and Speech. Students interested in enrolling in these programs should confer with the Director at an early date.

## FOUR-YEAR PILOT TEACHER EDUCATION PROGRAM

(Admission by approval of the Director of the VICOED Project.)

This program leads to the Bachelor of Arts in Education degree and a provisional teaching certificate. It is designed to prepare teachers competent to instruct in the visual communication area in the high school and the community college. The program includes: (1) the General Education requirements outlined on pages ~~38-39~~; (2) the professional education sequence outlined on page 40 ; (3) the following concentration to satisfy the major-minor requirements.

- Art 101, 102, 195, 371
- Chemistry 208, 209
- Economics 338
- English 202 or Journalism 104
- Mathematics 122
- Physics 131
- Psychology 320
- Sociology-Anthropology 431
- Speech 310, 340
- Technology 240, 340, 341, 360, 361, 379, 447, 448, 493

See departmental sections of the Catalog for descriptions of these courses.

## TWO-YEAR PILOT TECHNOLOGY PROGRAM

(Admission by approval of the Director of the VICOED Project.)

This program is designed to prepare the student to enter industry upon completion of the sequence or to transfer to the teacher education program without undue loss of time or credit.

- Art 101, 102, 371
- Chemistry 115
- Economics 251, 335, 338
- English 101, 202 or Journalism 104
- General Education 105
- Mathematics 121, 122
- Physical Education activities, three quarters
- Physics 131
- Psychology 320
- Speech 100, 310, 340
- Technology 210, 240, 340, 360, 361, 379, 447
- 9-15 credits in one of these areas: industrial graphics, graphic design, graphic arts, photography, professional writing.



# COLLEGE PERSONNEL

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## COLLEGE ADMINISTRATION

CHARLES J. FLORA, Ed.D.  
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Dean of Graduate School

HERBERT C. TAYLOR, Ph.D.  
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Project Fiscal Officer

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Chief Engineer in Educational Media

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Director of Computer Center

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Director of Student Activities and the Viking Union.

SAMUEL P. KELLY, Ph.D.  
Director of Honors Program

DONALD R. KJARSGAARD, Ph.D.  
Assistant to the Academic Dean and Coordinator of the  
Summer Session

KERMIT KNUDTZON, B.A.  
Controller

F. STEPHEN KURTZ  
Publications Officer

LOUIS T. LALLAS, M.Ed.  
Assistant Registrar

ROBERT LAWYER, Ph.D.  
Director of the Library

HERBERT S. LITZINGER, B.S.  
Director of the Physical Plant

C. W. MC DONALD, M.A.  
Dean of Men

THEODORE G. MC QUARY, LL.B.  
Development Officer

CALVIN A. MATHEWS, M.A.  
Associate Registrar and Coordinator of College Relations

GERSON F. MILLER, M.A.  
Adviser to Student Publications

JOHN MUMMA, M.D.  
College Physician

JOSEPH P. NIAL, B.S.  
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B. EUGENE OMEY, M.A.  
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Assistant Director of Continuing Studies

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Dean of Women

FRANK N. PUNCHES, M.A.  
Director of Educational Placement

RICHARD C. RANKIN, B.S.  
Director of Arts and Sciences Placement

HAL RIEHLE, M.A.  
Director of Educational Media

ERNEST SAMS  
Financial Planning Officer

ROBERT W. THIRSK, B.A. in Ed.  
Assistant Director of Admissions

## EMERITUS FACULTY

WILLIAM WADE HAGGARD  
President Emeritus of the College. B.A., Maryville College;  
M.A., University of Michigan; Ph.D., University of Chicago;  
Ed.D. (Honorary), Maryville College.

EDWARD J. ARNTZEN  
Professor Emeritus of History. B.A., University of  
Washington; M.A., Columbia University; University of  
Washington.

WILLIAM BENDER  
Professor Emeritus of Physics. B.A., M.S., University of  
Colorado; Ph.D., Yale University

MAY LOVEGREN BETTMAN  
Instructor Emeritus in Commercial Studies. Vashon College;  
Washington State University; Western Michigan College of  
Education, Kalamazoo; Western Washington State College.

MIRA E. BOOTH  
Assistant Professor Emeritus of Music. B.A., University of  
Washington; M.A., Teachers College, Columbia University;  
University of Southern California.

