

UNIVERSITY of
MINNESOTA
BULLETIN 1976
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1978



College of
Liberal Arts



UNIVERSITY OF MINNESOTA

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College
of Liberal Arts

UNIVERSITY OF MINNESOTA

Where to Find Information About CLA and the University

This bulletin describes College of Liberal Arts (CLA) courses, major programs, procedures, learning opportunities, and degree and other requirements.

The bulletin is up-to-date as it is published. Later course information will come to you through supplements issued when changes have become substantial. Advisers and department offices can provide information about current changes. Most departments furnish statements of their current major requirements and procedures. The *CLA Bulletin* does not list graduate-credit-only (8xxx) courses.

The *Class Schedule* is distributed each quarter with registration materials (the fall schedule covers fall, winter, spring). It lists course offerings with class hours, rooms, instructors, and prerequisites. Its closing pages have registration instructions, final exam schedules, and other information.

Official Daily Bulletin—This *Minnesota Daily* column carries up-to-date announcements about University courses, study opportunities, meetings, and activities. You are expected to be aware of any of its contents that affects you.

Other Resources—*Prospectus*, available in college offices, describes content of most 1xxx and 3xxx courses, together with grading practices and instructor expectations. The *Field Experience Catalog*, obtainable at OSLO (201a Wesbrook Hall), is a guide to outside-the-classroom learning opportunities. The *General Information Bulletin* and most other University bulletins can be obtained at the Information Window, main lobby of Morrill Hall.

Advising Services—Every CLA student is assigned to a specific adviser—a staff or faculty member who helps with questions a student cannot answer. For information about the advising system and other advisory services see Advising Services.

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College of Liberal Arts

I. THE COLLEGE AND ITS PROCEDURES

Liberal Education and the CLA Student

Liberal education is education for living. Its goal is to equip young men and women with the intellectual base for making informed judgments and sensible decisions about their lives and about the complex society in which they live.

A liberal education is in this important sense a most serviceable preparation for life. The College of Liberal Arts offers many kinds of subject matter ("disciplines"), each of them a contributor to a broadening of horizons and a sharpening of skills for students. Liberal education, says one educator, "is designed to open minds, not to produce a final product... but to create intelligent skepticism. It points up the worthiness of the pursuit of truth, rather than serving up, neatly packaged, the truth itself."

At the University of Minnesota, liberal education, says Dean Frank Sorauf, seeks "primarily to develop in students the basic intellectual skills and appreciation of their intellectual and artistic heritage. Students come to us to learn how to think and communicate clearly, to learn how to learn... All of this does not preclude prudent career planning. We can assert the goals of liberal arts education without denying the importance of such planning."

Thus the College of Liberal Arts is at the heart of the University. Law, medicine, social work, nursing, pharmacy, and other professional schools require or strongly advise liberal arts preparation for their specialized curricula. In this way general education turns to practical advantage.

Acquiring a liberal education takes planning. The program that every student prepares is not a mere list of courses, but rather a blueprint for his or her education.

With few exceptions a CLA program includes two basic elements. The first is the *major*, concentrated work in a specific field or a set of related fields. Some of CLA's more than 50 majors are designed to lead directly to career competence; others explore fields of knowledge broadly or lay groundwork for further graduate or professional study. All of them add a dimension of specialization to the degree program.

The second basic element is the *liberal education distribution plan*. This plan is designed to insure that students attain basic familiarity with four principal areas of human knowledge. It allows wide opportunity to satisfy personal interests and to enrich understanding of the world in which we live. Careful planning of the liberal education component of a degree program is as important as thoughtful selection and planning of a major.

What you do with the roads to knowledge open to you in CLA, how useful its opportunities become, is your own responsibility. The college's faculty, its many services and advisers, will help; but in the end the route and the goal depend on you.



Section I of this bulletin provides information about college regulations, procedures, services, and sources of information. Section II lists the University courses that have been approved for credit toward CLA degrees and describes major requirements. Section III details CLA preparation for professional education in other units of the University. Section IV contains supplementary information needed in planning degree programs.

The College's Organization

The College of Liberal Arts is organized to give young men and women, and a growing number of older citizens, the most useful and stimulating educational experiences its resources can provide. In 1975-1976 CLA served more than 20,000 undergraduate and 3,000 graduate students. The college's nearly 50 departments, programs, and schools—staffed by a faculty of more than 700—offer undergraduate majors that produce about 2,500 Bachelor's degrees, and graduate work that leads to more than 600 Master's and Doctor's degrees, every year.

All of these units have substantial autonomy in faculty, teaching methods, and operation; budget decisions are reviewed at college and University levels. Proposals for new courses and majors, mostly from staff but sometimes from students, are reviewed by the Humanities and Fine Arts, Natural Sciences, or Social Sciences Divisional Councils—faculty-student bodies to which teaching units report. Decisions that affect the entire college, such as degree requirements, are made by the All-College Council. The college in this decade has moved extensively toward experimental courses, independent study programs, and other innovations that serve students' individual needs. Several "centers"•• allied with teaching units provide facilities and aid with funding for faculty and student research. A number of service offices, described later in this section of the bulletin, help to meet student needs for career advice, solution of scholastic problems, and other types of assistance.

The CLA advising system is far reaching. Individual instructors are usually available to counsel students, and most departments have directors of undergraduate and graduate advising. A series of premajor advising offices, divisional and major advising offices, and other specialized offices aid in program planning and meeting day-to-day problems. Later pages in this bulletin describe these facilities in detail.

STUDENT INTERMEDIARY BOARD

Student participation in and communication about CLA affairs channel through the Student Intermediary Board (CLA Board), a 25-member council of elected and appointed undergraduates. The board is the agent for student proposals for course changes, new courses, and improvement of educational practices and opportunities (individual students also may make such proposals). The board's comments and suggestions on curricular, instructional, procedural, and student personnel issues have for years been positive contributions to college progress.

The CLA Constitution assigns to the board the responsibility for nomination of student members for college committees, which are the steering and advising organs of CLA.

An additional board responsibility is the maintenance of liaison with departmental student organizations. These bodies function in many CLA departments as the board does in the college setting. The college encourages appropriate student participation at all levels.

Students who wish to participate in the operations of the board, and thereby contribute to decisions affecting the college, may declare their interest at the board office, 101 Johnston Hall (373-2821).

Admission

The College of Liberal Arts admits qualified applicants at all undergraduate levels. Admissions depend upon the applicants' prior educational achievement and

••Family Study Center, International Studies Center, Northwest European Center, Philosophy of Science Center, Social Science Research Facilities Center, South Asian Center.

objectives and their state of residence (non-Minnesotans must satisfy higher academic standards).

Admission materials and information may be requested from the University Office of Admissions, 6 Morrill Hall, by mail, phone, or in person. A \$10 nonrefundable credentials examination fee, payable to the University of Minnesota, must accompany the admission application.

Students may enroll in any quarter to begin college work. New students may enter during Summer Session and earn credits toward degrees, but are not formally admitted to the college until later quarters.

Applications must be received by July 15 for fall admission, November 15 for winter admission, and February 15 for spring admission. Applications received later than these dates may be considered but cannot be assured of action in time for enrollment in the quarter requested. Earlier application is advisable; high school students are urged to apply between November 15 and April 15 for the following fall. Summer Session enrollment and registration instructions are presented in the *Summer Session Bulletin*, available by April 1; students may register in advance, beginning in late May.

FRESHMAN ADMISSION

High school graduates who have completed less than one year of college work enter as freshmen. Those in the top 10 percent of their high school graduating classes are automatically admissible. Others are considered for admission on the basis of high school percentile rank and scores on a college aptitude test.

Applicants for freshman admission must submit scores from either the Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test (PSAT/NMSQT) or the American College Testing Program (ACT). The PSAT, administered through the Minnesota Statewide Testing Program, is taken in the junior year of high school; the ACT in the junior or senior year. Test scores should be reported to the Admissions Office, 6 Morrill Hall, University of Minnesota, Minneapolis 55455. Either a PSAT plus high school rank or an ACT plus high school rank score will determine admissibility. Patterns of high school work and educational objectives will also be considered.

Exceptions may be made for students whose high school performance indicates the likelihood of successful work in college. (See a current *General Information Bulletin* for specific information about possible alterations in admission requirements.)

Advanced Placement—High school students may earn college credit in some subject areas by participating in the College Entrance and Examination Board Program in high schools that offer it.

ADMISSION BEFORE HIGH SCHOOL GRADUATION

Outstanding high school students may sometimes begin college work before high school graduation. The most common circumstances are these:

Concurrent High School-University Registration—Some students, usually seniors, may enroll for courses while completing high school work.

Summer Session Registration—Students with exceptional records may register in the summer between their junior and senior years for courses that meet specific needs, upon high school counselors' recommendation.

The College and Its Procedures

Early Full Admission—Outstanding students who have not completed high school are occasionally admitted, usually after completion of the junior year of high school. Thorough interviews and testing and recommendations from high school principals and parents are taken into account.

Older Nongraduates of High School—Older students who have not completed high school but wish to seek CLA degrees may be considered on the basis of test scores.

ADVANCED STANDING ADMISSION

Students with a year or more of college work are considered for admission with advanced standing. Admissibility is usually based on successful earlier college performance at better than a C average, the student's educational objectives, and patterns of course work. Students who have completed 2 years (84 transferable college credits) of C or better work in Minnesota community colleges are automatically admissible.

Prospective advanced standing students are wise to include in their pre-CLA work as many courses prerequisite and preparatory for the areas they expect to enter as they can.

Transfers of Credit—All transfer credits accepted by CLA for college-level liberal arts course work may apply toward the student's degree. Credits of A, B, C, or S will transfer fully. Credits of D normally do not count toward the total required for graduation, but some D-credit courses may meet other graduation requirements (see Use of D Grades). Credits earned through standardized testing programs (such as CLEP; see Examination-for-Credit Programs) will be accepted if the scores meet CLA requirements. A limited number of college credits of non-CLA course work can be accepted toward the Bachelor's degree (see Other Degree Requirements).

Evaluations of transfer credits are made in the Advanced Standing office, 6 Morrill Hall (373-2155), to which questions should be addressed.

PART-TIME AND NONDEGREE STUDENTS— ADULT SPECIAL ADMISSION

Hundreds of men and women study for personal growth and enrichment through the adult special category. Adult specials are usually 24 or older or already hold Bachelor's degrees. Flexible admission standards take into account the needs and experience of individual students. Most adult specials register for part-time study, though full programs are not prohibited.

Advising services for CLA adult specials center in the Adult Special office in Johnston Hall. Advisers aid in adjusting class programs to "outside demands" and in selection of course work to take fullest advantage of the college's resources.

Credits earned as an adult special may later, upon admission to a degree program, be applied toward the Bachelor's degree. Only the first quarter's work may be submitted for credit in the Graduate School. Generally, adult special work may not be used to improve scholastic averages for admission to other programs.

Applications for admission are made at the Office of Admissions, 6 Morrill Hall.

SENIOR CITIZEN ADMISSION

Minnesota residents 62 or older may gain admission to CLA classes when space is available after tuition-paying students have been accommodated. They apply to instructors after a class has had its first meeting, and register at 18 Johnston Hall if

permission is granted. They are usually required to have met course prerequisites. Auditors pay no fees unless materials or other special charges are involved. Those seeking credit pay \$2 a credit as well as any special fees. Further information is available at 105 Morrill Hall (373-2136).

ORIENTATION

New students are required to participate in orientation programs scheduled shortly before their first quarters open. The 1- or 2-day programs introduce students to the University in general and to college procedures and facilities in particular. During orientation students have their first meetings with advisers and work out initial registrations.

New students receive their scheduled orientation dates by mail, along with a variety of preplanning information. They also get a *Handbook* with details about registration, course selection, and college services which may be used in conjunction with the *CLA Bulletin* as preparation for on-campus experiences.

CLA Degrees

The College of Liberal Arts offers four 4-year Bachelor's degrees—bachelor of arts (B.A.), bachelor of fine arts (B.F.A.), bachelor of science (B.S.), and bachelor of elected studies (B.E.S.—open to a limited number of students). A 2-year degree, associate in liberal arts (A.L.A.), is also offered. Many requirements are common to all 4-year degrees—the degree requirements chart shows uniformities and differences. Additional information appears in the following pages.

Admission to Degree or Major Status—Students making satisfactory academic progress are usually free to select the major of their choice. Some programs, however, limit the number of majors admitted through special procedures (journalism, music, the B.F.A. programs, the social welfare B.S. program in CLA, and biology, business administration, education, and some health sciences programs in other colleges).

BACHELOR OF ARTS DEGREE

This degree can be earned through majors in most CLA departments and programs. Its breadth and diversity in general education make it valuable as a base for many kinds of careers or for advanced study. CLA offers several professional majors and specializations as well as interdepartmental B.A. degrees.

BACHELOR OF FINE ARTS DEGREE

The Departments of Music, Theatre Arts, and Studio Arts offer the B.F.A. for students who demonstrate superior professional promise. Progress of accepted candidates is reviewed annually. Information about admission and degree requirements can be obtained from the B.F.A. booklet available in the three department offices.

BACHELOR OF SCIENCE DEGREE

Four B.S. degrees are offered: communication disorders, economics, social welfare, and urban studies. The B.S. degree, with heavier major concentration than the B.A. provides, does not require language study. Additional B.S. programs may become available.

BACHELOR OF ELECTED STUDIES DEGREE

This degree program completed a 5-year experimental period in spring 1976, and admission to degree candidacy was then suspended for review and possible alteration of requirements (students already admitted may complete their programs). The degree may be reinstated, in modified form. Its purpose is to give students latitude to design individualized degree programs that fulfill CLA standards of quality, quantity, and, in spirit though not necessarily in all specifics, certain other degree requirements. Students with interest in this kind of opportunity may obtain up-to-date information at the B.E.S. office, 49 Johnston Hall (376-7467).

ASSOCIATE IN LIBERAL ARTS DEGREE

The A.L.A. recognizes completion of 2 years of work in CLA and is designed for those who are not certain of further educational plans. An evidence of achievement in general liberal arts education, it is advantageous as preparation for additional professional or general education.

CLA DEGREES IN NON-CLA SUBJECT AREAS

A number of B.A. degrees may be earned with majors in non-CLA units of the University: the Colleges of Biological Sciences and Education, Medical and Public Health Schools, Institute of Technology. Approved courses and B.A. programs are listed alphabetically under department headings in Section II. CLA credits but not degrees are available through approved courses in the Colleges of Home Economics and Business Administration. Some Reserve Officers' Training Corps credits also count toward CLA degrees.

SECOND BACCALAUREATE DEGREES

Students who have earned B.A. degrees at other institutions may earn CLA baccalaureate degrees with different majors by completing all degree requirements, including 45 CLA credits. CLA graduates may earn additional baccalaureate degrees by earning 45 additional CLA credits (a total of 225) and meeting all requirements for the second degree.

Degree Requirements

LIBERAL EDUCATION DISTRIBUTION PLAN

Choice of part of the degree work to assure balance and breadth of study is guided through the "group distribution plan." CLA offerings present so broad a scope that a student can not only meet the plan's requirements but also satisfy personal interests, enrich understanding, and explore the larger world as well as the immediate community.

Though many students spread group distribution course choices over the 4 years of college, most take a considerable portion of them in the first 2 years. Introduction to a well-chosen variety of fields can make the last 2 years of work more fruitful, and many group distribution courses are prerequisite to 3xxx-5xxx required and elective course work.

B.A. and B.S. degree candidates meet these breadth-and-balance requirements by completing at least 48 credits distributed thus:

Group A—Communication, Language, Symbolic Systems
8 to 10 credits (normally two courses)

Group B—Physical and Biological Sciences
12 to 15 credits (at least three courses of 4-5 credits each, one course or more to include laboratory). Credit by examination does not satisfy the laboratory requirement.

Group C—Man and Society
16 to 20 credits (normally four courses)

Group D—Artistic Expression
12 to 15 credits (normally three courses)

Course Distribution by Groups—Two indicators of assignment of courses to the four distribution groups appear in this bulletin: designations at the end of most course descriptions (e.g., GrA) and a list of group assignments in Section IV. This list, updated once a quarter, is available in college advising offices.

B.A. SECOND LANGUAGE REQUIREMENT

Two "routes" provide plans to meet this requirement. Route I is designed to equip students to use a language different from their native tongue with proficiency; Route II reduces the emphasis on language but requires supplementary study of the culture and society in which the chosen language is the principal medium of communication.

Knowledge of a second language gained before entering CLA may be used to meet part or all of the language requirement. Students who are unsure of their proficiency may consult a language department or an adviser for placement assistance. With adviser approval, students may repeat for credit language taken in high school.

Foreign students whose primary language is not English are exempted from the requirement. They may not earn CLA credits in proficiency courses in primary languages.

Courses used to meet the language requirement may not be applied toward group distribution requirements.

Route I and Route II requirements, with a list of courses that meet part of the Route II requirements, are stated in Section IV.

Examinations to Meet Language Requirement—Qualified students may meet part or all of the requirement by passing examinations arranged with appropriate departments. Examinations may be for credit or to demonstrate proficiency without credit. See Examination-for-Credit Programs.

ENGLISH COMPOSITION REQUIREMENT

Candidates for all CLA Bachelor's degrees except the B.E.S. must meet the English composition requirement (Comp 1001-1002, Comm 1001-1002 or 1001-1003, or exemption). Entering freshmen who have not been exempted on the basis of high school records and placement tests must complete Comp 1001 or Comm 1001 and take an appropriate continuation course unless specifically exempted by the English Department upon evaluation of work in the 1001 course.

During the 1976-77 academic year transfer students entering with 39 or more credits take a proficiency test to determine placement. Information may be obtained from the Composition office, 209 Lind Hall, 373-2595.

More details about the composition courses and requirements are presented in Section II under Composition.

CLA BACHELOR'S DEGREE REQUIREMENTS

Type of Requirement	Bachelor of Arts	Bachelor of Science	Bachelor of Fine Arts	Bachelor of Elected Studies (experimental)*•
TOTAL CREDITS	180	180	180	180
CLA CREDITS	45 in CLA courses	45 in CLA courses	Last 45 in CLA courses	45 in CLA courses
UM CREDITS	30 in senior year	30 in senior year		30 in senior year
3xxx or 5xxx CREDITS	75 total 30 outside major	75 total	Usually at least 75	75 total
QUALITY STANDARDS	Grades of A, B, C, or S in 180 CLA credits, in 75 3xxx or 5xxx credits, and in the minimum number of 3xxx or 5xxx credits required by the major department (credits of D earned at Minnesota or other institutions after the summer of 1972 count toward all requirements except those listed above). Up to 12 credits of D may be compensated by an equivalent number of credits of A or B in work outside the major; or, if the department allows, within the major.			Same as for other degrees, with exception of major requirements
ENGLISH COMPOSITION	Comp 1001 and continuation course, or Comm 1001-1002 or 1001-1003 or exemption			
SECOND LANGUAGE	Completion of stated language requirement (see page 9 and Section IV)			
GROUP DISTRIBUTION	See page 8 and Section IV	See page 8 and Section IV	See B.F.A. booklet	
MAJOR	Completion of program approved by department	Completion of program approved by department	Completion of program approved by department	

*•Admission to program suspended in spring 1976.

OTHER DEGREE REQUIREMENTS

Credit Requirements—A minimum of 180 credits acceptable to the college is required for all CLA Bachelor's degrees. All credits graded A, B, or C and a restricted number graded S and D (see Credits and Grades) are acceptable.

Degree candidates must complete at least 45 CLA credits (excluding credits earned by examination). "CLA credits," those earned in courses listed in the *CLA Bulletin* current when the courses are taken, do not include transfer credits from other colleges and institutions (University of Minnesota or other) that CLA accepts for degree credit. (With a few noted exceptions, all courses listed in Section II of this bulletin carry CLA credit.)

No more than 8 non-CLA credits may be used toward any CLA degree except the B.E.S., which permits 30 such credits. None may be in typing, shorthand, or clearly remedial courses.

Required Preparatory Courses—Most major programs under departmental headings in Section II of this bulletin suggest or require preparatory or background courses. Freshman and sophomore programs should include a substantial number of these, since they qualify students for entrance to advanced and major work. Most of them satisfy some of the distribution requirements.

Outside-of-Major Requirement—B.A. and B.F.A. programs must include at least 30 3xxx or 5xxx credits outside the major department. (B.S., B.E.S., and interdepartmental majors need not meet this requirement.) Heavy concentration in a major field that limits breadth of learning opportunity may defeat a basic purpose of liberal education.

Major Sequences—More than 50 major sequences—fields of junior-senior concentration, often career oriented, based on adequate (often prescribed) preparation—are offered in the college; Section II of this bulletin describes them. Since their requirements change from time to time, you should check with your adviser, your college office, or your departmental office for up-to-date information (ask for an up-to-date "major requirements" sheet).

Departmental Majors—These majors, which appear in Section II under the heading B.A. or B.S. Major Sequence, are designed as integrated programs of concentration. Each represents the judgment of its department about appropriate initial study, at the undergraduate level, of its discipline. Individual major programs may be modified by department or major adviser.

Students may take "double majors" by completing background and major requirements for two concentration areas in addition to other degree requirements. They usually declare double-major programs at the beginning of the senior year, but should start to meet basic requirements earlier. Such students need not meet the B.A. requirement of 30 credits outside the major.

Admission to major status in six CLA degree programs requires departmental permission: biology, journalism and mass communication, music, and the B.F.A. programs in music, studio arts, and theatre arts. Students interested in these programs should consult department offices.

Individually Designed Interdepartmental Majors—These majors (see Section II) make it possible for students to design unique degree programs to meet individual needs. They require approval by the Interdepartmental Major office, 114 Johnston Hall, where advising services are available. They usually combine courses from three or more CLA departments, though they resemble departmental majors in construction around an area of concentration. They require "senior projects" based on students' principal educational purposes.

The College and Its Procedures

Established Interdepartmental Majors—These majors are offered in American studies, classical civilization, East Asian studies, humanities, international relations, Latin American studies, preparation for theology, religious studies, social welfare, urban studies, and women's studies. Detailed under appropriate headings in Section II, these majors may be modified in individual cases.

CLA Degrees Earned While Registered in Other Colleges—Students registered in other Twin Cities Campus colleges may earn CLA degrees (excepting the B.E.S.) by completing CLA degree requirements for the desired degrees. They must file Intent to Qualify forms.

Degree Requirements for "Old" Students—Students absent from CLA for more than 2 years, if they have fewer than 75 credits, must complete the graduation requirements in effect at the time they reenter. Those with 75 or more credits at the time of last attendance may elect either current requirements or those in effect when they last attended.

Application for Graduation—By the fifth week of the quarter in which they expect to complete degree work, candidates must apply for graduation at Window 13, Morrill Hall, and pay the \$10 graduation fee.

ASSOCIATE IN LIBERAL ARTS DEGREE REQUIREMENTS

Requirements for the A.L.A. degree are:

1. 90 credits acceptable to CLA, 45 of them on A-N grading.
2. At least 45 University of Minnesota-CLA credits.
3. CLA English composition requirement.
4. Four of the following: a. Foreign language through the third-quarter college level, or exemption by examination, or 3 years of high school work in one language; b. 8 to 10 credits in Distribution Group A; c. 12 to 15 credits in Group B; d. 16 to 20 credits in Group C; e. 12 to 15 credits in Group D.

If you meet these requirements and apply for the degree, it will be awarded even if you plan to continue work in CLA or in a professional school. Applications go to Window 13, 105 Morrill Hall.

Registration

Registration is the process of signing up for the courses to be taken in the coming quarter. Registration periods ordinarily begin in mid-August for fall classes, mid-November for winter classes, mid-February for spring classes, and late May and late July for the two summer terms.

Registration is a contract: the college agrees to make specified learning opportunities available to you, and you agree to work responsibly to take advantage of them. Your first responsibility is proper registration. Mistakes, tardy registration, failure to observe established procedures, or unnecessary changes could be costly to your educational planning and sometimes place an imposition on others.

Full CLA registration instructions appear in each *Class Schedule*.

HOW TO REGISTER

1. Obtain your registration materials.

Students new to the University, both freshmen and transfers from other

institutions, receive initial registration information by mail. They get materials and instructions when they come to campus for the required orientation-registration program. *Students from other University of Minnesota colleges* apply for authorization to change colleges at the Admissions office, 6 Morrill Hall, or at corresponding offices on other University campuses. For initial registration in CLA, students usually obtain registration permits from the colleges they are leaving. *Students returning to CLA* after absences obtain registration permits at Window 13, Morrill Hall. They then go to their CLA offices for other materials and instructions. *Continuing students* get materials from the college offices to which they have been assigned, beginning one or two days before registration periods open.

2. Plan a tentative course program that meets both your educational and non-curricular needs.

Course Levels—Courses numbered in the 1xxx series (e.g., Clas 1001, Pol 1025) are open to all students, often without prerequisites. Courses at the 3xxx level are open to juniors, seniors, and graduate students (without graduate credit), and usually to sophomores with C averages. Courses at the 5xxx level are open to juniors, seniors, and graduate students (for graduate credit instructors often require additional work), and to third-quarter sophomores with instructor and Scholastic Committee approval. Courses in the 8xxx series, not listed in this bulletin, are not open to undergraduates.

3. Consult your adviser and get approvals if any are needed. Some registrations require instructor (*), department (Δ), sometimes Scholastic Committee permission.

Adviser Approvals—Adviser signatures on registration cards are necessary when advisers so stipulate. Students are urged to consult advisers well ahead of registration periods if they have doubts or questions concerning their course schedules, or if they wish to alter plans; advisers are not always available during formal registration periods.

Independent Study Registrations—All independent study registrations, as well as those for directed study, directed instruction, and extra credit, must have both instructor and department approval. Registration materials provide full information about procedures for such registrations. Approvals must precede submission of fee statements for payment.

4. Procure course entry cards for classes whose size is controlled. (The numbers and titles of controlled courses appear in **boldface type** in the *Class Schedule*. Those in ordinary type are not controlled.)

Alphabetical Registration—Order of registration for continuing students is based on a rotating last-name alphabetical schedule that assures every student one early registration date each year. The tentative schedule for 1976-1978 appears on the page preceding the Index in this bulletin. See also the *Official Daily Bulletin* and the current *Class Schedule*.

New students register during their orientation periods.

Course Reservations, Closed Sections—"Controlled" courses are limited to sizes that yield the best educational results or, in some cases, to classroom capacity. You reserve places in such courses by presenting registration and University identification (ID) cards at the Class Reservations office, 12 Johnston Hall. You will be given entry cards for the classes you have chosen if the class

The College and Its Procedures

limits have not been reached. When a course you want is closed, you can sometimes procure written permission to enter from the instructor or department.

Closed-Section Information—Lists updated daily showing which courses or sections remain open are available, during the controlled-registration period, in college offices and at several locations in Johnston Hall.

5. Turn in registration materials and obtain fee statement.

You obtain the fee statement by presenting all registration materials, including the class entry cards you have obtained, at 18 Johnston Hall during the alphabetical registration period, or later at Window 13, 105 Morrill Hall. All cards and forms must be filled out before submission. (You retain class entry cards to admit you to classes at their first meetings.)

6. Pay fees.

Payment of fees completes registration. No course work will be officially accepted until fees are paid. Paying fees by mail is often convenient, especially at peak registration periods. You need your paid fee statement to obtain a number of University services, such as those of the libraries and the Health Service.

The *General Information Bulletin* offers additional information on fees and expenses.

ADULT SPECIAL REGISTRATION

The Adult Special office in Johnston Hall provides advising assistance, approves programs each quarter for adult special students, and makes appropriate exceptions to CLA regulations. Regular college procedures are followed.

CLA adult specials usually take courses listed in this bulletin. Departmental approval is required to take 8xxx courses. Only the first quarter's work may be approved, on petition, for Graduate School credit.

CLA graduates who desire adult special status go first to Window 13, Morrill Hall; others apply at the Office of Admissions, 6 Morrill Hall.

LIMITS ON REGISTRATION

Maximum Credit Loads—Most students register for three or four courses a quarter—12 to 16 credits. Enrollment for more than 19 credits requires Scholastic Committee approval. This limit typically means that students may register for four courses on their own, but must gain approval for five. Exceptions may be granted to students who have achieved superior academic records.

No minimum limit is imposed.

Non-CLA Credits—Courses described in Section II of this bulletin are open for CLA credit as indicated. CLA students may enroll in some courses in other University of Minnesota colleges—courses not listed in this bulletin—with permission from the Scholastic Committee and the other college. Such permission will not usually be granted when CLA offers comparable courses (this policy applies to enrollment of CLA students in General College courses).

Repeating Courses—You may repeat for credit any course you have not completed satisfactorily (including courses with D grades). Both grades will appear on the University's operational records, but only successfully completed work will be recorded on official transcripts. Credit for other completed courses is usually not allowed.

Credit for Prerequisite Courses—No credit will be granted for a course that is a prerequisite to one for which credit has been received.

Repetition of High School Work—Students in CLA normally enroll for mathematics and foreign language courses for which high school work makes them eligible. If you think you are not prepared to continue at such a level in a foreign language, consult your adviser or the language department about appropriate course selection. You may repeat high school language for credit under either A-N or S-N grading.

Foreign language credit may be earned through special examination if it is beyond the level of your previous formal study or if your competence has been gained outside such study.

Trigonometry may be repeated for credit without approval. Students whose fourth year of high school mathematics includes calculus may be qualified to earn 5 mathematics credits through special examination.

Audited Courses (no credit)—Enrollment in courses without credit is open to those who register as visitors. Visitor registration does not authorize participation in classroom or other activities, nor the taking of examinations. No credit is awarded, and no grade assigned. Other conditions are these:

Instructor permission is required.

Registration may take place only after the controlled-registration period has ended.

The course may not later be taken for credit.

The regular course fee is assessed.

The course appears on the grade record with the symbol V.

See also Senior Citizen Admission.

Limits on Informal Attendance—Under college rules, instructors are asked to exclude from class activities anyone who is not registered. Limited unregistered attendance is permitted, however, during the first several meetings of classes, when students are seeking information about the nature of courses. Occasional, but not regular, visiting may be permitted by an instructor later in a quarter.

Other No-Credit Registrations—Under some conditions students may gain an instructor's permission to take full part in a course and receive a grade through no-credit registration; the grade does not count. Students sometimes use this arrangement for review purposes.

Continuing Education and Extension—Students considering enrollment in evening courses or extension TV courses should take into account both their day school credit load and any outside employment. (Records of extension credits will be shown on day school transcripts if students so request at Window 13, 105 Morrill Hall.)

Credits in Graduate School—If you lack no more than 9 credits of the 180 required for a Bachelor's degree, you may petition to take a limited amount of work for graduate credit. Graduate School approval is necessary. Such work will not count toward a Bachelor's degree.

With Scholastic Committee and Graduate School approval, students lacking no more than 6 credits for a Bachelor's degree may register in the Graduate School as well as in CLA.

CHANGES OF REGISTRATION—CANCEL-ADD PROCEDURE

Students may cancel courses, or add them, after initial registration for a quarter, to make adjustments in their programs. "Cancel-adds" may be made after the end of

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the controlled-registration period and through the first 10 class days of a quarter. No fee is involved.

Students are held responsible for completing courses for which they have registered, unless they officially record either additions or cancellations through the following procedures:

1. Procure a cancel-add form from the college office.
2. Obtain adviser and instructor approval, and Scholastic Committee approval when necessary.
3. Check with the Class Reservations office, 12 Johnston Hall, for either canceling or adding (if the course is on the reserved list, and if the action is within the quarter's first 10 class days).
4. Turn in the cancel-add form at Window 13, 105 Morrill Hall.
5. Get a revised fee statement (same window), if the cancel-add action requires an adjustment of fees.

All of these steps must be carried out to change a program. Informal arrangement with adviser or instructor, ceasing to attend class, or failure to complete course assignments does not alter a registration contract.

Limits on Cancel-Adding—Course cancellations are allowed freely during the first 10 class days of a quarter. Course entry after the first 5 days, however, requires written permission from the instructor, and after the first 10 days from the instructor and Scholastic Committee. Late entry causes difficulties and is seldom permitted beyond the tenth day. For this reason a cancellation after 10 days may result in a reduced schedule.

Cancellation after the first 10 days, permitted only with Scholastic Committee approval, is normally permitted only once each academic year. It may take place at any time before the final examination period begins. Additional cancellations must show compelling circumstances—usually causes beyond your control.

Canceling Out of College—To leave the University during a quarter, you must cancel all courses you have been attending. You should notify your college office, consult your adviser about your plans, complete and submit the cancel-add form, and check your financial status at Window 13, 105 Morrill Hall. (This may be done by letter or telephone to the CLA records clerk, Office of Admissions and Records, if you are unable to do it in person.)

Advising

CLA ADVISING SYSTEM

College advising services give individual help to each CLA student in planning study programs and in meeting other concerns of college life. Freshmen and sophomores who have not selected majors and students in special programs go to assigned premajor or other advising centers (a directory appears below) for counsel on course selection, registration, vocational and personal decisions, financial problems, and participation in campus activities. After choosing a major, a student is assigned for program guidance to a staff member in the major department, and usually retains the same adviser until graduation. College records move to the appropriate divisional office, which becomes the student's "second home." College office advisers may be changed by application at the offices, major advisers by consultation in major departments.

Wise use of the advising system can make the college experience easier and more productive. You should take pertinent records and materials to adviser

appointments, and can profit by approaching program planning sessions with careful suggestions about courses or programs you think will serve your needs. Thorough acquaintance with this bulletin is a time and energy saver.

CLA ADVISING OFFICES

Your official collegiate records are kept in the college advising office to which you are assigned; here you obtain advisory services and procedural information. The offices are:

Premajor Advising (for freshmen, preprofessional students, and those who have not chosen majors)

30 Johnston Hall (373-2912)—biological, physical, and pre-health sciences, undecided students

105 Johnston Hall (376-3950)—pre-business, undecided sophomores

220 Johnston Hall (373-2880)—music, preprofessional, pre-education

B15 Johnston Hall (126 Johnston in 1976) (373-5086)—other CLA premajors except music

B25 Johnston Hall (301 Westbrook Hall in 1976) (376-4571)—Cross-Disciplinary advising and Commons Room

Divisional Offices (for sophomores, juniors, and seniors who have chosen majors or other designated special programs)

Humanities and Fine Arts—206 Folwell Hall (373-5245)

Natural Sciences—223 Johnston Hall (376-4533)

Professional and Interdepartmental—223 Johnston Hall (376-4533)

Social Sciences—West Bank, 122 Social Sciences Building (373-4237); East Bank, 120 Elliott Hall (376-3941)

Advising for Special Programs

Bachelor of Elected Studies—49 Johnston Hall (376-7467)

Honors Program—115 Johnston Hall (373-5116)

Adult Special Nondegree, and Part-time Students—126 Johnston Hall (51 Johnston in 1976) (376-4515)

Martin Luther King—430 Johnston Hall (19 Johnston in 1976) (373-9739)

The college's administrative offices are on the second floor of Johnston Hall. The Student Intermediary Board is located in 101 Johnston Hall (373-2821).

Special Student Services

STUDENT SCHOLASTIC STANDING COMMITTEE

(113 Johnston Hall, 376-3950)

The committee, made up of faculty, students, and administrators, is charged with interpreting and enforcing college and University regulations relating to academic affairs. It seeks to maintain the spirit of the regulations as flexibly as possible, and is empowered to make exceptions in cases in which regulations work to the educational disadvantage of a student.

You are urged to consult a committee representative in your college office on almost any kind of problem, but especially those that you think interfere with attainment of your academic objectives. Adjustments are possible in many kinds of circumstances.

SCHOLARSHIPS, AWARDS, FINANCIAL AIDS

(107 Armory, 373-4021)

Among CLA departments that have annual scholarships and awards available are Classics, German, History, Journalism, Mathematics, Philosophy, and several modern language areas. Department offices provide information about these opportunities. All-University aids, including loans, are administered by the Office of Student Financial Aid. A number of opportunities for scholarship-supported study abroad are available through the International Reciprocal Exchange Program (376-7540).

AIDS FOR DISABLED STUDENTS

(223 Johnston Hall, 376-4533)

Assistance to disabled CLA students is provided through the Scholastic Committee representative in 223 Johnston Hall. Among services available are early registration and selection of course sections, provision of Braille course materials, arrangement of adviser accessibility and classroom positions for students who use wheelchairs, and specific resource aids.

Other services for disabled students are made available by the Rehabilitation Services office, N588 Elliott Hall (376-3143).

VETERANS OFFICE

(20 Johnston Hall, 376-4808)

Students with military service are provided special counseling at the CLA Veterans office. This office not only helps students with problems about service-related compensation but also aids them with evaluation of "military credits" in terms of credits applicable to CLA degrees. (Further assistance may be obtained from the University veterans offices, 6 and 106 Morrill Hall.)

INCOMING STUDENT SERVICES

(105 Johnston Hall, 376-3950)

Students considering entry into the College of Liberal Arts are invited to seek information about the college and the University, as well as program and other advice, from the Incoming Students office. Advisers in this office assist both advanced standing students—those transferring with college credit from other institutions—and those planning to enter as freshmen. (Applications for admission are made at 6 Morrill Hall.)

MARTIN LUTHER KING PROGRAM

(430 Johnston Hall, 373-9739) (19 Johnston in 1976)

The CLA office of the Martin Luther King Program, in addition to providing academic advice and personal counseling, offers a variety of supportive services—tutoring, workshops and support groups, enhancement of study skills, employment counseling. Admission to the program, designed for students with serious financial, educational, or social disadvantages, is not limited by ethnic or racial background. The chief goal is to provide maximum support to MLK students in their progress toward degrees.

CAREER PLANNING

(19 Johnston Hall, 373-4878)

The Career Planning office gives assistance to students in deciding on majors, making tentative career choices, and obtaining information about occupations and opportunities. Among the office's services are:

- Individual counseling; evaluation of interests and abilities
- Informational programs about career areas
- Workshops on career decision making
- Referrals to campus and community sources for specialized information
- Planning options and alternatives for graduate and professional education

PLACEMENT

(17 Johnston Hall, 373-2818)

CLA graduates as well as undergraduates use the services of this office in career planning and finding employment. Counsel on interviewing, résumé writing, and other job search skills is provided, along with seminars and cooperative or internship experiences (in conjunction with OSLO). A file of current job opportunities and employment is maintained. CLA students or graduates looking for employment or applying for graduate or professional school admission may establish a file of recommendation and reference letters, faculty and adviser appraisal forms, and other background materials, to be used at student request. On-campus interviews with prospective employers and graduate school representatives are scheduled through the office.

Students are encouraged to register no later than the beginning of senior year, or even in junior year, for these services. No fees are charged.

GRIEVANCE PROCEDURES

Grievance procedures exist in CLA at both college and departmental levels. A student with a justifiable complaint about a grade or a classroom procedure is expected to confer about it with the course instructor. If no satisfactory solution is reached, the complaint may be presented to the department, program, or school head. Should these informal processes fail to reach satisfactory resolution, the department's committee on academic freedom and responsibility, a student-faculty group, can be assembled to hear the evidence. Further appeals go to college-level and University-level committees.

Scholastic Conduct

STUDENT SCHOLASTIC CONDUCT COMMITTEE

(105 Johnston Hall, 376-3950)

The Committee on Student Scholastic Conduct, composed of students and faculty members, investigates charges of academic dishonesty referred to it by CLA faculty members. When charges are upheld, the committee may place students on disciplinary probation, fail them in courses, suspend them from the college, or take other action.

CLA faculty members may act on cases involving CLA students in their classes; but such action may not exceed modification of a course grade. Instructors must report any action to the committee, and students must be informed of the right to ask for a committee hearing.

Disciplinary or conduct cases that are nonacademic in nature or that involve two or more colleges are referred to the Campus Committee on Student Behavior (373-4066).

ACADEMIC CONDUCT

The committee has defined scholastic dishonesty broadly as any act that violates the rights of another student in academic work or that involves misrepresentation of a student's own work. Scholastic dishonesty includes (but is not necessarily limited to) cheating on assignments or examinations; plagiarizing, which means misrepresenting as one's own work any part of work done by another; submitting the same paper, or substantially similar papers, to meet the requirements of more than one course without the approval and consent of all instructors concerned; depriving another of necessary course materials; or sabotaging another student's work.

Special Learning Opportunities

HONORS OPPORTUNITIES

The CLA Honors program brings to intellectually promising and highly motivated students special educational opportunities; its purpose is to broaden the scope of their learning, encourage full use of their potential, and recognize their accomplishments. Among its advantages are honors courses at all levels, small discussion groups for freshmen and sophomores, seminars for juniors and seniors, special advisers and registration privileges, departmental honors plans, and opportunities for advanced research and individual study. Most honors opportunities are available to qualified students in the college, whether or not they are enrolled in the Honors program.

Graduation With Honors—Enrollment in the Honors program is required for graduation with the traditional honors designations cum laude, magna cum laude, and summa cum laude. Other graduation criteria include University of Minnesota residence, quality of grade record, participation in honors opportunities, in some instances fulfillment of requirements designated for the major field, and for summa cum laude an honors thesis. Some departments also require honors theses for cum laude and magna cum laude degrees.

Honors Courses—Honors courses or special honors sections of regular courses are, typically, small in size and taught by selected teachers. Though grading standards are comparable to those of other courses, topics and materials are approached in greater depth than in regular courses. These courses are designated in the bulletin by the term Honors Course or by the letter H following the course number.

Honors Colloquia—These seminar-size discussion groups are led by faculty members or students and others with exceptional competencies. They are open to all University freshmen and sophomores. Topics change each quarter; vigorous student participation is the pattern. Field trips and other special learning methods often characterize the colloquia. They carry no credit and, since new topics and hours are selected each quarter, they are not listed in this bulletin.

Honors Seminars—College honors seminars are open to students in the Honors program who have completed 90 credits (other applicants are sometimes admitted when class space permits). In contrast to departmental honors course offerings which emphasize depth of learning within fields, college honors seminars are designed to serve the interests of students of high ability but little background in the subject

field. The seminars cover a wide range of topics, often of an interdisciplinary character, and deal with problems and ideas not treated in the regular curricular offerings of the college. They are listed quarterly in the *Class Schedule*.

Honors Contract Registration—By individual arrangement with an instructor at the beginning of a term, students may register for honors credit in a nonhonors course. A written "contract" specifies standards and obligations tailored to the needs of individual students to help them achieve depth of understanding worthy of special recognition.

Freshman-Sophomore Honors Program—Honors students who have earned fewer than 90 credits participate in a program that provides certain educational opportunities: specially qualified faculty advisers, special library loan privileges, and assistance by the Honors program staff in a variety of premajor decisions. Continuation in the Honors program for freshmen and sophomores is based on satisfactory participation in at least one approved honors opportunity per quarter.

Admission requirements are flexible. Students may apply at any time, though entering freshmen are urged to apply by June 1.