**HAZEL BREAKEY**

Assistant Professor Emeritus of Art. B.S., graduate work, Teachers College, Columbia University; graduate of California College of Arts and Crafts, Oakland; Carnegie Scholarship University of Oregon.

**DOROTHY D. BUTTON**

Assistant Professor Emeritus of Education. B.A., University of California; University of Washington; M.Ed., Western Washington State College.

**KATHERINE M. CASANOVA**

Associate Professor Emeritus of Education. B.S., M.A., Teachers College, Columbia University.

**LINDA COUNTRYMAN**

Associate Professor Emeritus of Home Economics. B.S., Milwaukee-Downer College; M.A., Teachers College, Columbia University; University of Chicago.

**NORA B. CUMMINS**

Professor Emeritus of Political Science and History. B.A., University of Minnesota; M.A., Columbia University; Northern Normal and Industrial School.

**IRENE ELLIOTT**

Assistant Professor Emeritus of Education. B.S., M.A., Columbia University.

**GEORGIA P. GRAGG**

Instructor Emeritus of Commercial Studies and Handwriting. Western Washington State College; A.N., Palmer School of Penmanship.

**IRWIN A. HAMMER**

Professor Emeritus of Education. University of Toulouse, Toulouse, France; B.A., Park College; M.A., University of Colorado; University of Minnesota; University of Chicago; Ed.D., Teachers College, Columbia University.

**RAYMOND F. HAWK**

Professor Emeritus of Education. B.A., DePauw University; M.A., Stanford University; Ph.D., Washington State University.

**LUCY KANGLEY**

Professor Emeritus of English. B.A., M.A., University of Washington; Ph.D., Columbia University; Cambridge University; University of London; University of Minnesota; University of Colorado.

**PRISCILLA KINSMAN**

Assistant Professor Emeritus of Education. Ph.B., University of Chicago; M.A., Teachers College, Columbia University; University of Washington.

**MIRIAM L. PECK**

Associate Professor Emeritus of Art. B.A., M.A., M.F.A., University of Washington.

**RUTH PLATT**

Associate Professor Emeritus of Zoology. B.S., M.S., University of Washington; University of California.

**HAZEL JEAN PLYMPTON**

Associate Professor Emeritus of Art. Ph.B., University of Chicago; M.A., Teachers College, Columbia University; Reed College; Portland School of Art.

**CHARLES M. RICE**

Associate Professor Emeritus of Industrial Arts. B.F.A., M.A., Washington State University; University of Washington; University of Oregon; Carnegie A.I.A. Art Sessions; Ed.D., Oregon State University.

**LEONA M. SUNDQUIST**

Distinguished Service Professor Emeritus of the College. B.A., M.S., University of Washington; Teachers College, Columbia University.

**RUTH WEYTHMAN VAN WICKLE**

Professor Emeritus of Physical Education. B.S., University of Washington; M.A., Teachers College, Columbia University; University of California, Berkeley; University of Tennessee.

**1968-69 FACULTY**

(The following list is complete as of May 20 when the Catalog went to press. Additions or deletions since that date are not included.

Dates in parentheses indicate year of initial service to the College.)

**\*WILLIAM R. ABEL (1962)**

Professor of Mathematics. B.A., Morningside College; M.A., University of South Dakota; Ph.D., University of Missouri.

**GOTTFRIED K.V. ADAM (1963)**

Assistant Professor of German. B.A., M.A., University of California, Berkeley.

**DONALD A. ADAMS (1964)**

Instructor of Speech. B.A., M.A., University of Washington.

**HENRY L. ADAMS (1957)**

Professor of Psychology. B.A., M.A., University of Kentucky; Ph.D., University of Illinois.

**PHILIP AGER (1965)**

Assistant Professor of Music. B.A. in Ed., Western Washington State College; M.A., University of Washington.

---

\*On leave 1968-69

- MARGARET AITKEN (1946)  
Associate Professor of Physical Education and Chairman of the Department. B.A., University of Washington; M.A., Ed.D., Teachers College, Columbia University.
- EVELYN E. AMES (1964)  
Instructor of Physical Education. B.S., University of Nevada; M.S., Washington State University.
- ANGELO ANASTASIO (1955)  
Professor of Anthropology and Sociology. A.A., Boston University; M.A., Ph.D., University of Chicago.
- MEIDEL APPLIGATE (1964)  
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DON W. WISEMAN (1962)  
Assistant Professor of Physical Education. B.A., Idaho State University; M.S., Washington State University.