Junior-Senior Honors Program—For students who have completed 90 credits and have declared their major concentration, honors curricula in major fields are combined with a variety of academic opportunities and services, including college honors seminars. Students are assisted in scholarship and fellowship matters, especially in preparation for graduate work, and have access to experienced counsel about graduate and professional study. Those undertaking research projects are given special library privileges. Grants are available to help meet costs of projects.

For admission to the major program, students usually must present college grade records with a minimum of half their credits graded A, and must be accepted for admittance at least 2 quarters before graduation in order to graduate with honors. Those who at the end of the junior year have not completed two honors opportunities or whose grade records are below the graduation-with-honors level may be denied continuation in the program.

Departmental Honors Curricula—Most CLA major concentrations provide special honors opportunities, accompanied by special requirements. Information about these programs as well as about graduation with honors may be obtained from department or program offices or from the Honors office.

Honors Program Office—In this office (115 Johnston Hall, 373-5116) all students admitted to Honors programs obtain registration materials, information, and advising and other services.

CROSS-DISCIPLINARY SEQUENCES

These sequences bring together students and faculty members with similar academic interests in coordinated courses related to central themes or subjects.

Freshman-Sophomore Sequences—These are year-long programs with two major objectives:

1. To provide coherent academic programs through introductory courses integrated by faculty coordination and "sequence symposiums," weekly forums centered around sequence themes. Syllabuses describe sequence courses and requirements and suggest study questions to help students plan a year's work.
2. To establish small communities of learners within the larger University setting. Each group of 80 to 120 students remains together through the year,

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taking many of the same courses and meeting often for informal discussion or study in the CDS Commons Room. Sequence advisers, as well as faculty and teaching assistants, keep hours in the Commons Room.

The flexibility of the sequences permits students to prepare for work in several fields and also to meet CLA distribution requirements.

Junior-Senior Sequences—These sequences coordinate related courses during single quarters. Symposiums for discussion of relevant issues accompany them.

Information on CDS sequences may be obtained in 106 Johnston Hall (373-5069); syllabuses are also available there.

EXPERIMENTAL COURSES

New and often interdisciplinary, these courses are usually listed under Literature and Fine Arts (LFA), Natural Science and Technology (NSci), or Social Science (SSci). They are commonly offered initially for one quarter, but may become regular offerings under LFA, NSci, SSci, or department or program auspices. Since they change frequently, students should check for information in the current *Class Schedule* or the Experimental Courses Advisory Committee office, 106 Johnston Hall.

OFFICE FOR SPECIAL LEARNING OPPORTUNITIES (OSLO)

Aid and advice concerning use of independent study and other out-of-class learning opportunities are offered by counselors in OSLO (201a Westbrook Hall, 373-7550). Among the areas in which OSLO provides aid are internships and "cooperative education," examinations for credit, suggestions for new courses, interdepartmental directed study, study abroad, and use of registrations such as X and Y. Most of these opportunities are described separately in this bulletin.

INDEPENDENT AND DIRECTED STUDY

Most departments offer opportunities for individual study, guided or on-your-own, in regular courses or in subjects not covered in the regular curriculum. Among these opportunities are:

Y Registration—Enrollment in established courses you study on your own, without class attendance. You must meet course conditions for examinations and other work on which you and the instructor agree. Regular fees, deadlines, and grading systems apply. Instructor and departmental permission is required.

X Registration—A way of earning extra credits (limit of 3) in a course you have taken or are taking by exploring more deeply a topic related to the course's content. You need the instructor's permission and planning counsel, and departmental permission.

Directed Studies (3970 or 5970, available in most departments)—Opportunity to complete academic work that you design. You need the advance approval and guidance of an instructor, and permission of the appropriate department and the Scholastic Committee. You work largely on your own initiative and at your own speed. Credit assignments vary; normally each credit requires 30 hours of academic work a quarter. Regular evaluation and grading procedures apply.

Directed Research (usually 5990)—Guided research under conditions and procedures similar to those that govern directed studies.

Directed Instruction (3980)—Opportunity to learn more about a subject you have studied by assisting in teaching it to others. Instructor and departmental permission is required. Credits range from 1 to 5 a quarter; a maximum of 8 may be applied toward a degree.

Interdepartmental Study (ID 3970, LFA 3970, NSci 3970, SSci 3970)—Like directed studies except that the subject crosses departmental lines. Normally you work with more than one instructor and need approvals similar to those for directed studies. Information about these courses is available at OSLO.

FIELD EXPERIENCE LEARNING

Off-campus learning—termed variously fieldwork, practicum, service learning, directed research, or internship—is appropriate in many student programs. Such opportunities are identified or often developed through departments or with the assistance of OSLO. They include both employment and volunteer work in areas of students' individual or major interests.

COOPERATIVE EDUCATION

Integrated work and study programs—usually in alternating quarters—give students opportunity to bring together academic and practical (usually paid) experiences to prepare for career objectives. OSLO provides guidance and advice in arranging such programs.

FOREIGN STUDY

CLA credit for study abroad may be earned through a number of programs. Among them:

The SPAN program, which grants 12 credits for preparatory study and summer study abroad in selected countries, plus language credits in some cases (see Foreign Study, Section II).

A program of courses in English, history, political science, and theatre arts under Continuing Education and Extension auspices in London. Courses are also offered every winter in Mexico. Information may be obtained from Continuing Education and Extension, 170 Wesbrook Hall (373-3942).

Study at the University of Erlangen-Nuremberg, Germany, from September through July, and in a February-through-June program in Costa Rica, under a cooperative arrangement with the University of Kansas. Information is available from OSLO, 201a Wesbrook Hall (373-7550).

French, German, Spanish, and occasionally other language study courses in their native settings, some during summers and some for longer periods. Information is available from the department offices.

Practical field experience in archaeology in Greece, Turkey, Italy, and other Mediterranean areas. Information is available from the Classics Department.

Individual study abroad may be arranged in advance with instructors in one or more departments. A Checklist for Study Abroad records planning, preparation, and student-instructor agreements. Students can continue their status in the college while abroad, including eligibility to receive financial aid, by filing the checklist in OSLO and registering for FoSt 0900 (full time) or 0910 (part time). Credits may be recorded as earned by examination, transfer, or independent study. Information is available from OSLO.

EXAMINATION-FOR-CREDIT PROGRAMS

Several opportunities to gain credits, exemptions, or advanced placement are available: special examinations for credit, foreign language placement, advanced placement, and credit for armed services educational experience. Information about examinations or accreditation of work validated in non-University standardized exams is available in college or department offices.

Credits earned through examination may not be used toward the 45 CLA credits required for a degree.

Special Examinations for Credit—A student who believes his or her knowledge of a subject is equal to that required to complete a particular course may apply to the Scholastic Committee for a credit examination. If departmental review of an application and the applicant's background lead to approval, arrangements can be made with an appropriate instructor to take the exam. Usually no grade is assigned. A \$20 fee is assessed for each course examination after the first quarter of enrollment. Only currently enrolled students are eligible.

Special Examination for Proficiency—To meet a prerequisite or satisfy a requirement, you may ask Scholastic Committee permission for an examination to demonstrate proficiency. No credit is granted, and no fee is charged.

College Level Examination Program (CLEP)—By passing one or more of the standardized "general examinations" prepared by the College Entrance Examination Board, a student may—after initial registration—earn up to 32 credits (without grade). Previous credits for college course work taken in the subject matter will be subtracted from credit awards for CLEP exams. CLEP also offers a number of "subject examinations" for credit. Information about CLEP tests may be obtained from college offices or 105 Johnston Hall (376-3950).

Credits and Grades, Student Records

Credit Value—A credit is earned, by University Senate definition, through "about 3 hours of academic work a week"—30 hours in a 10-week quarter. A 4-credit course typically represents 120 hours of acceptable work. The time may be spent in varying combinations of classroom, laboratory, library, or off-campus work and homework.

Grades—University academic achievement is graded under two systems: A-B-C-D-N and S-N. Most CLA courses may be taken under either system; choice is indicated on registration blanks (changes may not be made after the tenth day of classes). Some courses may be taken under only one system or the other; limitations are identified in the course listings. Most departments restrict S-N registration in required major courses (consult major department).

The A-B-C-D-N System—Under this system academic performance is rated on a graduated scale. The grade A signifies achievement considered *outstanding* relative to course standards; B, achievement *significantly above* the necessary level; C, work that *fully meets but does not exceed* such level; D, work which, though not entirely up to standard, meets some course requirements. N signifies *no credit* for a course.

The S-N System—The grade S records work *satisfactory* to the instructor, under standards the instructor has described. Standards may differ from course to course.

The S-N Option—Students must earn A-B-C grades for at least half of the University of Minnesota credits applied toward their degrees (never fewer than 45). The other half may include S grades.

Acceptance of S Grades in Other Colleges—Academic units other than CLA do not always accept S credits. The University of Minnesota Graduate School asks for written evaluations or letter grades for S credits in courses that bear on a student's proposed field of specialization, and may request additional information such as results of the Graduate Record Examination. It is often difficult to obtain redefinition of S grades in A-B-C-D terms. Students contemplating graduate work should consult college bulletins or an adviser about use of S-N grading.

Course Standards—Instructors in all courses have the responsibility to define their standards and grading procedures early in each quarter. Students should ask for such explanations if there is doubt.

Additional Grading and Record Symbols—The CLA system uses several additional symbols:

The symbol I, *incomplete*, is a temporary grade, assigned when the instructor has "reasonable expectation" that a student can successfully complete unfinished work in a course before the end of the next quarter in the college. Student and instructor should arrive at a clear understanding, in advance, as to whether the student is to receive an I and what the conditions for makeup of work will be. The instructor may set dates and conditions for makeup of work. If a course is not completed as prescribed or not made up as agreed, the grade becomes N and the I is removed from the record. A student may, however, make up the missing work, if the instructor approves, to change the N to a passing grade.

To make up an I that has been on the record for more than a year, a student is usually expected to reregister for the course and to complete it as if it were an original registration. (The original I, or I reverted to N, will remain on the student's internal, operational record.) Departments or instructors may extend the 1-year limit in cases in which makeup without registration seems feasible.

The symbol W is recorded when a student officially *withdraws* from a course after the tenth day of class (earlier withdrawals are not recorded). A student must file a cancel-add form to assure that the W will be formally entered on his or her record.

The symbol V indicates registration as a *visitor* or auditor, which permits attendance but not participation in a course's activities. No credit or grade may be earned. Regular attendance without registration is not authorized.

The letter T indicates a grade *transferred* from another college or institution.

The symbol X is recorded by instructors in continuation courses for which grades cannot be determined until the full sequence is completed. A permanent letter grade replaces each X upon completion of the sequence.

Use of D Grades—A limited number of courses with D grades can be applied toward a CLA degree. Courses with D grades may be used to fulfill distribution requirements, prerequisites, or, with departmental approval, specific major course requirements. A maximum of 12 credits of D may be applied toward the 180-credit degree requirement if they are balanced by an equal number of A or B credits in appropriate courses at the same or higher levels.

D credits in the major, if accepted, must be offset by an equivalent number of A or B credits in major courses. D grades from any institution, including Minnesota, may be offset only by CLA A's and B's.

Satisfactory Progress—A CLA student is expected to make "satisfactory progress" toward the degree. This usually means grades of A, B, C, or S in most courses and completion of courses undertaken (see Probation).

If you are dissatisfied with your progress, early consultation with instructors or your adviser is recommended.

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"Old" Grade and Credit Requirements—Credits and grades earned before fall 1972 will be accepted toward graduation under the rules in effect when they were earned. Specifically, all credits completed before fall 1972 count toward graduation; and a grade point average of C in such credits—overall, in major courses, and in 3xxx or 5xxx courses—will qualify them for application toward CLA degrees. Information about these requirements may be obtained from college offices.

STUDENT RECORDS AND TRANSCRIPTS

Student academic records are maintained under a dual computerized system:

1. The *official transcript* shows all work completed (courses graded A, B, C, D, S; symbols V and T). On a student's written request, this record may be released outside the student's college.
2. The *operational record* reports all registrations and their outcomes. This is an internal record, to be released only within the college or to the student it concerns, on personal request. In addition to the grades for work completed, it shows the symbols and grades W, I, N, and X. A copy of this record is mailed to each student at the end of the academic year. (Fall and winter grades are reported before the succeeding quarters on grade slips that students obtain at designated locations; they are not mailed. See the *Official Daily Bulletin*.)

College File—Other records related to advising are maintained in college offices.

STUDENT RECORDS: CONFIDENTIALITY AND ACCESS

Confidentiality—College and University regulations protect the confidentiality of student records. Most information in students' records is released only upon their written consent. Some information, designated "public," may be released without permission: the student's college, dates of attendance, degrees earned, and awards. Address and telephone number are released unless the student specifically requests they be withheld. Student record information can be released without permission to government auditors, accrediting agencies, institutions to which a student has applied for admission, and appropriate authorities in emergencies involving the protection of the student.

A complete statement, "Confidentiality and Access to Student Records," is available in college offices.

Student Access—Students may see all their college records except medical, psychiatric, and psychological treatment records and confidential letters of recommendation filed before January 1, 1975. Students may informally review their files on request, with a college representative to interpret the contents. They may copy material and challenge or question contents.

Retention of Student Records—Official transcripts are maintained permanently by the Office of Admissions and Records. The college retains CLA degree program plans filed by students who have earned 75 or more credits. It also keeps student records for 2 years following graduation.

Students may insert materials in Placement office recommendation files, which are permanent.

Probation, Suspension, Readmission

Scholastic Probation—Students are expected to complete 50 percent or more of each quarter's credits, and 75 percent of each year's, with grades of A, B, C, or S. These percentages apply to credits for which students are registered after the tenth day of class each quarter.

Students who fail to attain the required completion percentages are subject to "probation"—the signal that academic progress is not satisfactory. Students on probation who do not improve their records may be suspended from the college. If a heavy load of outside work, campus activity, or other distraction interferes with academic achievement, students are expected to make immediate adjustments and seek whatever assistance is indicated.

Students are taken off probation when their academic work has improved enough to promise continuous progress toward a degree.

Suspension from CLA—Accumulation of substandard work usually jeopardizes a student's likelihood of graduation from CLA or of transferring to another institution. Since continuance in the college in this circumstance is not likely to serve a useful purpose, the student may be suspended. The Scholastic Committee decides in each individual case, on the basis of all the evidence, whether to suspend a student. Appeals may be brought by students who think added information presented to the committee may modify the decision. Suspensions are usually rescinded only when the committee is convinced that changes in the student's academic performance are probable.

Representatives of the committee are always available for consultation concerning alternatives to college requirements, transfer to other institutions, and the prospects for eventual readmission to CLA.

Readmission to the College—Students suspended from the college may return only upon approval of the Scholastic Committee. Dependable assurance that the factors that caused suspension have been corrected must be advanced to obtain approval, together with convincing prospect that improved work will follow. Reaccepted students are usually placed on probation, and they may be subject to immediate suspension if their work becomes unsatisfactory.

Petitions for readmission are normally granted only after an interval of 1 year.

Class Attendance, Examinations, Exemptions from Regulations

Class Attendance—As a CLA student, you are responsible for class attendance and for ascertaining the particular attendance requirements in each class or department. You should also learn each instructor's policies concerning makeup work for absences and illnesses. Instructors and students may consult the Scholastic Committee about the validity of such policies or decisions.

Final Examinations—Students are required to take final examinations at the times shown in the *Class Schedule*. If you have examination conflicts or three exams within a 16-hour period, you may request adjustment in your college office. Such a request must be presented at least 2 weeks before the examination period begins.

If you miss a final, an I or N is recorded, depending upon your standing at the time. Instructor's permission to make up the examination must be obtained.

Exemption from College Regulations—You may discuss exemption from college regulations—concerning late registration, course withdrawal, examination scheduling, or other matters—with a staff member in your college office. Exemptions are

The College and Its Procedures

granted from time to time to help students to achieve educational goals in nonregular ways. Sometimes a petition to the Scholastic Committee is necessary; often your needs may be met through consultation with a committee representative. The receptionist in the college office can usually direct you to appropriate procedures.

Appeals and Suggestions—Staff advisers in the college offices are competent sources for interpretation of college procedures or regulations, and they can often suggest suitable alternatives when a problem is involved. The Student Ombudsman Service (102 Johnston Hall, 373-9788) is another channel of assistance.

Usually if you are dissatisfied with college or departmental procedures, you should go to the person or office at the problem's source. Departments have grievance committees, as does the college—all with student and faculty membership. Advice from your college office may also be helpful.

University Services

A wide range of personal and community services is open to all University students. A Directory of Services in the early pages of the *Student-Staff Directory* lists many of them—among them personal and emotional counseling, health services, employment, housing, financial aids, and emergency services. See also Student Services in the *General Information Bulletin*.

Frequently consulted sources of aid and information include these:

Campus Assistance Center—107 Temporary North of Appleby (formerly Mines)
(373-1234)

Evening and Correspondence Courses—Continuing Education and Extension,
Wesbrook Hall (373-3195)

Foreign Student Assistance—International Student Adviser, 717 East River
Road S.E. (373-4094)

Fraternalities and Sororities—Interfraternity Council and Panhellenic offices,
235 Coffman Memorial Union (373-2435)

Handicapped Student Assistance—Rehabilitation Services, N588 Elliott Hall
(376-3143)

Health Service—Boynton Health Service (373-3141)

Minnesota Women's Center—306 Walter Library (373-3850)

Parking—Parking services, Police Department (373-4190)

Religious Activities—Council of Religious Advisers (645-4561)

Speech and Hearing Difficulties—Speech and Hearing Clinic, 115 Shevlin
Hall (373-4116)

Student Activities—Coffman Information Center (373-2403)

Student Employment—30 Wulling Hall (373-3674)

Student Ombudsman Service—102 Johnston Hall (373-9788)

Student Organizations—Student Activities Center, 317 17th Avenue S.E.
(373-3955)

Study Skills Improvement—Reading and Study Skills Center, 101 Eddy Hall
(373-4193)

Vocational Counseling—Student Counseling Bureau, 101 Eddy Hall (373-4193)

II. COURSE DESCRIPTIONS— MAJOR SEQUENCES

COURSE NUMBERING SYSTEM

Course numbers in the University system indicate course level, course sequence, and whether a course may be repeated for credit. The key:

- 0xxx No credit
1xxx Introductory level—primarily for freshmen and sophomores
3xxx Intermediate level—primarily for juniors and seniors, but open to others with a C average overall and in prerequisites
5xxx Advanced level—open to juniors, seniors, and graduate students, and to third-quarter sophomores by Scholastic Committee approval (arranged in college advising offices). May carry graduate credit for graduate students.
8xxx Graduate level—rarely open to undergraduates. Not listed in this bulletin.
xxx0 May be repeated for credit, if a CLA course (course numbers in other University divisions do not always follow this system).
3970 or 5970 . . Directed Studies courses
3980 or 5980 . . Directed Instruction courses
3990 or 5990 . . Directed Research courses

Courses completed under the numbering system used before fall 1970 usually may not be repeated for credit. Old course numbers are listed in the *Course Numbers Conversion* brochure, available in college offices.

SYMBOLS AND ABBREVIATIONS

- Prefixes 3- or 4-letter department designator (e.g., Engl for English)
f,w,s,su Fall, winter, spring quarter, summer term
Credits First number following course title: credits (cr) per quarter
1011, 1012,
1013 Series courses separated by commas; may be entered any quarter
1011-1012-
1013 Sequence courses separated by hyphens; must be taken in order shown
† Credit awarded only when all courses preceding dagger are completed
§ Credit not granted if equivalent course listed after section mark has been taken for credit
¶ Course preceded by paragraph mark may be taken concurrently
§ Consent of instructor required for registration
Δ Consent of department required for registration
H Honors section of regular course

Course Descriptions—Major Sequences

ACCOUNTING

See College of Business Administration.

AEROSPACE STUDIES

See Reserve Officers' Training Corps.

African Studies (AfSt)

Staff—*Coordinator*, Allen Isaacman, 214 Social Sciences Building

Adjunct Faculty—*Professors*: Browne (Speech-Communication), Chejne (Middle Eastern Studies), Gerlach (Anthropology), Hamilton (Spanish and Portuguese), Porter (Geography), Southall (Afro-American Studies)

Associate Professors: Isaacman (History), Jemie (English), Kaba (History), Purvis (Agricultural and Applied Economics)

Assistant Professors: Coifman (Afro-American Studies), Nimtze (Political Science), Scott (Geography)

Instructors: Pike (Afro-American Studies)

The African Studies program is designed to provide specialist training in African areas of the social sciences and the humanities. Its structure is interdisciplinary.

Core courses for a concentration in African Studies are drawn from the Departments of History, Afro-American Studies, Anthropology, Geography, Political Science, and Portuguese. Related courses may be selected from most social science and humanities departments.

Two options for the social sciences major sequences are offered. Option A is a general interdisciplinary program; Option B is recommended for those who intend to pursue graduate work in the field. A third option with humanistic emphases is planned. Further information may be obtained from the coordinator of the program, 214 Social Sciences Building.

Major Requirements—*Option A*: 30 cr in Arabic, Dutch, French, German, Italian, Portuguese, Spanish, or Swahili, 15 of them at the 3xxx or 5xxx level; Hist 3431, 3432, 3433; 20 other social science cr (no more than 8 in history); Afro 5800. *Option B*: 15 cr in one of the above languages, and fulfillment of CLA second language requirement; 8 cr in humanities courses (no more than 4 in history); Hist 3431, 3432, 3433; 38 social science cr, at least 20 in either anthropology, economics, geography, history, political science, or sociology; Afro 5800.

A list of core and related courses from which elections may be made to meet the requirements is available at the program office. No more than a third of the electives may be chosen from the "related" group; no more than 10 3xxx or 5xxx courses may be taken on the S-N basis. Field study in Africa is encouraged, and credit for such experience can be arranged.

Afro-American Studies (Afro)

Staff—*Chairman*, Geneva H. Southall, 214 Social Sciences Building

Professors: King, Ward (on leave spring, fall 1976, winter 1977)

Associate Professors: Jemie, Taborn

Assistant Professors: Buckner, Coifman, Tucker

Instructor: Pike

Adjunct Faculty—Professor: Porter (Geography)

Associate Professors: Isaacman (History), Kaba (History)

Assistant Professors: Nimtz (Political Science), Scott (Geography)

The Afro-American Studies major is designed to provide comprehensive understanding of the Black experience in the broadest geographical and chronological settings. Its interdisciplinary course work is concerned with the Black experience in the United States, Africa, and Latin America.

B. A. MAJOR SEQUENCE

Required Preparatory Courses—1025, 1301, 1441, 1442

Major Requirements—Minimum of 32 cr, to include:

For humanities emphasis, 16 cr selected as follows: one course from 3055, 3081, 3082, 3101, 3102, 3105, 3108, 5201; one from 3057, 3301, 5301; others from the preceding and Engl 5593, 5596, 5597; Spch 3402; Th 5181, 5182; Fren 5289; Hum 3045

For social science emphasis, 16 cr selected as follows: one course from 3061, 3062, 3072, 3075, 3076, 3091, 3092, 3098, 5001, 5002, 5072, 5101, 5401, 5402, Hist 3864, 3865; one from 3001, 3002, 3003, 3011, 3012, 3021, 3022, 3340, 3455, 5551, 5552, 5553, 5800; others from the preceding and Hist 3401, 3402, 3431, 3432, 3433, 5429, 5431, 5432, 5433, 5434, 5435, 5447, 5900

1015f,w,s. BLACK PROTEST FROM COLONIAL TIMES TO THE PRESENT. (5 cr) Ward
Critical analysis of chronological events and history of Black protest movements. GrC

1025f,w,s. BLACK AMERICANS: SOCIALIZATION, PERSONALITY, AND BEHAVIOR. (4 cr)
Taborn
Development of the Black psyche and of the Black person and Black culture. GrC

1036f,w,s. BLACK PARTICIPATION IN AMERICAN POLITICS. (4 cr)
Participation of the American Black man in administrative, judicial, electoral, and confrontation politics in the United States. GrC

1101f, 1102w, 1103s. RHETORICAL IMAGES IN BLACK WRITING. (4 cr per qtr)
1101: Personal consciousness in Black literature. 1102: Social consciousness in Black literature. 1103: Contemporary Black social and political movements and thought. GrA

1221f-1222w-1223s. BEGINNING SWAHILI. (5 cr per qtr) Pike
1221: Beginning grammar and vocabulary; conversational drill. 1222: Grammar and vocabulary. Reading and writing. 1223: Reading, conversation, writing. GrA

1301f. THE MUSIC OF BLACK AMERICANS. (4 cr) Buckner
Black music in America—discussion and demonstration. GrD

1441f, 1442w. AFRO-AMERICAN HISTORY AND CULTURE. (4 cr per qtr) King
1441: To 1865. 1442: Since 1865. GrC

3001f, 3002w, 3003s. INTRODUCTION TO WEST AFRICAN HISTORY. (4 cr per qtr) Coifman
Similarities and dissimilarities in the historical experience of several West African peoples. 3001: Early times to ca. 1600. 3002: Ca. 1600-1800. 3003: 1800 to present. GrC

3011f,s-3012w. AN INTRODUCTION TO EAST AFRICAN HISTORY. (4 cr per qtr)
The history of East Africa from prehistorical times to gaining of independence and after. State formation, long distance trade, the emergence of nationalism, independence, the search for new paths of development. 3011: Until 1875. 3012: Since 1875. GrC

3021f,s-3022w. AN INTRODUCTION TO AFRICAN STUDIES. (4 cr per qtr)
Diverse elements of the African Studies curriculum, in content and methodology. 3021: Historical perspective and material content. 3022: Trends in the present period. GrC

3055. FOLKLORE: THE AFRICAN IN AMERICA. (4 cr; prereq #)
Manifestations of Afro-American folkways; origin and continuity of patterns of behavior peculiar to the Black life-style. Group character, oral traditions, music, rituals, tales, stories, riddles. GrD

Course Descriptions—Major Sequences

- 3057w. THE AFRICAN ORAL NARRATIVE.** (4 cr) Pike
A theoretical and practical examination of the oral narrative tradition of Africa. Its role in society and its aesthetic forms. GrD
- 3061f,s, 3062w. THE BLACK FAMILY.** (4 cr per qtr; prereq 1442 or Hist 3865 or #) Tucker
3061: Historic view of the Black family up to the present. 3062: The contemporary Black family. GrC
- 3072f,s. RACISM: SOCIAL-PSYCHOLOGICAL CONSEQUENCES FOR BLACK AMERICANS.** (4 cr, §5072) Taborn
Racism and its effects on Black Americans; definitions, determinants, and dynamics. Examined in an experiential context to reflect individual and institutional racism in milieus relevant to student interests. GrC
- 3075f-3076w†. THE HELPING PROCESS: BLACK/NONBLACK.** (4 cr per qtr)
Interpersonal relations and the impact of race within the educational and welfare systems. Interviews, role playing, situational exercises. Fieldwork encouraged (extra credit may be arranged). GrC
- 3081-3082†. BLACK PHILOSOPHY.** (5 cr per qtr)
The history, culture, and social thought of Black people in the United States as base for development of a system of logical reasoning. Clarity and continuity that link past, present, and future. The variables and the constant. GrC
- 3091w-3092s†. DEVELOPMENT OF A BLACK POLITICAL STRATEGY.** (5 cr per qtr; prereq 1036 or Pol 1001 or Pol 1027 or #)
Political strategies developed by Black philosophers and activists, American and non-American. GrC
- 3098s. COMMUNITY POWER STRUCTURE AND AMERICAN BLACKS.** (4 cr)
Research seminar. The sources of power and influence in the general community; relationships of power and its possessors in the Black community. GrC
- 3101f, 3102w. AFRO-AMERICAN LITERATURE.** (4 cr per qtr) Jemie
Prose, poetry, and drama. 3101: To 1939: From slave narratives and folklore to the end of the Harlem Renaissance. 3102: Since 1939: Richard Wright to Amiri Baraka and the Black Arts movement. GrD
- 3105f. BLACK MUSIC PRIOR TO WORLD WAR I.** (5 cr, §Mus 3708) Southall
Musical contributions and achievements of Black Americans in the United States during the 19th and early 20th centuries. GrD
- 3108w. BLACK MUSIC: A HISTORY OF JAZZ.** (4 cr; prereq 1301, 3105 or 3301) Buckner
Origins, growth, and development of jazz; economic and sociological factors that influenced its development. GrD
- 3225f-3226w. INTERMEDIATE SWAHILI.** (4 cr per qtr; prereq 1223 or # for 3225) Pike
3225: Swahili short stories. Vocabulary and grammar. 3226: Expansion of vocabulary and comprehension of written Swahili. GrA
- 3253s. INTRODUCTION TO SWAHILI LITERATURE.** (4 cr; prereq 3226) Pike GrA
- 3301w. AFRO-CARIBBEAN, AFRO-HISPANIC, AND AFRO-BRAZILIAN MUSIC.** (4 cr, §Mus 3709) Southall
Transmissions and links between the musical cultures of Africa, the Caribbean, South and Central America. GrD
- 3340s. TOPICS IN WEST AFRICAN HISTORY: THE HISTORY OF INDIVIDUAL STATES.** (4 cr per qtr; prereq 3001 or Hist 1431 or 3431 or #) Coifman, Kaba
Historical development in specific West African countries. Organization of the communities; social change from early times to the present. Oral traditions and written materials. Content of course will change from year to year. GrC
- 3401s. HISTORY OF PAN-AFRICANISM FROM 1900 TO THE PRESENT.** (4 cr)
The thoughts of major figures about events of their time: DuBois, Garvey, Cesaire, C. L. R. James, Nkrumah, Fanon, Malcolm X, and Stokely Carmichael. GrC
- 3455. FANON: HIS LIFE AND IDEAS.** (4 cr; prereq #)
Fanon's development as a thinker, writer, and revolutionary. GrC
- 3970f,w,s. DIRECTED STUDIES.** (1-15 cr per qtr; prereq #) Staff
Guided individual reading and study.
- 5001f,w. LAW AND SOCIETY: A MINORITY POINT OF VIEW.** (5 cr; prereq Pol 1001 or #)
Ward
Afro-American history from the point of view of American constitutional development as it relates to the American Black community. GrC

Agricultural and Applied Economics

- 5002s. LAW AND SOCIETY: A MINORITY POINT OF VIEW—RESEARCH.** (5 cr; prereq 5001) Ward
Research seminar continuing 5001. Principal emphasis on major piece of investigation requiring and showing scholarship. GrC
- 5072s. RACISM: SOCIAL-PSYCHOLOGICAL CONSEQUENCES FOR BLACK AMERICANS.** (4 cr, §3072) Taborn
See description of 3072. GrC
- 5101s, 5102, 5103. BLACK WOMEN.** (4 cr per qtr) Tucker
The thoughts, feelings, and needs of Black women in their environments; the forces acting upon them. GrC
- 5201s. THE BLACK COMPOSER: CONTRIBUTIONS TO WESTERN MUSIC AND CULTURE.** (4 cr; prereq 1301 or 3105 or 3301, Mus 3708 or 3709, grad student or §) Southall
Musical achievements of Black Americans in the less-known academic art forms. GrD
- 5301, 5302. AFRICAN LITERATURE.** (4 cr per qtr) Jemie
Literature of continental Africa, from oral traditions to contemporary writings in English, French, and African languages. Non-English materials in translation. 5301: Prose fiction. 5302: Poetry and drama. GrD
- 5401w. THE INSTITUTIONALIZATION OF RACISM, 1877-1900.** (5 cr) King
Social, political, and economic forces that resulted in the development of second-class citizenship of Black Americans. GrC
- 5402s. THE INSTITUTIONALIZATION OF RACISM, 1877-1900—RESEARCH.** (5 cr; prereq 5401, grad student and §) King
Research seminar. Social, political, and economic forces between 1877 and 1900 as they related to Black Americans. GrC
- 5551f-5552w. USE OF ORAL DATA IN AFRO-AMERICAN HISTORY.** (4 cr per qtr) Coifman
Oral data available for reconstructing Afro-American history; how to gather, analyze, and utilize these data. 5551: Oral data and methodology developed in Africa; Afro-American sources. 5552: Methodology developed in Africa, applied to Afro-American oral data. GrC
- 5553s. USE OF ORAL DATA IN AFRO-AMERICAN HISTORY: PRACTICUM.** (4 cr; prereq 5551 and 5552, §) Coifman
Collection of oral testimony about the Afro-American past from knowledgeable African, Caribbean, and other informants. Committing such information to written form; using it with other written sources. GrC
- 5595. BLACK POETRY, 1746-1939.** (4 cr, §Engl 5596) Jemie
Phyllis Wheatley, Jupiter Hammon, Frances Harper, Paul Laurence Dunbar, Claude McKay, Countee Cullen, Jean Toomer, James Weldon Johnson, Langston Hughes, Sterling Brown. GrD
- 5597. CONTEMPORARY BLACK POETRY.** (4 cr, §Engl 5597) Jemie
Since 1939. Langston Hughes, Melvin Tolson, Robert Hayden, Gwendolyn Brooks, Amiri Baraka, Don Lee, Nikki Giovanni, Sonia Sanchez, the Last Poets. GrD
- 5800s. AFRICAN STUDIES INTERDISCIPLINARY SEMINAR.** (4 cr per qtr)
Seminar staffed by cooperating faculty from social sciences and humanities. Selected themes that benefit from interdisciplinary analysis.
- 5900s. SENIOR SEMINAR.** (2-4 cr per qtr; prereq jr, sr, or grad student) Staff
Scholars in Afro-American studies help students develop research projects.
- 5970f,w,s. DIRECTED STUDIES.** (1-6 cr per qtr; prereq §; qualified sr and grad students may register with § for work on tutorial basis) Staff
Guided individual reading or study.

Agricultural and Applied Economics (AgEc)

College of Agriculture

The courses listed here carry CLA credit. They may be of particular interest to students of urban, community, and regional affairs.

- 3610. COMMUNITY RESOURCE DEVELOPMENT.** (4 cr; prereq 1030 or Econ 1001 and 1002 or §) Easter, Jensen
Basic concepts of resource use; economic feasibility; benefits and costs; external effects; selected resource use and community development problems. Economic areas and units for planning and development; alternative programs and consequences; problems in choosing an optimum resource and community development program. GrC

Course Descriptions—Major Sequences

- 5600. LAND ECONOMICS.** (3-4 cr; prereq 3101, 3102 or Econ 3101, 3102 or #)
Land as a factor of production; land use, classification, and value; sale and rental markets for land; domestic and foreign land policies. GrC
- 5620. REGIONAL ECONOMIC ANALYSIS.** (4 undergrad cr, 3 grad cr; prereq 1030 or Econ 1001 and 1002)
Concept and theories used and problems encountered in economic study of subregions: space and planning, population and employment change, income estimation and social accounting, industrial location, identification of the planning region, intraregional and interregional analyses, planning goals, national and regional planning programs. GrC
- 5630. REGIONAL DEVELOPMENT SYSTEMS.** (4 undergrad cr, 3 grad cr; prereq 1030 or Econ 1001 and 1002)
Role of market economy and public sector activities in industry location and investment. Relation of interindustry structure and trade to community economic development. Computer simulation and forecasting of alternative economic futures for regional planning. GrC

AKKADIAN

See Near and Middle Eastern Studies.

American Indian Studies (AmIn)

Staff—*Chairman*, Russell Thornton, 812 Social Sciences Building

Associate Professors: Dunnigan, Thornton

Assistant Professor: Buffalohead

Instructors and Lecturers: Leventhal (lecturer), Raymond (lecturer), Voights, Wapp

American Indian Studies is concerned with traditional and contemporary Indian nations, tribes, bands, and groups located in what is now the United States, Canada, and northern Mexico.

B.A. MAJOR SEQUENCE

Major Requirements—3025 or 3035 or 3026 or 3036; 3111 and 3112; 3311; 3772; 3242 or 5214; 5411; 5422 or 5423

Two additional AmIn or other 3xxx or 5xxx courses approved by major adviser

Introductory Courses

- 1771. INTRODUCTION TO AMERICAN INDIAN STUDIES.** (4 cr) Voights
Content, methods, and objectives of American Indian studies. Images of the American Indian, persistence of and change in American Indian communities, linguistics and literature, and tribal ethnohistories. GrC
- 3772. RESEARCH METHODS.** (4 cr) Dunnigan
Research strategies and techniques. GrC

Language and Culture

- 1021-1022-1023. BEGINNING OJIBWE.** (5 cr per qtr) Staff
Acquisition of speaking skills in Ojibwe. GrA
- 1031-1032-1033. BEGINNING DAKOTA.** (5 cr per qtr) Staff
Acquisition of speaking skills in Dakota. GrA
- 3024-3025. INTERMEDIATE OJIBWE.** (5 cr per qtr; prereq 1023) Staff GrA
- 3034-3035. INTERMEDIATE DAKOTA.** (5 cr per qtr; prereq 1033) Staff GrA
- 3026. OJIBWE HISTORY AND CULTURE.** (4 cr) Staff
The processes of maintenance and change in Ojibwe culture. GrC
- 3036. DAKOTA HISTORY AND CULTURE.** (4 cr) Staff
The processes of maintenance and change in Dakota culture. GrC

- 5027. LINGUISTIC STRUCTURES OF OJIBWE.** (4 cr; prereq Ling 1001 or 3001 or 5001 or §) Dunnigan
Analysis of Ojibwe grammar. GrA
- 5037. LINGUISTIC STRUCTURES OF DAKOTA.** (4 cr; prereq Ling 1001 or 3001 or 5001 or §) Dunnigan
Analysis of Dakota grammar. GrA
- 5048. INDIANS OF THE UPPER MIDWEST.** (4 cr per qtr; prereq 3111, 3112 or §) Voights
History, social structure, and intertribal relations of American Indian tribes in the Upper Midwest. GrC

History

- 3111. AMERICAN INDIAN HISTORY: ANTIQUITY TO 1887.** (4 cr) Voights
Life-styles of tribal groups and their survival as distinct cultural entities throughout colonization. GrC
- 3112. AMERICAN INDIAN HISTORY: 1887 TO PRESENT.** (4 cr; prereq 3111 or §) Voights
Impact of federal Indian policy on American Indian tribes. GrC
- 3121. HISTORY OF AMERICAN INDIAN EDUCATION.** (4 cr; prereq 3111, 3112 or §) Buffalohead, Thornton
American Indian education in the United States; emphasis on educational systems established by the Indian peoples. GrC
- 3131. SURVEY OF INDIAN LAW.** (4 cr) Leventhal
Treaties, legislation, court cases, and administrative units examined in historical context and for their vitality today and their effect on Indian identity. GrC

Tribal Arts and Music

- 3221. CONTEMPORARY AMERICAN INDIAN ARTS.** (4 cr) Wapp
American Indian art in the 20th century. GrD
- 3242. THE ARTS AND CRAFTS OF AMERICAN INDIANS.** (4 cr) Wapp
Visual arts and crafts of North American Indians. GrD
- 5214. AMERICAN INDIAN MUSIC: VOCAL SURVEY.** (4 cr; prereq §) Wapp
Vocal technique, instrumental accompaniment, and song traditions among native North Americans. GrD
- 5215. AMERICAN INDIAN MUSIC: TRADITIONAL SINGING AND DANCE.** (4 cr; prereq 5214 or §) Wapp
Traditional dances of native North Americans. History, step patterns, and songs of selected American Indian dances. GrD

Contemporary Issues

- 3311. THE AMERICAN INDIAN POPULATION IN THE UNITED STATES** (4 cr) Thornton
The numbers, geographic distribution, and basic characteristics of Indian nations, tribes, bands, and groups within the United States. GrC
- 5322. CONTEMPORARY INDIAN EDUCATION.** (4 cr; prereq 3131 or §) Buffalohead
Critical issues in the education of American Indian youth. GrC
- 5332. CONTEMPORARY ISSUES IN INDIAN LAW.** (4 cr; prereq 3131 or §) Leventhal
Specific questions in Indian law currently the subject of litigation, legislative inquiry, administrative hearings, or Indian activism. GrC
- 5341. CONTEMPORARY INDIAN MOVEMENTS.** (4 cr) Thornton
Organizations and social movements during the 20th century. GrC

Tribal Development

- 5411. URBAN INDIAN COMMUNITIES.** (4 cr; prereq 3061 or 3311 or §) Buffalohead, Raymond
Social science and historical analysis of the rapid cityward Indian migration since World War II. GrC
- 5422. CHANGE AND DEVELOPMENT IN INDIAN COMMUNITIES.** (4 cr; prereq 3061 or 3112 or §) Raymond
Sources, nature, and consequences of social and economic development and change in Indian communities. GrC
- 5423. TRIBAL POLICY AND PROGRAM DEVELOPMENT.** (4 cr; prereq 3112 or 3311 or §) Raymond, Thornton
Tribal policy, formulation processes, selected policy issues; related programs and services. GrC

Course Descriptions—Major Sequences

Special Topics

- 5920. SEMINAR IN AMERICAN INDIAN STUDIES.** (Cr ar; prereq stated in the *Class Schedule*)
Staff
Topics in American Indian history, selected on a year-to-year basis.
- 5960. TOPICS IN AMERICAN INDIAN STUDIES.** (Cr ar; prereq 3061 or ♯) Staff
Topics will be listed in the *Class Schedule*.

Tutorial

- 3810. FIELD PRACTICE IN INDIAN STUDIES.** (3-9 cr per qtr; prereq soph or jr or sr, ♯, Δ)
Staff
Supervised field practice in approved agencies serving Indian clients. GrC
- 3980. DIRECTED INSTRUCTION.** (5 cr per qtr; prereq ♯) Staff
Seminar in teaching skills for undergraduates assisting in introductory American Indian studies courses. Leading discussion sections, offering lectures.
- 5900. DIRECTED RESEARCH.** (4-15 cr per qtr; prereq by petition only) Staff
Independent research under faculty guidance.

American Studies (AmSt)

Staff—*Chairman*, Roland A. Delattre; *Acting Chairman, 1976-77*, George S. Hage, 225 Lind Hall

Associate Professor: Delattre (on leave 1976-77)

Assistant Professor: Horwitz (visiting)

Adjunct Faculty—Professors: Anderson (English), Bagley (Social, Psychological, and Philosophic Foundations of Education), Beck (Social, Psychological, and Philosophic Foundations of Education), Berman (History), Bowron (English), Brauer (History), Chambers (History), Hage (Journalism), Howe (History), Johnson (Sociology), Kwiat (English and Humanities), Lukermann (Geography), Murphy (History), Noble (History), Riedel (Music), Roth (English), Sibley (Political Science), Spencer (Anthropology), Stekert (English), Stone (Sociology), Stuewer (Physics and History of Science and Technology), Torbert (Art History), Vecoli (History), Wilson (History of Medicine)

Associate Professors: Bales (English), Born (Health Ecology), Geffen (English), Green (History), McCrary (History), Modell (History), Spear (History), Ward (Communication and Journalism)

Assistant Professor: Buffalohead (American Indian Studies)

The program in American Studies provides an interdisciplinary framework for exploration of approaches to American culture, past and present, and the relationships among aspects of life and experience in the United States.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—12 cr from 1101, 1102, 1103, 3111, 3112, 3113

Major Requirements—44 cr in courses approved by major adviser, 8 to 12 in each of four fields: American history, American literature, American art and philosophy, social sciences in the United States. Courses accepted for the degree are described in the brochure *Program in American Studies* and listed in the annually revised list of approved courses, both obtainable in the program office, 225 Lind Hall.