GEORGE E. WITTER (1955)  
Associate Professor of Mathematics. B.A., M.A., Miami University.

JOHN W. WOLL (1968)  
Professor of Mathematics. B.S., Haverford College; Ph.D., Princeton University.

GRANT R. WOOD (1966)  
Assistant Professor of Technology. A.B., College of Southern Utah; B.S., M.S., Utah State University.

PAUL D. WOODRIG (1939)  
Distinguished Service Professor of the College. B.S.Ed., Bowling Green State University; M.A., Ph.D., Ohio State University. Honorary degrees: L.H.D., Kalamazoo College; Pd.D., Coe College; Litt.D., Ripon College; L.H.D., Bowling Green State University; LL.D., University of Portland.

JOHN J. WUEST (1960)  
Professor of Political Science. B.S., M.S., University of Southern California; Ph.D., University of California, Los Angeles.

RAYMOND A. YOUNG (1961)  
Associate Professor of Spanish. B.A., University of British Columbia; M.Lib., University of Washington; Ph.D., University of Madrid.

BAQAR ZAIDI (1967)  
Associate Professor of Economics and Business. B.A., M.B.A., D.B.A., University of Washington.

DAVID W. ZIEGLER (1967)  
Instructor of Political Science. B.A., Oberlin College; M.A., Harvard University.

EDNA ZOET (1965)  
Lecturer in Business Education. A.B., Stanford University; M.Ed., Western Washington State College.

G. DORIN ZOHNER (1967)  
Assistant Professor of Psychology. B.A., M.A., Brigham Young University; Ph.D., University of Massachusetts.

## AFFILIATED TEACHERS OF MUSIC

NANCY BUSSARD  
Piano. B.A., Whitman College.

NICHOLAS BUSSARD  
Oboe. B.A., Whitman College; M.M., University of Oregon.

ROY M. CUMMINGS  
Trumpet. B.M., University of Washington.

DONALD FUNES  
Woodwinds. B.A., M.A., Western Washington State College.

MARGARET HAMSTREET  
Piano. B.A., University of Wyoming.

LARRY MC DANIEL  
Woodwinds. Oberlin Conservatory of Music; University of Washington.

GARY NAKAYAMA  
Percussion. B.A., University of Washington.

BETTY REUBART  
Voice. B.A., University of Missouri at Kansas City.

ARTHUR THAL  
Violin. New England Conservatory of Music; American Conservatory of Music.

WILLIAM WOHLMACHER  
Clarinet. B.M., University of Puget Sound; M.M., Eastman School of Music.

## ASSOCIATE IN THE ARTS—MUSIC

MITSUKO ARUGA (1968)  
Diploma, Talent Education Institute, Matsumoto, Japan.

## CONSULTANT

BUELL C. KINGSLEY (1963)  
Consultant Counseling Center. B.A., Dartmouth College;  
M.D., University of Oregon.

## RESEARCH ASSOCIATES

JAMES D'ARGAVILLE CLARK (1964)  
B.Sc., Capetown; B.Sc., University of London; Ph.D.,  
Institute of Paper Chemistry, Lawrence College.

IRWIN L. SLESNICK (1967)  
B.A., B.S., Bowling Green State University; M.S., University  
of Michigan; Ph.D., Ohio State University.

GOLDIE VITT (1962)  
B.S., Eastern Montana College of Education; M.S., Montana  
State University.

## COLLEGE-SCHOOL DISTRICT JOINT APPOINTMENTS

Arrangements have been made with certain school districts for  
the following joint appointments who serve the College as  
part-time student teaching supervisors.