3301-3302

12 cr in courses dealing with foreign civilizations chosen in consultation with major adviser

1101f, 1102w, 1103s. AMERICAN LIFE. (4 cr per qtr)

Each quarter is organized around a topic such as individualism in American life and thought, religious and philosophic attitudes in relation to American civilization, or rise of American nationalism and its place in the modern world. GrC,D

1920. TOPICS IN AMERICAN STUDIES. (4 cr per qtr [12 cr max])

Topics specified in the *Class Schedule*.

3111f, 3112w, 3113s. INTRODUCTION TO AMERICAN CIVILIZATION. (4 cr per qtr)

Each quarter is organized around a topic, a period, or a region. GrC,D

3301-3302. PROSEMINAR: AMERICAN STUDIES. (4 cr per qtr; prereq sr, #)

Each quarter is organized around a problem presented by some representative theme, figure, or period. GrC,D

3920. TOPICS IN AMERICAN STUDIES. (4 cr per qtr [12 cr max]; prereq jr or sr)

Topics specified in the *Class Schedule*.

3970. DIRECTED STUDIES. (1-15 cr per qtr; prereq # and Δ)

Guided individual reading or study.

5101f, 5102w. RELIGION IN AMERICA. (4 cr per qtr) Delattre

A representative profile of religion in America, past and present, organized each quarter around a theme or problem. GrC,D

Anatomy (Anat)

Medical School

For courses in human anatomy, see the *Medical School Bulletin*.

1004f,s. ELEMENTARY ANATOMY. (4 cr; prereq students in paramed fields, 1 qtr college biology)

3970. DIRECTED STUDIES. (1-5 cr; prereq #)

Guided individual reading or study.

ANCIENT NEAR EASTERN AND JEWISH STUDIES

See Near and Middle Eastern Studies.

Anthropology (Anth)

Staff—Chairman, Eugene Ogan, 219 Ford Hall; **Director of Undergraduate Studies,** Janet Spector

Professors: Gerlach, Johnson, Kiste (on leave fall 1976), Miller, Murrill, Rowe, Spencer (on leave fall 1976)

Associate Professors: Ingham, Gibbon, Gudeman, Ogan, Sarles

Assistant Professors: Cassidy (on leave 1976-77), Prell-Foldes, Puleston, Spector

Anthropology is the study of human cultural, social, and biological groupings, past and present. It analyzes the nature and processes of change in these groupings, emphasizing cross-cultural comparisons.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1101, 1102

Major Requirements—Minimum of seven 3xxx and 5xxx courses to include:

Group I: 5 cr in method, theory, and technique courses

Group II: 5 cr in ethnography (32xx or 52xx), 5 cr in archaeology (55xx)

Group III: 20 cr

Anth 3211 and 5511 are open to sophomores with grades of C or higher in 1102.

Course Descriptions—Major Sequences

General Education—1101 and 1102, concerning human culture in all times and places, are singularly appropriate for general and liberal education. 3131, 5131, 5141, 5151, 5161, and all ethnography and archaeology courses in Group II are appropriate for the nonmajor.

- 1101. INTRODUCTION TO PREHISTORY.** (5 cr)
World prehistory as investigated by archaeologists; methods and concepts employed by archaeologists in the study of prehistoric human biological and cultural development. GrC
- 1102. INTRODUCTION TO SOCIAL AND CULTURAL ANTHROPOLOGY.** (5 cr)
Varieties and range of human behavior as revealed through comparative study of cultures in all parts of the world. GrC
- 1102H. HONORS COURSE: INTRODUCTION TO SOCIAL AND CULTURAL ANTHROPOLOGY.** (5 cr; prereq B avg or §) GrC
- 3001. HUMAN BIOLOGY.** (5 cr; prereq 1101 and 1102 or introductory biology course and 1102 or §)
Organic evolutionary processes in modern humans; simple genetic traits and polygenic traits. The concept of race. Possible directions of future human evolutionary development. GrC
- 3002. PRIMATE AND HUMAN EVOLUTION.** (5 cr; prereq introductory biology course or §)
Origins and relationships of extinct forms of nonhuman primates and humans. GrC
- 3960. ANTHROPOLOGY PROSEMINAR.** (Cr ar, prereq §)
Course varies according to staff interests and student suggestions. Focus on significant theoretical problems. GrC
- 3970. DIRECTED STUDIES.** (Cr ar; prereq §)
Guided individual reading or study.
- 3980. DIRECTED INSTRUCTION.** (5 cr; prereq §)
Teaching seminar for undergraduates assisting in instruction of introductory anthropology courses.
- 3991. HONORS SEMINAR.** (5 cr; prereq admission to anthropology honors program or §)
Problems of theory and method in branches of anthropology.
- 5102. PRINCIPLES OF CULTURAL ANTHROPOLOGY.** (5 cr, §1102; prereq jr standing only or §)
Elements of cultural anthropology. Range and variability of human behavior. Principles of cultural dynamics. GrC
- 5910, 5920. TOPICS IN ANTHROPOLOGY.** (Cr ar; offered by visiting professors when available)
Special courses in all branches of anthropology. Topics and prerequisites listed in *Class Schedules*.

GROUP I

- 3201. METHOD AND THEORY IN CULTURAL AND SOCIAL ANTHROPOLOGY.** (5 cr; prereq 1102 or §)
Description and explanation in anthropology. Role of theory in defining problems. Subjective and objective approaches in fieldwork. GrC
- 3301. METHOD AND THEORY IN ARCHAEOLOGY.** (5 cr, §5101; prereq 1101 or §)
Field methods, systems of data recording, analytical methods, and their conceptual bases. Abstract theory integrated with specific case material. Laboratory exercises in application of artifact analysis. GrC
- 3302. METHOD AND THEORY IN HUMAN BIOLOGY.** (5 cr, §5302; prereq 3001 and §)
Methods for study of past and extant populations. Topics vary from quarter to quarter; consult instructor for details. GrC
- 3376su. FIELD RESEARCH IN ARCHAEOLOGY.** (5-10 cr; prereq 1101 or §)
Archaeological field excavation, survey, and research in prehistoric sites in Minnesota. Excavation techniques, recordation, analysis and interpretation of archaeological materials. GrC
- 3377. LABORATORY TECHNIQUES IN ARCHAEOLOGY.** (5 cr, §5377; prereq 1101 or §)
Artifact analysis, preservation, cartography, photography, faunal and floral analysis, writing of site reports. GrC
- 5101. METHOD AND THEORY IN ARCHAEOLOGY.** (5 cr, §3301; prereq 1101 or §)
See description of 3301. GrC

5302. METHOD AND THEORY IN HUMAN BIOLOGY. (5 cr, §3302; prereq 3001 and §)
See description of 3302. GrC

5377. LABORATORY TECHNIQUES IN ARCHAEOLOGY. (5 cr, §3377; prereq 1101 or §)
See description of 3377. GrC

GROUP II

3211. INDIANS OF NORTH AMERICA. (5 cr; prereq 1102 or §)
Aboriginal cultures of native North America. Effects of culture contact. Contemporary problems of Indian reservations and communities. GrC

5221. INDIANS OF SOUTH AMERICA. (5 cr; prereq 1102 or §)
Ethnographic survey. Prehistory of various areas. Spanish and Portuguese contact; adjustment of various tribes to modern conditions. GrC

5222. PEOPLES AND CULTURES OF MIDDLE AMERICA. (5 cr; prereq 1102 or §)
Indian-Spanish-speaking peoples of Middle America. Processes of acculturation that have produced contemporary cultures of Mexico and Central America. GrC

5223. PEOPLES AND CULTURES OF THE CARIBBEAN. (5 cr; prereq 1102 or §)
Island and littoral cultures of the circum-Caribbean. Social structure, cultural pluralism, continuity, and change. GrC

5241. PEOPLES AND CULTURES OF AFRICA. (5 cr; prereq 1102 or §)
Key aspects of society, culture, and ecological adaptation of representative peoples in Africa south of the Sahara. Social, economic, political, and religious systems, aesthetic expression. Theoretical problems in African anthropology. GrC

5251. ISLAMIC CULTURE SPHERE. (5 cr; prereq 1102 or §)
Mohammed and founding of Islam. Development and spread of Islamic religion, law, government, and other institutions in Middle East, Africa, and Asia. Culture and society in contemporary Middle East. GrC

5258. ANTHROPOLOGICAL ANALYSIS OF AMERICAN CULTURE. (5 cr; prereq 1102 or §)
Anthropological perspectives on contemporary American culture and society; study of values, family organization, socialization and kinship, education and community integration. GrC

5261. INDIAN CULTURE AND SOCIETY. (5 cr; prereq 1102 or §)
Tribes, caste, and culture history in South Asia. Cultural influences from India in Southeast Asia. GrC

5263. MODERN INDIA: TOWNS AND CITIES. (5 cr; prereq 1102 or §)
Development of Indian towns and cities from anthropological perspectives; urban life, city growth and urban migration. GrC

5281. CULTURE AND SOCIETY IN CHINA AND JAPAN. (5 cr; prereq 1102 or §)
Chinese institutions and other cultural manifestations. Influence on cultures of Japan, Korea, and Vietnam. Analysis of and comparison between contemporary Chinese and Japanese societies. GrC

5291, 5292. PEOPLES AND CULTURES OF THE PACIFIC. (5 cr per qtr; prereq 1102 or §)
Comparison of cultures in Polynesia and Micronesia (5291) and Melanesia (5292). Impact of Western culture on island societies. Place of Oceania in anthropological thought. GrC

5511. ARCHAEOLOGY OF NORTH AMERICA. (5 cr; prereq 1101 or §)
Prehistoric archaeology of North America north of Mexico. Techniques, methods, and goals of prehistoric archaeology. GrC

5521. ARCHAEOLOGY OF MIDDLE AMERICA. (5 cr; prereq 1101 or §)
Developmental stage survey of major features of prehistoric cultures of Mexico and Central America. GrC

5531. OLD WORLD PREHISTORY. (5 cr; prereq 1101 or §)
Archaeological record of human cultural origins and developments in Pleistocene and early recent periods in Africa, Europe, and Asia. GrC

5532. EUROPEAN PREHISTORY. (5 cr; prereq 1101 or §)
Recent period prehistory. Origins, development, and dispersion of systems of food production; origins of urbanism. GrC

5533. SOUTH ASIAN PREHISTORY. (5 cr; prereq 1101 or §)
Origins and developments of major Asian cultural traditions. GrC

5591. PREHISTORY OF OCEANIA. (5 cr; prereq 1101 or §)
Archaeological evidence. Polynesia, Micronesia, Melanesia, Australia, and, when pertinent, Southeast Asia and the Americas. GrC

Course Descriptions—Major Sequences

GROUP III

Social and Cultural

- 3101. HISTORY OF ANTHROPOLOGY.** (5 cr; prereq 1102 and 15 cr in 3xxx and 5xxx courses)
Beginnings of anthropology as a discipline; associated intellectual climate and context. Subfields of archaeology, ethnology, physical anthropology, and linguistics. GrC
- 3131. RELIGION AND CULTURE.** (5 cr [no cr for majors]; prereq 1102 or §)
Comparative study of religion in its cultural contexts. GrC
- 5112. KINSHIP AND MARRIAGE.** (5 cr; prereq 1102, 3201 or §)
Systems of kinship and marriage in cross-cultural perspective; relationship to economic, religious, and political institutions; significance of kinship studies for theory and methods in social anthropology. GrC
- 5114. STRUCTURAL ANTHROPOLOGY.** (5 cr; prereq 1102, 3201 or §)
Assumptions, methods, and problems of structural anthropology; structural analysis of kinship, myth, and social organization. GrC
- 5115. ECONOMIC ANTHROPOLOGY.** (5 cr; prereq 1102, 3201 or §)
Systems of production and distribution, especially in nonindustrial societies. Relationship among economic and social, political, religious, psychological, and environmental factors. GrC
- 5116. CULTURAL ECOLOGY.** (5 cr; prereq 1101, 1102, one ethnographic area course or §)
The literature on cultural ecology; biological approach to ecosystems and population studies. GrC
- 5117. ENERGY, RESOURCE USE, AND SYSTEM CHANGE.** (5 cr; prereq 3201 or §)
Social-cultural system factors in the development, production, control, distribution, and use of energy, water, key resources, and food in the United States and other societies. Social-cultural evolution, interaction among different societies; growth and no-growth issues; emerging global interdependence. GrC
- 5131. ANTHROPOLOGY OF RELIGION AND FOLKLORE.** (5 cr; prereq 1102 or §)
Varieties and range of religious beliefs and practices. Relation of religion to other aspects of culture. Comparative analysis of folklore, myth, and oral literature. GrC
- 5132. SYMBOLIC ANTHROPOLOGY.** (5 cr; prereq 1102 and 5112 or §)
The study of culture as a system of symbols. GrC
- 5141. CULTURE AND PERSONALITY.** (5 cr; prereq 1102 or § [waived for majors in public health, nursing, psychology, sociology, and social work])
Role of culture in formation of personality. Individual adjustments to demands of culture. Psychological approach to culture. GrC
- 5144. THE ANTHROPOLOGY OF AMERICAN EDUCATION.** (3 cr, §Hed 5172; prereq HED 5178 or Anth 1002 or 1502 or 5145 or §HED 5178 or §Anth 1002 or §1502 or §5145 or §)
Application of anthropological principles to study of socialization, schooling, and cultural transmission in the United States. Utility of anthropological concepts for study of American education systems and analysis of introduced educational change. GrC
- 5145. ANTHROPOLOGY AND EDUCATION.** (5 cr, §HED 5171; prereq 1102 or §)
Cross-cultural perspectives in examining educational patterns; implicit and explicit cultural assumptions. Methods of and approaches to cross-cultural studies in education. GrC
- 5147. THE DYNAMICS OF PEDAGOGY IN HIGHER EDUCATION.** (5 cr; prereq §)
Cognitive, interactional, and performance aspects of teaching. Credibility, dialogue, the nature of idea flow, and continuity. Discussion of the "art of teaching." GrC
- 5151. CULTURAL CHANGE AND DEVELOPMENT.** (5 cr; prereq 1102 or §)
Processes of cultural change; invention, diffusion, and acculturation. Effects of colonialism, urbanization, and modernization. Analysis of developing societies. Applied anthropology. GrC
- 5152. ANTHROPOLOGY OF SOCIAL MOVEMENTS.** (5 cr; prereq 3201 or §)
Cross-cultural study of nature, process, and function of social, political, and religious movements of change. Theories and case studies, including Christianity, Islam, Asia, Africa, United States. GrC
- 5153. URBAN ANTHROPOLOGY.** (5 cr; prereq 1102 or §)
Structure and process in non-Western urban centers; the role of rural migrants, relationship of urbanism to political and economic development, role of voluntary associations, adjustment of kinship groups to urban life. GrC
- 5154. ANTHROPOLOGY OF COLONIALISM.** (5 cr; prereq 1102 or §)
Social, structural, symbolic, and psychological aspects of the societies of colonizers and the colonized; emphasis on South Asia, Oceania, and Puerto Rico. GrC

- 5155. ANTHROPOLOGY AND SOCIAL ISSUES.** (5 cr; prereq 1102 or §)
Anthropological views about poverty, racism, the myth of the melting pot, the Third World, and the social responsibilities of anthropology. GrC
- 5161. LANGUAGE AND CULTURE.** (5 cr; prereq 1102 or §)
Relation of language to behavior; languages as systems of thought, logic, and orientation, their impacts on cultures; selected linguistic and cultural systems; glottochronology. GrA
- 5162. KINESICS.** (5 cr; prereq §)
Human communication in micro and macro perspectives; nonverbal aspects of interaction within and across cultures. Video and cinematic methods of observation. Kinesiology, animal communication, the body as an information transmitting/handling device. GrC
- 5165. PERSPECTIVES IN HUMAN BEHAVIOR.** (5 cr; prereq §)
Approaches to human behavior discussed by professionals from a variety of disciplines. Similarities and differences in assumptions, approaches, goals. General aim will be toward an integrated interdisciplinary view. GrC
- 5301. COMPREHENSIVE SURVEY.** (5 cr; prereq sr or §)
Review and summary of the major fields, approaches, and materials of anthropology presented during undergraduate training. Ways in which specialization leads to separation. GrC
- 5316. FIELD METHODS IN SOCIAL AND CULTURAL ANTHROPOLOGY.** (5 cr; prereq 3201 or §)
Rationale underlying a variety of methods. Field projects. GrC
- 5366. METHOD AND THEORY IN ANTHROPOLOGICAL LINGUISTICS.** (5 cr; prereq 1102 or §)
Linguistic theory and practice as tools in fieldwork; phonological, morphological, and syntactic problems in world languages. GrC
- 5413. FIELD METHODS IN ANTHROPOLOGICAL LINGUISTICS.** (5 cr; prereq §)
Linguistic structures of one or two languages outside the Indo-European speech family. For students engaging in anthropological field research. GrA
- 5424. THE RESEARCH PROCESS IN ANTHROPOLOGY.** (5 cr; prereq satisfactory completion of at least one course in statistics and jr standing or §)
Statistical reasoning in the collection and analysis of anthropological data; problems of measurement; elementary model construction. GrC

Archaeology

- 5173. PREHISTORIC SOCIAL SYSTEMS: FOOD PRODUCING SOCIETIES.** (5 cr; prereq 1101, 3301 or §)
Problems faced by prehistoric food producing societies; cultural solutions and failures. Interpretation of archaeological data, particularly in application to the dynamics of prehistoric food production. GrC
- 5174. PREHISTORIC SOCIAL SYSTEMS: URBAN SOCIETIES.** (5 cr; prereq 1101, 3301 or §)
Comparative analysis of prehistoric urban societies. Recurring urban social systems; the processes leading to their development and transformation. GrC
- 5175. ETHNOARCHAEOLOGY.** (5 cr; prereq 1101, 3301 or §)
The ethnohistoric and direct historic approaches in archaeology. Archaeological methods used to study the nature and consequences of interaction between North American Indians and Euro-American populations, 15th to 19th centuries. GrC
- 5176. ENVIRONMENTAL ARCHAEOLOGY.** (5 cr; prereq 1101, 3301 or §)
Field and laboratory techniques used to reconstruct past environmental conditions. Paleocological interpretation. GrC

Human Biology and Physical Anthropology

- 3386. COMPARATIVE PRIMATE OSTEOLOGY.** (5 cr, \$5386; prereq 1102 or §)
Comparative osteology of man and anthropoid apes. Variations related to sex, age, and race. Observations and measurements on the skeleton. GrC
- 5183. HUMAN PHYSICAL GROWTH AND DEVELOPMENT.** (5 cr)
Period of growth—prenatal, birth, infancy, childhood, and adolescence. Sex differences in growth, skeletal maturation. Development and growth of the head. Growth and eruption of teeth. GrC
- 5185. MEDICAL ANTHROPOLOGY.** (5 cr; prereq 1102, 3001, and §...or introductory biology and introductory social science course and §)

Course Descriptions—Major Sequences

Humans in health and disease, from biological and cultural points of view. The origins of human disease, relationship of disease to subsistence technique (hunter-gatherer to industrial), notions of disease causation; medical care in Western and non-Western societies; effects of the introduction of Western medicine on non-Western societies. GrC

5187. THEORIES OF DISEASE CAUSATION AND TREATMENT IN NONURBAN SOCIETIES. (5 cr; prereq 1102, 3001, and §...or introductory biology and introductory social science course and §)

Concepts of disease and treatment of the ill in tribal and folk societies. GrC

5386. COMPARATIVE PRIMATE OSTEOLOGY. (5 cr, \$3386; prereq 1102 or §)
See description of 3386. GrC

ARABIC

See Near and Middle Eastern Studies.

ARAMAIC

See Near and Middle Eastern Studies.

Architecture (Arch)

Institute of Technology

Staff—Head, Ralph Rapson, 110 Architecture; *Director of Undergraduate Studies,* John S. Myers; *Director of Graduate Studies,* Walter K. Vivrett

Professors: Cerny, Clemence, Graffunder, Hodne, Iskander, Michelson, Myers, Parker, Rapson, Rauma, Stageberg, Vivrett, Winterowd

Associate Professors: Abrahamson, Bennett, Blair, Dittmar, Grebner, Holloway, Hysell, Lockhart, Thompson

Assistant Professors: Allan, Cuninghame, Diedrich, Fishman, Goodman, Johnson, Kodet, LaVine, Morrill, Rafferty, Thorbeck, Tollefson, Zuber

Lecturers: Butler, Gieger, Ohlhausen, Robinson, Russek, Weeks, Wheeler

Architecture is an art and science that gives physical expression to the capacities, accomplishments, and ideas of people and their times. It is concerned with the total environment and, most importantly, the built environment. The architect seeks to plan, design, or construct enclosed and open space to encourage and promote human activities and heighten human aspirations.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Phys 1014-1024, 1015-1025 or 1121-1122; math, pre-calculus and Math 1211-1221; ArtS 1107, 1108, 1109 or 1101, 1102; Arch 1021, 1022, 1023; Comp 1001-1002

Major Requirements—3081-3082-3083, 3091-3092-3093

Three courses chosen from 5051, 5052, 5053, 5054, 5055, 5056

Curriculum Alternatives—The 4-year CLA program, leading to a B.A. in architecture, is primarily preprofessional training for admission to the Institute of Technology for 2 additional years of work toward the professional degree, bachelor of architecture, or 3 additional years of work for the master of architecture. Students

who intend to seek professional degrees should include AEM 3092-3093**, ArtS 3140, and CE 3600-3601**. Also desirable are Arch 3061-3062** and 3064-3065. Students wishing a degree of specialization in environmental design should take Arch 1001, 1002, and 1003.

The *Institute of Technology Bulletin* lists requirements for the B.Arch. degree; the *Graduate School Bulletin* lists those for the M.Arch.

- 1001f. ENVIRONMENTAL DESIGN: MAN AND ENVIRONMENT.** (4 cr, §LA 1001)
Interaction of man and environment, using natural and social sciences and the arts as background for readings, lectures, discussions, and workshop sessions. GrC
- 1002w. ENVIRONMENTAL DESIGN: TOOLS AND PROCESSES.** (4 cr, §LA 1002; prereq 1001)
Nature and the effects of various tools and processes of environmental change, ranging from buildings and landscapes to economic policies, climate, and myths. Readings, lectures, discussions, and workshop sessions. GrC
- 1003s. ENVIRONMENTAL DESIGN: IMPLEMENTATION AND EVALUATION.** (4 cr, §LA 1003; prereq 1002)
Design projects, discussions, and readings exploring personal abilities to implement and evaluate environmental change. GrC
- 1021f. HISTORY OF ENVIRONMENTAL DEVELOPMENT: ARCHITECTURE.** (4 cr, §LA 1021; 4 lect hrs per wk)
Introduction to architecture; its philosophy and principles as an art; architectural history; development of contemporary architecture from 19th-century roots to the present. GrD
- 1022w. HISTORY OF ENVIRONMENTAL DEVELOPMENT: LANDSCAPE ARCHITECTURE.** (4 cr, §LA 1022; 4 lect hrs per wk)
Introduction to landscape architecture. Forces and individuals that shaped the form of landscape in 19th- and early 20th-century America. GrD
- 1023s. HISTORY OF ENVIRONMENTAL DEVELOPMENT: PLANNING.** (4 cr, §LA 1023; 4 lect hrs per wk)
Urban planning. Rise and history of cities as centers of civilization. Collaboration among disciplines for improving the quality of the urban environment and of human life in cities. GrD
- 3061-3062. BUILDING SYSTEMS.** (5 cr per qtr [does not carry cr toward the BA]; prereq concurrent regis in architectural design; 4 lect hrs per wk)
Building systems, subsystems, and components; principles of structural theory; materials and methods used in building; new and developing technologies.
- 3064-3065. ENVIRONMENTAL MANAGEMENT AND CONTROL.** (5 cr per qtr; prereq 3062; 4 lect hrs per wk)
Environmental-mechanical considerations: comfort technology, space habitability, climate, psychometrics, control and management systems; waste management including plumbing systems and waste disposal techniques. Electrical systems, energy, power distribution and machinery; lighting systems, physiology of seeing, light sources and control; spatial acoustics, noise barriers, absorption.
- 3081, 3082, 3083†. ARCHITECTURAL DESIGN.** (6 cr per qtr; prereq 2nd yr for IT students, jr for CLA students and Δ; 18 lab hrs per wk)
Composition of line, form, proportion, color, texture. Architectural design, drawing. Model making.
- 3091-3092-3093†. ARCHITECTURAL DESIGN.** (6 cr per qtr; prereq 3083; 18 lab hrs per wk)
Structures as an integral part of design; site planning.
- 3970. DIRECTED STUDIES.** (Cr ar; prereq ‡)
Individual programs to meet objectives not served in regular courses.
- 5051. ANCIENT ARCHITECTURE.** (4 cr; prereq 1021; 3 lect and 1 seminar hrs per wk)
Development of architecture and urban design in Egypt, Mesopotamia, Crete, Mycenae, and classical Greece and Rome before Christianity. GrD
- 5052. EARLY MEDIEVAL ARCHITECTURE.** (4 cr; prereq 1021; 3 lect and 1 seminar hrs per wk)
Architecture and urban design during Early Christian, Byzantine, Islamic, Carolingian, and Romanesque periods in the Near East and Western Europe until 1150. GrD
- 5053. GOTHIC ARCHITECTURE.** (4 cr; prereq 1021; 3 lect and 1 seminar hrs per wk)
Architecture and urban design in Western Europe from 1150 until 1400. GrD

**These courses do not carry CLA credit.

Course Descriptions—Major Sequences

- 5054. RENAISSANCE AND BAROQUE ARCHITECTURE.** (4 cr; prereq 1021; 3 lect and 1 seminar hrs per wk)
Architecture and urban design in Italy, Spain, France, Germany, and the Low Countries from 1400 to the French Revolution. GrD
- 5055. ENGLISH AND EARLY AMERICAN ARCHITECTURE.** (4 cr; prereq 1021; 3 lect and 1 seminar hrs per wk)
Pre-Columbian civilizations and development of architecture and urban design in America and England from 1500 until the Civil War. GrD
- 5056. MODERN ARCHITECTURE.** (4 cr; prereq 1021; 3 lect and 1 seminar hrs per wk)
Architecture and urban design from early 19th-century sources in Europe and America to the present. GrD
- 5101, 5102, 5103. TUTORIAL WORK IN HISTORY OF ARCHITECTURE.** (4 cr per qtr; prereq §; 1 conf and 5 research hrs per wk)
Reading and written reports on historical problems.
- 5104. SEMINAR: EUROPEAN ARCHITECTURE.** (4 cr; prereq 5056 or §; 4 seminar hrs per wk)
Contemporary architecture from the beginning of the modern movement to the present; contributions of August Perret, Peter Behrens, Walter Gropius and the Bauhaus, Le Corbusier, and the early work of Mies van der Rohe.
- 5105. SEMINAR: SCANDINAVIAN ARCHITECTURE.** (4 cr; prereq 5056 or §; 4 seminar hrs per wk)
Scandinavian architectural history; origin and development of modern architecture in Denmark, Finland, Norway, and Sweden.
- 5106. SEMINAR: AMERICAN ARCHITECTURE.** (4 cr; prereq 5056 or §; 4 seminar hrs per wk)
Contemporary United States architecture from the period of Henry Hobson Richardson to the present; the contributions of Louis H. Sullivan, Frank Lloyd Wright and his "Prairie School" contemporaries, Eliel and Eero Saarinen, and the later works of Walter Gropius and Mies van der Rohe. Field trip.
- 5115-5116. STRUCTURE AND FORM IN ARCHITECTURE.** (4 cr per qtr; prereq AEM 3093; 2 lect and 3 seminar hrs per wk)
Form as an interface between programmatic requirements for environmental change and the physical means available to the architect; social paradigm and physical environment; search for organizational principles of architectural form: geometrical order, properties of materials, distribution of forces, construction techniques; experimental work on models.
- 5121-5122. ARCHITECTURAL DESIGN.** (9 cr per qtr; prereq 5113 and CE 5601; 27 lab hrs per wk)
Urban building design and development. Individual and collaborative effort; analysis of urban problems, reporting and preparation of large-scale proposals.
- 5126. PROFESSIONAL PRACTICE.** (4 cr [does not carry cr toward the BA]; prereq 3093; two 2-hr seminars per wk)
Relations of architect to clients, contractors, and fellow practitioners; procedures of architectural practice; preparation of contract documents. Field trips.
- 5130. PLANNING: THE DEVELOPMENT OF URBAN FORM.** (3 cr; prereq §; hrs ar)
Physical development of urban place from early Middle East urban revolution to the Industrial Revolution; changes in social, political, and economic forces and planning theories to which they gave rise.
- 5134, 5135, 5136. PLANNING.** (3 cr per qtr; prereq §)
Tutorial work in planning and research.
- 5137. PLANNING: URBAN FUNCTION AND STRUCTURE.** (4 cr; prereq §)
Economic, technological, and social factors that underlie the location, distribution, and internal structure of urban settlements. Quantitative and qualitative analyses of social, economic, and physical problems or consequences of contemporary urbanization.
- 5138. PLANNING: THEORY AND METHODOLOGY.** (4 cr; prereq 5137 or §)
Logic of a planning process as a method of decision making. Formulation of goals and evaluation of alternative courses of action, standards, and requirements for specific planning objectives (housing, transportation, community facilities). Legal, administrative, and fiscal devices for plan implementation. The planning function in government; the role of citizens and private groups.
- 5151, 5152, 5153. THEORY OF ARCHITECTURE.** (2 cr per qtr; prereq §)
Architecture in a philosophical and theoretical context.

- 5170. CITYSCAPE.** (3 cr; prereq 3093 or §; hrs ar)
The city and its components as aesthetic elements. Factors that have helped to generate urban form.
- 5970. DIRECTED STUDIES.** (Cr ar; prereq §)
Individual programs to meet objectives not served in regular courses.

Art History (ArH)

Staff—Chairman, Marion Nelson, 108a Jones Hall; **Director of Undergraduate Studies,** John Steyaert, 209 Jones Hall

Professors: Canedy (on leave spring 1977), McNally, Nelson, Sheppard, Simon, Torbert, Waldfogel (on leave fall 1976)

Associate Professors: Asher, Cooper, Poor, Stones (on leave)

Assistant Professors: Paskus, Steyaert (on leave fall 1976), Stoughton

The Department of Art History seeks to help students develop an awareness and knowledge of their visual environment through examination of architecture, sculpture, painting, and other related arts.

For advanced work in art history, the department offers professionally oriented courses leading to a B.A. degree. M.A. and Ph.D. degrees in the history of art and an M.A. in museology are also offered.

General Courses—All lxxx courses are designed for general audience, and most 3xxx courses serve this purpose although they also form the basis for undergraduate majors.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—4 cr art practice (consult undergraduate studies director); 5 qtrs or equiv in a second language (Route II does not satisfy this requirement)

Major Requirements—3008, 3009, 3011, 3012; 5 additional art history courses (no more than three can be at the 5xxx level)

1001. INTRODUCTION TO THE VISUAL ARTS. (4 cr, §3001; 3 lect hrs and 1 lab hr per wk)
Torbert

Basic problems of art. Major visual arts examples as basis for study of the nature of art, problems of design, materials and techniques, presented topically rather than chronologically. GrD

1008. CONCEPTS IN ANCIENT ART. (4 cr, §3008) McNally

The art of Egypt, Mesopotamia, Greece, and Rome. Visual analysis, problems of style as a cultural phenomenon, and methods and standards of criticism. Taught with individualized instructional units, including slides synchronized with tapes. GrD

1015. ART IN WESTERN CIVILIZATION. (4 cr; 3 lect hrs and 1 lab hr per wk) Waldfogel

Major achievements of Western man in the arts in their historical and cultural settings. Sir Kenneth Clark's 13 hour-length films entitled "Civilization" take the place of lectures. Interdisciplinary. GrD

1016. INTRODUCTION TO ASIAN ART. (4 cr, §3013; 3 lect hrs and 1 lab hr per wk) Asher, Poor
Major themes of Indian and Far Eastern art. GrD

1016H. HONORS COURSE: INTRODUCTION TO ASIAN ART. (4 cr, §3013) Asher, Poor
See 1016. GrD

1017. THE WESTERN TRADITION. (4 cr; 3 lect hrs and 1 lab hr per wk) Sheppard

Contrasts of Far Eastern, Islamic, and primitive cultural traditions to those of the Western world. GrD

3001. PRINCIPLES OF THE VISUAL ARTS. (4 cr, §1001) Torbert

Similar to 1001, with expanded reading and contact with works of art. GrD

Course Descriptions—Major Sequences

- 3008. HISTORY OF ANCIENT ART.** (4 cr, §1008) Asher, Cooper, McNally
Architecture, sculpture, and painting of selected early cultures; stress on those contributing to the development of Western art. GrD
- 3009. HISTORY OF MEDIEVAL ART.** (4 cr) Sheppard, Steyaert, Stones
Medieval architecture, painting, and sculpture from Early Christian to Gothic period. Individualized instructional units including slides synchronized with tapes, or lectures only, depending on instructor. GrD
- 3011. HISTORY OF RENAISSANCE AND BAROQUE ART.** (4 cr) Canedy, Stoughton
Major monuments in architecture, sculpture, and painting from the early 14th century through the Baroque period. GrD
- 3012. HISTORY OF 19TH- AND 20TH-CENTURY ART.** (4 cr) Cooper, Nelson, Paskus
Major monuments and concepts of the modern period: sculpture, architecture, painting, and prints. GrD
- 3013. INTRODUCTION TO FAR EASTERN ART.** (4 cr, §1016) Asher, Poor
Major themes of Far Eastern art. The arts of China and Japan (not all-inclusive). GrD
- 3014. ART OF INDIA.** (4 cr) Asher
Indian sculpture and architecture from the prehistoric Indus Valley civilization through the major historical periods. Hindu and Buddhist art from 300 B.C. to 1200 A.D. GrD
- 3015. TOPICS IN INDIAN ART.** (5 cr; prereq 3014; offered alt yrs) Asher
Buddhist art in India and Southeast Asia. GrD
- 3152. GREEK ART.** (5 cr, §Clas 3152; offered alt yrs) Cooper, McNally
The classical style of ancient Greece: origins, characteristics, and importance to later culture. GrD
- 3162. ROMAN ART AND ARCHAEOLOGY.** (5 cr, §Clas 3162; prereq 1008 or 3008 or 3152)
Cooper, McNally
Roman art and material culture: origins, change, continuity, "progress" or "decay" in the later Empire. GrD
- 3212. PATRONS, DOCUMENTS, AND MEDIEVAL ART.** (4 cr; prereq 4 cr of medieval art history or medieval history; offered alt yrs) Stones
Specific artistic objects and buildings studied in relation to written evidence about the historical circumstances of their production. GrD
- 3224. GOTHIC ART.** (4 cr; prereq 3009) Steyaert
Basic concepts of Gothic style in architecture, sculpture, and painting. Relevance of Gothic to later Western art. GrD
- 3303. BAROQUE AND ROCOCO PAINTING IN FRANCE.** (4 cr, §5357) Stoughton
French painting of the 17th and first half of the 18th centuries. GrD
- 3448. THE VISUAL ARTS IN AMERICA.** (4 cr; offered alt yrs) Torbert
American architecture, sculpture, painting. Decorative and industrial arts from early colonial days to mid-20th century. GrD
- 3465. MASTER PAINTERS OF THE 19TH CENTURY.** (4 cr) Waldfogel
European artists selected for their originality, aesthetic excellence, or subsequent influence: Goya, Constable, Cezanne, and Van Gogh. GrD
- 3466. THE ORIGINS OF MODERN ART.** (4 cr; prereq 4 cr of art history; offered when feasible)
Simon
The sources of modernism: Impressionism, Postimpressionism, Symbolism, Arts and Crafts Movement, Aestheticism, Art Nouveau. GrD
- 3467. MODERN ART.** (4 cr; prereq 4 cr of art history) Cooper, Simon
Major directions in late 19th- and 20th-century art. The influence of mass media advertising and advanced technology on modern art. GrD
- 3468. MODERN EXPRESSIONISM: VAN GOGH TO GIACOMETTI.** (4 cr; offered alt yrs) Simon
GrD
- 3654. SCANDINAVIAN ART FROM RENAISSANCE TO THE PRESENT DAY.** (4 cr; offered alt yrs) Nelson
Painting, sculpture, architecture, and decorative arts of the upper classes in Scandinavia; emphasis on 17th and 18th centuries. GrD
- 3895. METHODOLOGY I.** (4 cr; prereq art history major or §)
Use of bibliographies of art history periods. Reference and source materials. Proseminar.
- 3901-3902-3903†. MUSEUM EXHIBITION.** (2 cr per qtr; prereq sr and Δ; 1976-77 only)
Opportunity for a small group of major and nonmajor students to plan and present an exhibition, with printed catalog, at University Gallery. GrD

- 3909. SURVEY OF ISLAMIC ART.** (4 cr; offered when feasible)
Architecture, painting, and minor arts of the Islamic world. GrD
- 3921-3922-3923. ART OF THE FILM.** (4 cr per qtr; offered when feasible)
The motion picture as an art form. Films of exceptional merit or interest—narrative, poetic, documentary, experimental. GrD
- 3960. HONORS SEMINAR.** (5 cr; prereq permission of dept honors adviser)
Investigation of a selected problem.
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq #)
Guided individual reading or study.
- 3975. MUSEUM EXPERIENCE.** (2 cr; S-N only; prereq two art history courses at 3xxx level or one at 5xxx level)
Internship or docentship in an approved program in an art institution or museum. Open to majors and nonmajors wishing experience in museum work. GrD
- 3980. DIRECTED INSTRUCTION.** (4 cr per qtr [8 cr max]; prereq #)
- 5102. GREEK SCULPTURE.** (4 cr, §Clas 5102; prereq jr or #) Coulson
The archaic period through the 4th century B.C. Sculptors and styles of schools throughout Greece, Sicily and southern Italy, and Asia Minor. GrD
- 5103. HELLENISTIC ART AND ARCHAEOLOGY.** (4 cr, §Clas 5103; prereq jr or #) Coulson
Greek architecture, sculpture, ceramics, painting, and minor arts from the 4th century B.C. to the end of the Hellenistic period. City planning, public buildings, and topography of such sites as Athens, Olynthos, Corinth, Priene, Pergamon. GrD
- 5104. ROMAN ARCHITECTURE.** (5 cr, §Clas 5104; prereq 1008 or 3008 or 3162) Cooper, McNally
Buildings in Rome and the Empire from the 5th century B.C. to the 4th century A.D. Major archaeological sites. GrD
- 5105. ROMAN PAINTING AND MOSAICS.** (5 cr, §Clas 5105; prereq 1008 or 3008 or 3162) McNally
Roman painting and mosaics; specific problems; sites such as Pompeii and Antioch. GrD
- 5106. GREEK PAINTING.** (5 cr, §Clas 5106; prereq 5102 or 5103; offered every 3rd yr) McNally
Research and analysis in classical art as applied to study of vases; original objects and sources. GrD
- 5107. ROMAN SCULPTURE.** (4 cr, §Clas 5107; prereq 1008 or 3008 or 3162) Cooper, McNally
Sculpture from Rome and its provinces from the 1st century B.C. to the 4th century A.D.; the role of sculpture in Roman politics and religion. GrD
- 5108. GREEK ARCHITECTURE.** (4 cr, §Clas 5108; prereq 1008 or 3008 or 3152) Cooper, McNally
Archaic and classical examples of religious and secular architecture and their setting in major archaeological sites. GrD
- 5109. INTRODUCTION TO ETRUSCAN ART AND ARCHITECTURE.** (4 cr, §Clas 5109; prereq jr or #) Coulson
Architecture, sculpture, painting, and minor arts of Etruscans. Political, religious, and social setting. Methods of Etruscan archaeology. GrD
- 5111. BRONZE AGE ART AND ARCHITECTURE IN GREECE, CA. 3000-1100 B.C.** (4 cr; prereq one ancient art or archaeology course) Cooper
Artistic and architectural forms in the Neolithic period in the Aegean area and the Cycladic, Minoan, and Mycenaean cultures. GrD
- 5203. EARLY MEDIEVAL ART.** (5 cr; prereq 4 cr of medieval art history, grad or #) Sheppard
Architecture, sculpture, painting, and minor arts of the Mediterranean world and Western Europe from Early Christian to Romanesque period. GrD
- 5213. INTERNATIONAL GOTHIC PAINTING AND SCULPTURE.** (5 cr; prereq 4 cr of medieval art history or #; offered alt yrs) Stones
Patronage in major centers of culture (Prague, London, Milan, Paris, and Burgundy) in relation to the artistic production of the late 14th and early 15th centuries. GrD
- 5214. GOTHIC ARCHITECTURE.** (5 cr; prereq 4 cr of medieval art history or #; offered alt yrs) Sheppard, Stones
Gothic architecture from the mid-12th to the early 16th centuries in France, Germany, England, Italy, and Spain; later regional variants. GrD
- 5215. ROMANESQUE AND GOTHIC PAINTING.** (5 cr; prereq 4 cr of medieval art history or #; offered alt yrs) Stones
Wall and panel painting, mosaics, and manuscript illumination in France, Germany, England, Italy, and Spain from the 11th to the 14th centuries. GrD