Dr. Harry Garrison, Coordinator of Resident Centers

Ray Cohrs, Seattle  
Charles Fletcher, Seattle  
Virginia Galloway, Seattle  
Dean McCoy, Seattle  
George Mehrens, Seattle  
Ray Ostrom, Seattle  
Lela Postler, Seattle  
Irma Rodenhouse, Seattle

Jackie Ambrose, Shoreline  
Anthony Angell, Shoreline  
Fran Jackson, Shoreline  
Betty Temple, Shoreline

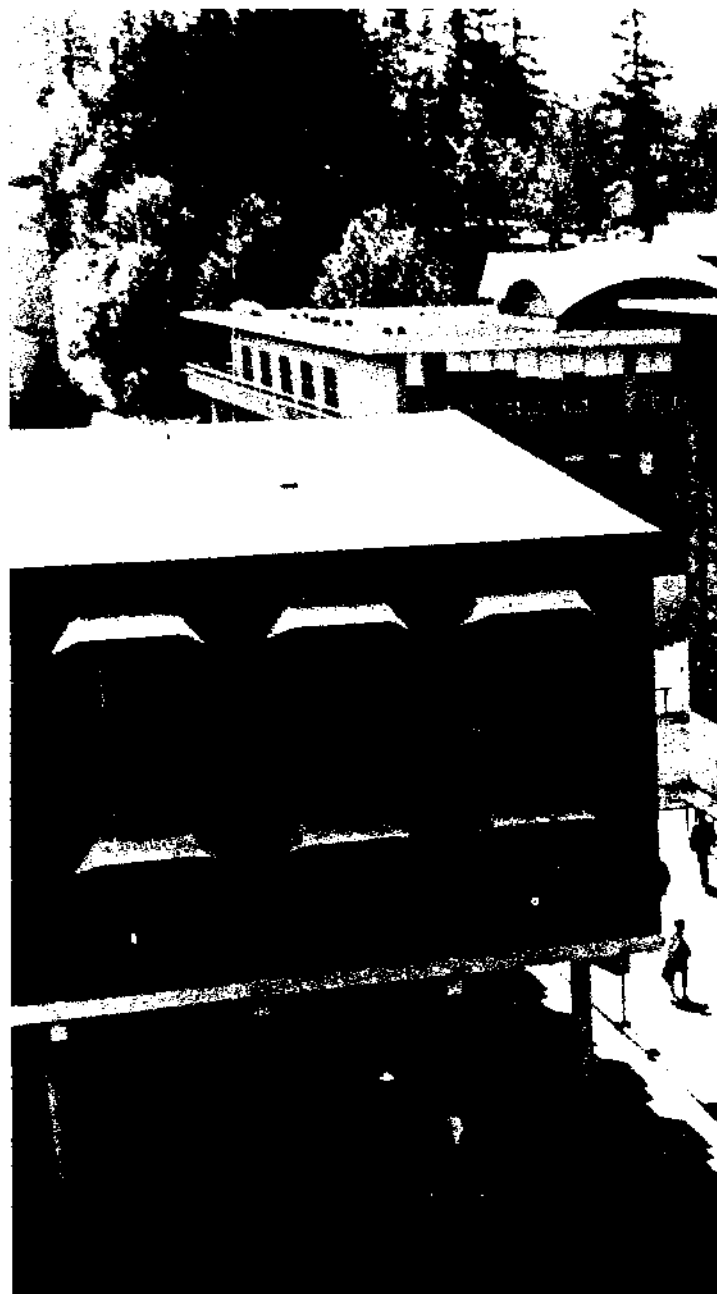
Robert W. Baltz, Bellevue  
George Frazier, Burlington-Edison

Miriam Burton, Edmonds

Dwight Andrus, Everett  
Phil Zalesky, Everett

Adolph Ravnik, Mount Vernon

Others are being arranged in Anacortes and Tacoma.





## SUMMARY OF ENROLLMENT

### *Resident*

Summer Quarter, 1967	3035
Fall, Winter, Spring, 1967-68	7112

### *Extension*

Independent Study	389
Evening Classes (on campus)	955
Extension Classes (off campus)	3091
Total Extension Enrollment	4435

## DEGREES AND CERTIFICATES

### *Degrees granted from August, 1967, to June, 1968, inclusive:*

Master of Education	108
Master of Arts	13
Master of Science	20
Bachelor of Arts in Education	705
Bachelor of Arts	394
Total	1240

### *Teaching Certificates issued from August, 1967, to June, 1968, inclusive:*

Three-year Elementary	2
Provisional	709
Total	711

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# Western Washington State College

Bellingham, Washington 98225