Course Descriptions—Major Sequences

- 5234. GOTHIC SCULPTURE OF THE CATHEDRAL AGE.** (5 cr; prereq 3009, grad or §) Steyaert
Sculpture in France and Germany from 1150 to 1350. Stylistic evolution. GrD
- 5252. BYZANTINE ART.** (5 cr; prereq 5203 or §) Sheppard
Architecture, sculpture, and painting in the Eastern Christian regions from the founding to the fall of Constantinople in the 15th century; impact on the West. GrD
- 5253. ROMANESQUE SCULPTURE.** (4 cr; prereq 9 cr of art history or §) Sheppard
Sculpture in France and Italy in the 11th century manifested throughout Europe in the 12th and early 13th centuries. GrD
- 5261. THE ILLUMINATED BOOK.** (5 cr; prereq 4 cr of medieval art history or §; offered alt yrs) Stones
Production of illuminated books in the Middle Ages; evolution in types, decorative schemes, and style. GrD
- 5306. ITALIAN ART OF THE 14TH CENTURY.** (4 cr; prereq one art history course or §; offered alt yrs) Canedy
Emergence of Italian painting and the proto-Renaissance; subsequent counterdirections during the Black Death and International Style periods. GrD
- 5307. 15TH-CENTURY ITALIAN ARCHITECTURE, SCULPTURE, AND PAINTING.** (4 cr; prereq 3011 or §) Canedy
Early Renaissance art from Brunelleschi to Bellini; development of the "repertory" of monument types that survived to modern times. GrD
- 5313. ITALIAN HIGH RENAISSANCE ARCHITECTURE, SCULPTURE, AND PAINTING.** (4 cr; prereq 3011, grad or §) Canedy
Leonardo da Vinci, Michelangelo, Raphael, and Titian and lesser artists working in Florence, Rome, Venice, and northern Italy. Painting emphasized. GrD
- 5314. LATER 16TH-CENTURY ITALIAN ARCHITECTURE, SCULPTURE, AND PAINTING.** (5 cr; prereq 5313, grad or §; offered alt yrs) Canedy
Mannerism and other trends between the High Renaissance and the Baroque. GrD
- 5315. DRAWINGS AND GRAPHICS OF THE RENAISSANCE.** (5 cr; prereq 5307 or 5313 or grad or §; offered alt yrs) Canedy
Drawings and graphics from the early Renaissance to the Baroque. Original works. GrD
- 5324. 15TH-CENTURY PAINTING IN NORTHERN EUROPE.** (5 cr; prereq 3009 or 3011, grad or §) Steyaert
Painting in the Netherlands, France, and Germany during the late Gothic period; its influences. GrD
- 5326. 16TH-CENTURY PAINTING IN NORTHERN EUROPE.** (4 cr; prereq 3011, grad or §; offered alt yrs) Steyaert
Northern Renaissance painting in Germany, the Netherlands, and France. GrD
- 5346. BAROQUE ART IN ITALY AND SPAIN.** (5 cr; prereq 3011, grad or §; offered alt yrs) Stoughton
Italian sculpture, painting, and architecture and Spanish painting of the 17th century. GrD
- 5347. BAROQUE ART IN ENGLAND, FRANCE, AND LOWLANDS.** (5 cr; prereq 3011, grad or §; offered alt yrs) Stoughton
French architecture, painting, and sculpture, Flemish and Dutch painting, and English painting and architecture of the 17th century. Major artists: Rembrandt, Rubens, Poussin, Jones. GrD
- 5357. 18TH-CENTURY ART IN FRANCE.** (4 cr; prereq 3011, grad or §; offered alt yrs) Stoughton
Rococo and neoclassical painting, sculpture, and architecture. GrD
- 5358. 18TH-CENTURY ART IN ITALY, GERMANY, AUSTRIA.** (4 cr; prereq 3011, grad or §) Stoughton
Italian painting, sculpture, and architecture; German and Austrian architecture. GrD
- 5441. EARLY 19TH-CENTURY FRENCH PAINTING.** (5 cr; prereq one 3xxx or 5xxx course or grad or §) Waldfoegel
Major styles and movements in France and their leading exponents: neoclassicism—David; romanticism—Corot and Delacroix; early realism—Millet and Daumier. GrD.
- 5442. LATER 19TH-CENTURY FRENCH PAINTING.** (5 cr; prereq one 3xxx or 5xxx course or grad or §) Waldfoegel
Major styles and movements: realism, impressionism, postimpressionism, symbolism, fin de siècle. GrD
- 5443. 19TH-CENTURY GERMAN PAINTING.** (5 cr; prereq one 3xxx or 5xxx course or grad or §) Waldfoegel

- Major movements, groups, and artists in the Germanic lands: the Nazarenes, Biedermeier, the Leibl circle, Friedrich, Menzel, Marées, Böcklin, Liebermann, Corinth. GrD
- 5444. LANDSCAPE PAINTING.** (5 cr; prereq one 3xxx or 5xxx course or grad or §) Waldfogel
Painting and theory in Europe, 1600 to 1900. Developments in England and France from the mid-18th century. GrD
- 5455. GEORGIAN AND VICTORIAN PAINTING.** (5 cr; prereq 4 cr art history, 19th-century literature, history or §; offered alt yrs) Waldfogel
English painting of the 18th and 19th centuries in relation to social and intellectual developments at home and abroad. GrD
- 5463. EARLY 20TH-CENTURY PAINTING.** (5 cr; prereq one American or modern art course or §)
Simon, Paskus
Topics and/or movements in painting, mainly before the mid-1920's. GrD
- 5464. LATER 20TH-CENTURY PAINTING.** (5 cr; prereq one American or modern art course or §; offered alt yrs) Simon, Paskus
Painting after the mid-1920's. GrD
- 5465. MODERN SCULPTURE.** (5 cr; prereq 3012 or two art history courses; offered when feasible)
Simon
Sculpture from Rodin to the present. Trends and monuments. GrD
- 5466. THE AVANT-GARDE.** (5 cr; prereq 3012 or 5463 or §; offered alt yrs) Simon
History and theory of the "avant-garde" in contemporary art. Contributions of McLuhan, Buckminster Fuller, Cage, Greenberg, Sontag, and rock music. Influence of the "counterculture." GrD
- 5468. MODERN ART CRITICISM I.** (5 cr; prereq 3012 or 3467 or 5463 or 5465 or §) Simon
Critics of visual art from the late 18th century to World War II, Diderot to Herbert Read. GrD
- 5469. MODERN ART CRITICISM II.** (5 cr; prereq 3012 or 3467 or 5463 or 5465 or §) Simon
Critical approaches to modern art from World War II to the present; influential contemporary working critics. Criticism workshop. GrD
- 5521. 20TH-CENTURY ART IN THE UNITED STATES.** (4 cr; prereq 4 cr of art history) Cooper
Contemporary movements in American painting and sculpture beginning in early 20th century with "The Eight" and the Armory Show, 1913. GrD
- 5535. ART IN THE UNITED STATES.** (5 cr; prereq 4 cr of art history or §; offered alt yrs) Torbert
Painting and sculpture in the United States. Key works and artists from early settlement to the early 20th century. GrD
- 5536. TOPICAL STUDIES: ART IN THE UNITED STATES.** (5 cr; prereq 5535, §; offered alt yrs)
Torbert GrD
- 5545. AMERICAN ARCHITECTURE, TO 1860.** (5 cr; prereq sr, grad or §; offered alt yrs) Torbert
American building and European traditions that influenced it from earliest settlement to about 1860. GrD
- 5546. AMERICAN ARCHITECTURE, FROM 1860 TO 1914.** (5 cr; prereq sr, grad or §) Torbert
American developments and European influences from the Civil War to about 1914. New materials and structural methods. Hunt, Richardson, McKim, Mead and White, Sullivan, early Wright, others. GrD
- 5547. MODERN AMERICAN AND EUROPEAN ARCHITECTURE, FROM 1914 TO PRESENT.**
(5 cr; prereq 5546) Torbert
Modern architecture on the international scene. Wright, Gropius, Mies, Le Corbusier, Perret, Nervi, Saarinen, Breuer, Rudolph, others. GrD
- 5641. SCANDINAVIAN ART OF THE 19TH AND 20TH CENTURIES.** (5 cr; prereq 3012 or 3467, grad or §) Nelson
Painting, sculpture, architecture, and decorative arts; the rise of expressionism in the fine arts and of "Scandinavian modern" in design. GrD
- 5643. PREHISTORIC ART OF NORTHERN EUROPE.** (4 cr; prereq 4 cr of art history or §) Nelson
Art north of the Alps from the Ice Age through the Celtic period. Cave painting, sculpture, funerary architecture, ceramics, and metalwork. GrD
- 5644. MEDIEVAL ART OF SCANDINAVIA.** (4 cr; prereq 3009, grad or §) Nelson
Migration, Viking, and Christian art in Scandinavia from the 5th through the 15th centuries. Architecture, sculpture, painting, and metalwork. GrD
- 5645. FOLK ARTS OF SCANDINAVIA.** (4 cr; prereq 4 cr of art history or §; offered alt yrs) Nelson
Wood carving, metalwork, decorative painting, weaving, stitchery, and domestic architecture of rural Scandinavia; origins in pagan and medieval art. GrD

Course Descriptions—Major Sequences

- 5725. CERAMICS IN THE FAR EAST.** (4 cr; offered alt yrs) Poor
Ceramic art in the Far East: China, Korea, and Japan, from Neolithic times to the present. GrD
- 5765. EARLY CHINESE ART.** (5 cr; offered alt yrs) Poor
Ancient ceramics and ritual bronzes, early Buddhist sculpture, early Chinese painting. GrD
- 5766. CHINESE PAINTING.** (5 cr; offered alt yrs) Poor
Major works from the 4th to the 17th centuries. Development of the landscape tradition and the literary genre of later Chinese painting. GrD
- 5767. JAPANESE PAINTING.** (4 cr; offered alt yrs) Poor
Japanese pictorial arts from earliest to modern times; development of indigenous traditions. GrD
- 5769. CONNOISSEURSHIP IN ORIENTAL ART.** (5 cr; prereq ♯; offered alt yrs) Poor
Direct examination of Oriental art objects in local collections. GrD
- 5775. EARLY INDIAN ART.** (5 cr; prereq 4 cr of art history or ♯) Asher
Sculpture and architecture from the Indus Valley civilization through the Kushana period. GrD
- 5776. LATER INDIAN ART.** (5 cr; prereq 4 cr of art history or ♯) Asher
Sculpture and architecture from the Gupta period through the 12th century. GrD
- 5777. PAINTING OF INDIA.** (5 cr; prereq 4 cr of art history or ♯) Asher
Painting, beginning with the early tradition of mural painting; miniature painting from the 12th century onward. GrD
- 5911. ARCHITECTURE AND SCULPTURE IN PRE-COLUMBIAN MESOAMERICA.** (5 cr; prereq sr or grad or ♯; offered alt yrs) Torbert
Pre-Hispanic monuments in Mexico and Guatemala; Olmec, Teotihuacan and Maya cultures. GrD
- 5921-5922-5923. ART OF THE FILM.** (4 cr per qtr; prereq ♯; offered when feasible)
Aesthetics of the film. Editing, montage, sound, use of the camera, etc. GrD
- 5950, 5960. TOPICS IN ART HISTORY.** (4-5 cr [10 cr max]; prereq ♯)
Topics specified in *Class Schedule*.
- 5970. DIRECTED READINGS.** (1-5 cr per qtr; prereq sr or ♯) Staff
- 5990. DIRECTED RESEARCH.** (1-5 cr per qtr; prereq sr or ♯) Staff

Arts, Studio (Arts)

Staff—Chairman, Karl E. Bethke, 208 Art Building; **Director of Undergraduate Studies,** William Roode, 223 Art Building; **Coordinator of Undergraduate Advising,** 204 Art Building (376-3219); **Director of Graduate Studies,** Herman Rowan, 232 Art Building (373-5855)

Professors: Bethke, Busa (on leave 1976-77) Downs, Hendler, MacKenzie (on leave fall 1976), Morrison, Myers, Priede, Rowan

Associate Professors: Hallman, Hoard, Somberg

Assistant Professors: Baldwin, Caglioti, Cowette, Feinberg, Gray, Henkle, Potratz, Roode, Rose

The Department of Studio Arts provides facilities and instruction in depth in drawing and painting, sculpture, printmaking, photography and film, ceramics, and glassworking, emphasizing the development of visual awareness through involvement in the creative process.

Part of the cost of expendable materials used in most studio arts courses is covered by materials cards which must be purchased by students from the bursar by the end of the second week of classes.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—One 1xxx art history course
 ArtS 1401, 1101, 1301 or 1302
 12 cr from 1102, 1104, 1105, 1301, 1302, 1510, 1520, 1701, 1801

Major Requirements—At least 28 cr in 3xxx or 5xxx studio courses
 8 3xxx or 5xxx art history cr

B.F.A. MAJOR SEQUENCE

This program, leading to a 4-year professional degree, offers intensive concentration in studio arts work. It is oriented toward professional work or admission to the M.F.A. program.

Admission—Usually limited to students with B averages in studio arts courses. Applicants, either CLA or transfer, apply for admission no earlier than their final sophomore quarters. Applications are to be made on the form available at the Studio Arts or Humanities and Fine Arts offices. Admission is based on a student's scholastic record, portfolio or slides of previous work, and letters of recommendation. Transfer students are expected to present at least 15 credits in beginning studio experience, or the equivalent.

Accepted students are subject to review, and candidacy may be terminated if performance is unsatisfactory. In case of termination, a candidate may transfer to a B.A. program.

Required Preparatory Courses—1401, 1101, 1104, 1301 or 1302, 1510 or 1520, 1701, 1801
 12 additional 1xxx studio arts cr
 12 art history cr

Major Requirements—28 cr in one studio arts specialization
 24 additional 3xxx or 5xxx studio arts cr (especially recommended: 5400)

A detailed statement of program requirements is available at the department office.

General Education—1401 introduces the student to the concerns, media, and environment of the practicing artist, and to concepts of visual art making in contemporary and historical contexts.

The second digit in a course number indicates area of study as follows:

- 1—drawing and painting (x1xx)
- 2—courses not applicable toward studio arts major (x2xx)
- 3—sculpture (x3xx)
- 4—crosses all subject matter lines (x4xx)
- 5—printmaking (x5xx)
- 7—photography and film (x7xx)
- 8—ceramics and glass (x8xx)

1401f,w,s,su. INTRODUCTION TO STUDIO ARTS. (4 cr) Hendler, Somberg
 For students of all interests. Concepts of visual art making in contemporary and historical contexts. The concerns, media, and environment of the practicing artist. Aesthetic foundation for beginning courses. The creative process, visual expression, criteria. GrD

1101f,w,s,su. DRAWING I. (4 cr) Caglioti, Cowette, Feinberg, Gray, Roode, Somberg
 Introduction to studio work; contemporary and traditional methods. Work from nature, various drawing mediums. GrD

Course Descriptions—Major Sequences

- 1102f,w,s,su. DRAWING II.** (4 cr; prereq 1101) Caglioti, Cowette, Feinberg, Gray, Roode, Somberg
Work from life and nature; color and pictorial structure. GrD
- 1104f,w,s,su. COLOR.** (4 cr; prereq 1101) Rowan, Feinberg, Somberg
Color and its visual implications. GrD
- 1105f,w,s,su. BEGINNING PAINTING.** (4 cr; prereq 1104) Caglioti, Cowette, Feinberg, Gray, Roode, Somberg
Contemporary and traditional painting media. GrD
- 1301f,w,s,su. SCULPTURE.** (4 cr) Baldwin, Potratz, Rose
Structure; form and space. Direct construction in metal. GrD
- 1302f,w,s,su. SCULPTURE.** (4 cr) Baldwin, Potratz, Rose
Structure; form and space. Clay, plaster, wood. Mold making and casting. GrD
- 1510f,w,s,su. PRINTMAKING: INTAGLIO.** (4 cr per qtr [8 cr max]) Bethke
Intaglio printing processes. Etching, engraving, and collagraphic techniques in creative context. GrD
- 1520f,w,s,su. PRINTMAKING: LITHOGRAPHY.** (4 cr per qtr [8 cr max]) Priede
Planographic printing processes from stones and metal plates. Image making, processing, printing, and presentation in creative context. GrD
- 1701f,w,s,su. PHOTO MEDIUM.** (4 cr) Hallman, Henkle
Contemporary and historical use of photography. Use of camera, film development, enlarging. The creative process. GrD
- 1702f,w,s. PHOTOGRAPHIC NONSILVER PROCESSES.** (4 cr; prereq 1701 or §)
For students with some previous experience with photographic equipment and techniques. Individual projects and instruction. Laboratory. GrD
- 1801f,w,s,su. CERAMIC PROCESSES.** (4 cr) MacKenzie, Hoard
Clay work by hand and forming on potter's wheel. Ceramics as creative expression. Technical considerations of clays, glazes, and kilns. Pottery and sculptural approaches. GrD

Intermediate Courses

- 3110f,w,s,su. DRAWING.** (4 cr per qtr [12 cr max]; prereq 1102) Morrison, Cowette, Gray, Roode
From model, still life, and nature. Principles of anatomy. GrD
- 3120f,w,s,su. PAINTING.** (4 cr per qtr [12 cr max]; prereq 1105 and 8 cr of 3110 or §)
Morrison, Hendler, Caglioti, Feinberg, Roode, Somberg
Media and problems in painting. Individual projects. GrD
- 3160f,w,s,su. WATERCOLOR.** (4 cr per qtr [12 cr max]; prereq 1101, 1104, and §) Myers
Transparent watercolor; gouache, casein, tempera. Figure, still life, landscape, abstract design. GrD
- 3301f,w,s,su. DIRECT METAL SCULPTURE.** (4 cr; prereq 1301, 1302)
Welding and brazing. GrD
- 3302f,w,s,su. PLASTICS MEDIA: WOOD, STONE CARVING.** (4 cr; prereq 1301, 1302) Rose
GrD
- 3303f,w,s,su. CAST METAL SCULPTURE.** (4 cr; prereq 1301, 1302) Potratz
Lost wax and sand casting in bronze, aluminum, iron. GrD
- 3304f,w,s,su. CONSTRUCTIONS, KINETICS, ELECTRONICS SCULPTURE.** (4 cr; prereq 1301, 1302) Baldwin
GrD
- 3510f,w,s,su. PRINTMAKING: INTAGLIO.** (4 cr per qtr [12 cr max]; prereq 4 cr of 1510 or §)
Myers
Intaglio techniques on metal and collagraph. Embossing. GrD
- 3520f,w,s,su. PRINTMAKING: LITHOGRAPHY.** (4 cr per qtr [12 cr max]; prereq 4 cr of 1520 or §) Priede
Planographic techniques on stones and plates. GrD
- 3701f,w,s. FILMMAKING.** (4 cr) Downs
Practical aspects of making films. GrD
- 3710f,w,s,su. PHOTOGRAPHY.** (4 cr per qtr [12 cr max]; prereq 1701 or Jour 1301 or §)
Hallman, Henkle
Photographic controls and processes. Related photosensitive media. Creative processes suited to individual interests. GrD

- 3720f,w,s. FILM WORKSHOP.** (4 cr per qtr [12 cr max]; prereq *) Downs
The motion picture as art form. Production of descriptive and experimental work. GrD
- 3810f,w,s,su. CERAMIC DESIGN.** (4 cr per qtr [12 cr max]; prereq 1801 or *) MacKenzie, Hoard
Wheel throwing. Advanced design problems, glaze and clay experimentation. Personal expression in ceramic medium. GrD
- 3820f,w,s. INTRODUCTION TO GLASSWORKING.** (4 cr per qtr [12 cr max]; prereq *) Hoard
Glassworking techniques involved in forming molten glass; cold working procedures. Individual projects. GrD

Advanced Courses

- 5110f,w,s,su. DRAWING.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3110 or equiv) Busa, Hendler
Drawing in all mediums from life. GrD
- 5120f,w,s,su. PAINTING.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3120, *) Busa, Rowan, Somberg
Various media. Individual problems. GrD
- 5160f,w,s,su. WATERCOLOR.** (4 cr per qtr [16 cr max]; prereq 3160 or *) Myers
Watercolor techniques, aesthetic directions. Individual concepts and development of sensitivities. GrD
- 5310f,w,s. DIRECT METAL SCULPTURE.** (4 cr per qtr [16 cr max]; prereq 3301) GrD
- 5320f,w,s,su. PLASTICS MEDIA: WOOD, STONE CARVING.** (4 cr per qtr [16 cr max]; prereq 3302) Rose GrD
- 5330f,w,s,su. CAST METAL SCULPTURE.** (4 cr per qtr [16 cr max]; prereq 3303) Potratz
Lost wax and sand casting in bronze, aluminum, iron. GrD
- 5340f,w,s,su. CONSTRUCTIONS, KINETICS, ELECTRONICS SCULPTURE.** (4 cr per qtr [16 cr max]; prereq 3304) Baldwin GrD
- 5510f,w,s,su. PRINTMAKING: INTAGLIO.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3510 or *) Myers
Color processes; intaglio and combined techniques. GrD
- 5520f,w,s,su. PRINTMAKING: LITHOGRAPHY.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3520 or *) Priede
Color printing and planographic techniques. GrD
- 5710f,w,s. PHOTOGRAPHY.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3710 or *) Hallman, Henkle
Individual work in photographic controls, processes; related photosensitive media. GrD
- 5720f,w,s. FILMMAKING.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3720 or *) Downs
Individual projects; film techniques. GrD
- 5810f,w,s,su. CERAMICS.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3810 or *) MacKenzie
Aesthetic awareness and development; techniques and materials. GrD
- 5820f,w,s. GLASSWORKING.** (4 cr per qtr [16 cr max]; prereq 12 cr of 3820 or *) Hoard
Forming glass from molten state. Creative expression with technical understanding. GrD
- 5821f,w,s. CERAMIC MATERIALS ANALYSIS.** (4 cr; prereq *) MacKenzie, Hoard
Glaze analysis and calculation; glaze types, formulation, materials. Investigation of unidentified materials. GrD

Advanced Entrance Courses

These courses provide technical background in specific media for advanced students in other areas. They are intended for graduate students in studio arts and other departments and colleges, junior and senior nonmajors, and transfer students. Registration in more than one section of each course, each with different subject matter, is possible.

- 5190. DRAWING AND PAINTING.** (4 undergrad cr or 3 grad cr per qtr [16 cr max]; prereq *) GrD
- 5390. SCULPTURE.** (4 undergrad cr or 3 grad cr per qtr [16 cr max]; prereq *) GrD

Course Descriptions—Major Sequences

- 5590. PRINTMAKING.** (4 undergrad cr or 3 grad cr per qtr [16 cr max]; prereq #) GrD
- 5790. PHOTOGRAPHY AND FILMMAKING.** (4 undergrad cr or 3 grad cr per qtr [16 cr max]; prereq #) GrD
- 5890. CERAMICS AND GLASSWORKING.** (4 undergrad cr or 3 grad cr per qtr [16 cr max]; prereq #) GrD

Seminars

- 5100. 20TH-CENTURY ART THEORIES IN PAINTING.** (2 cr; prereq #) GrD
- 5300. 20TH-CENTURY ART THEORIES IN SCULPTURE.** (2 cr; prereq #) GrD
- 5400. 20TH-CENTURY ART THEORIES.** (2 cr; prereq #) GrD
- 5500. 20TH-CENTURY ART THEORIES IN PRINTMAKING.** (2 cr; prereq #) GrD
- 5700. 20TH-CENTURY ART THEORIES IN PHOTO AND FILM.** (2 cr; prereq #) GrD
- 5800. 20TH-CENTURY ART THEORIES IN CERAMICS.** (2 cr; prereq #) GrD

Special Courses

- 3970. DIRECTED STUDIES.** (Cr ar; prereq 24 cr in studio arts and #)
Guided individual work.
- 3980. DIRECTED INSTRUCTION.** (1-5 cr per qtr [8 cr max]; prereq #)
Students assist in teaching courses they have completed.
- 5970. DIRECTED STUDIES.** (Cr ar; prereq 24 cr in studio arts and #)
Guided individual work.

Workshop Courses

Workshops are offered primarily through Continuing Education and Extension in all studio arts areas. Area designation follows course number and title (e.g., ArtS 3420, Workshop: Ceramics).

- 1420. WORKSHOP.** (1-5 cr) GrD
- 3420. WORKSHOP.** (1-5 cr) GrD
- 5420. WORKSHOP.** (1-5 cr) GrD

Honors Courses

- 3401. INTERDISCIPLINARY HONORS SEMINAR: MUSIC, STUDIO ARTS, THEATRE.** (2-4 cr, \$Mus 3401, \$Th 3401; prereq jr, sr honors candidate, #) GrD
- 3402. INTERDISCIPLINARY HONORS SEMINAR: MUSIC, STUDIO ARTS, THEATRE.** (2-4 cr, \$Mus 3402, \$Th 3402; prereq jr, sr honors candidate, #) GrD
- 3403, 3404w,s. WORKSHOP.** (2-4 cr per qtr; prereq honors candidate)
Studio workshop for honors candidates in studio arts; coordinates all areas in the department.
GrD
- 3405, 3406. HONORS THESIS.** (2-4 cr per qtr; prereq #) GrD

Courses for Architecture Students

- 1107f. DRAWING.** (2 cr) GrD
- 1108w. DRAWING.** (2 cr; prereq 1107) GrD
- 1109s. DRAWING AND PAINTING I.** (2 cr; prereq 1108) GrD
- 3140f,w,s. DRAWING AND PAINTING II.** (2 cr per qtr [6 cr max]; prereq 1109) GrD

Astronomy (Ast)

Institute of Technology

Staff—*Chairman*, Edward P. Ney, 379 Tate Laboratory of Physics

Regents' Professor: Ney

Professors: Kaufmanis, Stein

Associate Professor: Davidson

Assistant Professors: Black, Gallagher, Humphreys, Warner

Observations of stars and galaxies and formulation of the laws that govern them are the activities of astronomy. A bachelor of science in astrophysics degree is offered in the Institute of Technology. College of Liberal Arts physics majors who are interested in astronomy may be assigned astronomy advisers.

General Education—1011 is a descriptive course for the general student; 1021 is a slightly more mathematical version for those who have had high school trigonometry and physics or chemistry. 1201 is a second course for nonmajors; other courses are designed for majors in physics and astrophysics.

1011. DESCRIPTIVE ASTRONOMY. (4 cr, §1021)

Survey of the sun, the moon, the planets and the stars; description of the galaxy and universe to which the sun belongs. Nonmathematical. GrB

1015. DESCRIPTIVE ASTRONOMY LABORATORY. (1 cr, §1025; S-N only; 1 lab hr per wk)

Laboratory in conjunction with 1011. Only opportunity to observe with telescope. GrB

1021. INTRODUCTION TO ASTRONOMY. (4 cr, §1011; prereq high school trigonometry and physics or chemistry)

Solar system, stars, galaxies, and cosmology. A more mathematical and physical discussion than 1011. GrB

1025. INTRODUCTION TO ASTRONOMY LABORATORY. (1 cr, §1015; S-N only; 1 lab hr per wk)

Laboratory in conjunction with 1021. Only opportunity to observe with telescope. GrB

1201. TOPICS IN MODERN ASTROPHYSICS. (4 cr; prereq 1011 or 1021 or equiv, §)

Current research problems in astronomy and astrophysics. Nonmathematical. GrB

3051. INTRODUCTION TO ASTRONOMY AND ASTROPHYSICS. (4 cr; prereq 1 yr calculus and Phys 1106 or 1291 or §)

The solar system, galaxy, and extragalactic universe. How information is obtained; conclusions from observations.

5161. ASTROPHYSICS OF DIFFUSE MATTER. (4 cr; prereq 3051 and Phys 3511 or §)

Diffuse matter in the solar system, interstellar and extragalactic space; the radiation field in these environments. Gaseous nebulae, radio astronomy and nonthermal radio sources, cosmic rays, some aspects of cosmology.

5162. ASTROPHYSICS OF CONDENSED MATTER. (4 cr; prereq 3051 and Phys 3511 or §)

Luminosities, temperatures, masses, and densities of stars; their mechanisms for energy generation. Chemical composition of stars and the probable course of stellar evolution.

BEHAVIORAL BIOLOGY

See Ecology and Behavioral Biology.

BENGALI

See South Asian Studies.

Course Descriptions—Major Sequences

Biochemistry (BioC)

College of Biological Sciences

Staff—Head, Finn Wold, 140 Gortner Laboratory of Biochemistry; *Director of Undergraduate Studies, 1976-77:* Peter J. Chapman, 170 Gortner Laboratory, 1977-78: Robert L. Glass, 258 Gortner Laboratory

Professors: Bloomfield, Dagley, Gander, Glass, Henderson, Jenness, Kirkwood, Liener, Rogers, Schlenk, Seal, Swan, Warner, Wold, Wood

Associate Professors: Anderson, Chapman, Lovrien, Mann, Muenck, Nelsestuen, Woodward

Assistant Professors: Fuchs, Gray, Lakowicz

Biochemistry is the study of the molecules, especially macromolecules such as proteins and nucleic acids, that occur in living organisms.

A major leading to the B.S. is available through the College of Biological Sciences.

See also listings under Biology.

1301f,w. ELEMENTARY BIOCHEMISTRY I. (5 cr, §Chem 3301; prereq Chem 1005)

Survey of organic chemistry and biochemistry; chemistry of carbon compounds in nature. Composition, structures, and properties of major components of plant, animal, and bacterial cells. GrB

1302w,s. ELEMENTARY BIOCHEMISTRY II. (4 cr; prereq 1301)

Reaction of organic compounds in the living cell. Metabolic pathways, energy considerations, and biosynthetic processes; aspects essential to an understanding of plant and animal nutrition and physiology. Laboratory. GrB

Biol 3021f,w,s,su. BIOCHEMISTRY. (4 cr, §BioC 5001; prereq Biol 1011, Chem 3302)

Biochemistry and biophysics of cells; enzyme catalysis, cellular energetics, biosynthesis of cellular constituents and cellular regulatory mechanisms. GrB

3094. UNDERGRADUATE SEMINAR. (1 cr; prereq sr biochemistry major for fall and winter qtrs., jr biochemistry major for spring qtr) GrB

3960f,w,s. RESEARCH TOPICS IN BIOCHEMISTRY. (1 cr; offered S-N only; prereq sr or 3rd-qtr jr biochemistry major)

Current research in the department.

3990. UNDERGRADUATE RESEARCH. (1-3 cr; prereq sr biochemistry major, B avg or $\frac{B}{2}$, and Δ) Research problems for B.S. degree (thesis optional).

5001f,w,s,su. BIOCHEMISTRY. (3 cr, §Biol 3021; prereq Biol 1011, Chem 3302 or §)

See description of Biol 3021 above. GrB

5002s. BIOCHEMISTRY TOPICS. (3 cr, §5751 [previously 5741], §5752 [previously 5742]; prereq 5001 or Biol 3021, ¶5025)

Topics not covered in 5001. 5001 and 5002 serve as prerequisites for certain advanced courses. GrB

5025f,w,s. LABORATORY IN BIOCHEMISTRY. (2 cr; prereq 5001 or Biol 3021 or ¶5001 or ¶Biol 3021)

Techniques and problem-solving approaches. Laboratory experiments and demonstrations. GrB

5522f. PHYSICAL BIOCHEMISTRY OF SOLUTIONS. (4 cr, §Chem 5522; prereq 2 qtrs physical chemistry...5001 or Biol 3021 desirable)

Physical chemistry of equilibrium and transport phenomena in solution, application to biochemical systems. Electrolyte and polyelectrolyte solutions, solutions of macromolecules, binding of substrates, diffusion and sedimentation, viscosity, diffusion-controlled kinetics, interfacial phenomena: colloids and micelles. GrB

5523w. PHYSICAL BIOCHEMISTRY: STRUCTURE AND INTERMOLECULAR FORCES. (4 cr, §Chem 5523; prereq 2 qtrs physical chemistry...5001 or Biol 3021 desirable)

Structure determination of biological macromolecules. Scattering and diffraction, optical and magnetic resonance spectroscopy. Helix-coil transition theory. Application to proteins, nucleic acids, and synthetic analogs. GrB

- 5524s. PHYSICAL BIOCHEMISTRY: DYNAMICS.** (4 cr, §Chem 5524; prereq 2 qtrs physical chemistry...5001 or Biol 3021 desirable)
Thermodynamics, statistical mechanics, and chemical kinetics; solvent effect structure-function relation. GrB
- 5745f. GENERAL BIOCHEMISTRY LABORATORY.** (2 cr; prereq 5025 with a grade of B or better, 5751 or 5002 or 5741 or ¶5751, cr in analytical chemistry, or §)
Experiments in biochemical techniques. GrB
- 5746w. BIOCHEMISTRY LABORATORY PROJECTS.** (3 cr; prereq 5025 and 5745 with a grade of B or better, 5751 or 5741, 5752 or 5742 or ¶5752)
Isolation and characterization of biomolecules, enzyme kinetics, metabolic studies. GrB
- 5747s. ADVANCED BIOCHEMICAL TECHNIQUES.** (3 cr; prereq 5752 or 5742, 5746 and §)
Enzymatic and metabolic reactions.
- 5751f-5752w. GENERAL BIOCHEMISTRY.** (4 cr per qtr, §MdBc 5751-5752; prereq Biol 3021 or equiv, 2 qtrs physical chemistry or regis in 2nd qtr of physical chemistry)
(Previously 5741-5742-5743) Offered jointly by Departments of Biochemistry of the College of Biological Sciences and of the Medical School. Structure, function, metabolism, and metabolic regulation of components in biological systems. GrB
- 5764f. METALLOPROTEINS: STRUCTURE AND FUNCTION.** (3 cr; prereq 5001, 5002...5523 recommended) Wood, Muenck
Magnetic resonance techniques. Transition metals in enzyme catalyzed reactions. GrB
- 5950f,w,s. SPECIAL TOPICS.** (1-5 cr; prereq §, Δ)
- 5970. DIRECTED STUDIES.** (1-3 cr; prereq §, Δ)
To enable students to make up deficiencies in background course work.

College of Biological Sciences

B.A. degrees are available in biology and microbiology, and courses for credit, many of which may be applied toward distribution requirements, are offered in biochemistry**, biology**, botany**, ecology and behavioral biology, genetics and cell biology, natural science and technology, and zoology**. See these departmental headings.

Biology (Biol)

College of Biological Sciences

Staff—Dean, Richard S. Caldecott, 123 Snyder Hall; **Associate Dean,** Norman S. Kerr, P190 Kolthoff Hall; **Coordinator of Student Services,** Hagdis Tschunko, P190 Kolthoff Hall; College of Biological Sciences departmental faculties

Biologists concern themselves with the fundamental properties of living things, from the interactions of molecules unique to life through the maintenance and integration of organisms through the interactions of populations in space and time.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1011 or Δ, Chem 1004-1005; Math 1211-1221-1231

Major Requirements—Chem 3301, 3302 and 4 additional credits
Phys 1104-1105-1106 or 1271-1281-1291 with 1275-1285-1295
Two courses chosen from 3011, 3012, 3013
Biol 3021, 3032, 3041

**Offers B.S. degree through the College of Biological Sciences.

Course Descriptions—Major Sequences

15 additional 3xxx-5xxx cr, including at least two courses with laboratory work in biological sciences and one of the following: Bot 3131, 5141, MicB 5321, Zool 5104, 5114. Courses from any of the following areas are considered courses in the major: anatomy, biochemistry, biology, botany, ecology and behavioral biology, genetics and cell biology, microbiology, physiology, zoology.

Permission of the department is required for admission to the major.

General Education—Courses especially appropriate for nonscience and nonbiology majors include 1011, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 3051, 5602; Bot 1009, 1012, 3071; EBB 3001, 3111; GCB 3002, 3022, 3201.

1011f,w,s,su. GENERAL BIOLOGY. (5 cr)

Principles of biology. The cell, metabolism, heredity, reproduction, ecology, and evolution. GrB

1011Hf,w,s,su. HONORS COURSE: GENERAL BIOLOGY. (5 cr)

See 1011. GrB

1101f,w,s. HEREDITY AND HUMAN SOCIETY. (4 cr, §GCB 3002; no cr if taken after 3032 or GCB 3022; for students in programs not directly related to biological sciences) Fan, Woodward

Principles of heredity and their social and cultural implications. GrB

1102f,w. MICROBES AND MAN. (4 cr)

Microorganisms in relationship to man and environment in processing and preserving food, waste disposal, and environmental factors; bacterial products of industrial and pharmaceutical importance; role of microorganisms in recycling elements of the biosphere; microorganisms and disease. GrB

1103f,w,s,su. GENERAL BOTANY. (5 cr, §3012; prereq 1011) Wetmore, Charvat

Organization of plants, plant function, plant growth and development, plant reproduction. GrB

1105f,w. ECOLOGY AND EVOLUTION. (4 cr; prereq 1011 or 1101) Birney, Pace

Understanding evolutionary processes through examination of interactions of organisms with their environments; predictions about living systems, including that of man. GrB

1106f,w,s,su. GENERAL ZOOLOGY. (5 cr; prereq 1011) Olson, Schmid, Underhill

Animal phyla; structure, function, behavior, adaptation, and evolutionary relationships. GrB

1107w. INTRODUCTION TO BEHAVIORAL BIOLOGY. (4 cr; prereq 1011) Hopkins

Central ideas in behavior; control of movement, ontogeny, hormone and sensory systems, behavioral evolution, social behavior. Behavior of primates. GrB

1951f-1952w-1953s. BIOLOGY COLLOQUIUM. (2/1-2/1-2 cr; for prospective majors; S-N only; prereq 1011 or ¶1011, §)

Orientation to the biological sciences; opportunity for interaction with other biology students and faculty.

3011f,w,s,su. ANIMAL BIOLOGY. (5 cr; prereq 1011, Chem 1005) Barnwell, Gilbertson, Herman, Goldstein

Ways different phyla have solved similar physiological problems. Laboratory includes survey of major animal groups and physiological experiments. GrB

3012f,w,s,su. PLANT BIOLOGY. (5 cr; prereq 1011, Chem 1005) Pratt, McLaughlin, Koukkari

Plant diversity and evolution; structure and function of the plant cell and of the whole organism; growth and development of plants. GrB

3013f,w,s. MICROBIOLOGY. (4 cr, §MicB 3103, §MicB 5105; prereq 3021) Chapman, Dworkin, C Woodward

Taxonomy, anatomy, physiology, biochemistry, and ecology of microbes. Molecular structure in relation to bacterial function. GrB

3021f,w,s,su. BIOCHEMISTRY. (4 cr, §BioC 5001; prereq 1011, Chem 3302)

Biochemistry and biophysics of cells; enzyme catalysis, cellular energetics, biosynthesis of cellular constituents and cellular regulatory mechanisms. GrB

BioC 5025f,w,s. LABORATORY IN BIOCHEMISTRY. (2 cr; prereq BioC 5001 or Biol 3021 or ¶BioC 5001 or ¶Biol 3021)

Techniques and problem-solving approaches. Laboratory experiments and demonstrations. GrB

3032f,w,s. GENETICS AND CELL BIOLOGY. (5 cr, §5602, §GCB 3022; prereq 3021) Staff

Principles of heredity and cell biology; prokaryotic and eukaryotic organisms. GrB

- GCB 5030f,w,s. LABORATORY: GENETICS.** (2 cr; prereq GCB 3022 or 5022 or Biol 3032 or §)
Investigative approaches to analysis of genetic problems. Focus on a specific organism or related groups of organisms may differ from quarter to quarter.
- 3041f,w,s,su. ECOLOGY.** (5 cr, §EBB 5041; prereq biology major, Math 1231 or §, Δ) Staff
Interactions of plant and animal populations and their environments. Organization, functioning, and development of ecological systems; population growth and regulation. Modern man's impact on the biosphere. GrB
- 3051f. BIOLOGY AND THE FUTURE OF MAN.** (4 cr; S-N only) Pratt, Gorham
Nontechnical discussion of biological factors affecting the quality of life—pollution, chemical and biological warfare, population growth, food supply, resource sufficiency, value of wilderness, genetics and eugenics, public health, aging, behavior control, and biological aspects of ethics, morals, and societal organization. GrB
- 3950f,w,s. UNDERGRADUATE SEMINAR.** (1 cr; S-N only; prereq §, Δ)
Members of the faculty lead groups of seniors in discussions of different topics of current interest.
- 3980f,w,s. DIRECTED INSTRUCTION.** (1-5 cr; prereq §, Δ)
- 5061w,s. DEVELOPMENTAL BIOLOGY.** (3 cr; prereq 3032) Charvat, McKinnell
Developing systems and control mechanisms of development, from the molecule to the organism. GrB
- 5065w,s. LABORATORY IN DEVELOPMENTAL BIOLOGY.** (2 cr; prereq 5061 or ¶5061)
Charvat, McKinnell
Laboratory course to accompany 5061. GrB
- 5501s. BIOCHEMICAL EVOLUTION.** (4 cr; prereq 5 cr biochemistry) Kirkwood, Jenness, Seal
Molecular evolution: prebiotic evolution and the phylogeny of functional molecules and biochemical systems in living organisms. GrB
- 5602su. CELL BIOLOGY.** (3 cr, §3032; prereq 1011) Cunningham
Organization and functions of plant, animal, and bacterial cells; fine structure, composition, assembly and metabolic function of organelles; cell growth and differentiation, cell-cell interactions, and cytogenetics. GrB
- 5605w,s. CELL BIOLOGY LABORATORY.** (2 cr; prereq 3032 or ¶3032 or GCB 5051 or ¶GCB 5051 or §) Johnson, Hooper
Experimental approaches to cell structure, function, and replication; microscopy, autoradiography, cell fractionation, molecular and chemical analysis. GrB
- 5606f,s. BIOLOGICAL ELECTRON MICROSCOPY.** (2 cr; prereq 3032 or GCB 5051 or §) Cunningham
Theory and operation of transmission and scanning electron microscopes. Preparation techniques for biological material including freeze-etching, autoradiography, thin sectioning, negative staining, cytochemistry, metal shadowing. GrB
- 5870su. ITASCA SEMINAR.** (Cr ar; prereq §) Staff
Topic selected and scheduled by staff and students during registration.
- 5890su. RESEARCH PROBLEMS AT ITASCA IN ECOLOGY AND BEHAVIORAL BIOLOGY; OR ENTOMOLOGY, FISHERIES, AND WILDLIFE; OR PLANT PATHOLOGY; OR SOIL SCIENCE; OR ZOOLOGY.** (Cr ar; prereq §) Staff
Short-term research projects in any departmental area listed above during one or both terms.
- 5950. SPECIAL TOPICS IN BIOLOGY.** (1-5 cr per qtr; prereq Δ)
- 5951. THE BIOLOGIST AS SCIENTIST, EDUCATOR, AND CITIZEN.** (3 cr; prereq 15 cr biological sciences) Hooper, Cunningham
Role of the scientist in decision making and persuasion; teaching methods in biology; organization of the academic and governmental worlds. GrB

Biometry (PubH)

School of Public Health

Staff—Director, Marcus O. Kjelsberg, 1226 Mayo Memorial Hospital; **Director of Undergraduate Studies,** Richard B. McHugh, 1203 Mayo Memorial Hospital

Professors: Ackerman, Bearman, Boen, Johnson, Kjelsberg, McHugh

Associate Professors: Bartsch, Gatewood

Assistant Professors: Ellis, Goldman, Jacobs, Jeffries

Course Descriptions—Major Sequences

Biometry, an interdisciplinary field in the biological and health sciences, interrelates biomedical statistics, health computer science, and mathematical biology in the study of quantitative concepts and research procedures of the life and health sciences.

The program leading to the B.A. prepares the student for a variety of careers in: (1) bioscience and health science research, (2) pharmaceutical and related industry, (3) voluntary and governmental health agencies at all levels. A career as a professional biometrician or in teaching requires graduate study, available at Minnesota and other universities.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Math 1211-1221-1231 or 1311-1321-1331 or 1611-1621 (premedical students taking 1111, 1142 may substitute that sequence); Chem 1004-1005; Biol 1011

Major Requirements—PubH 5430, 5450, 5451, 5452, 5453

14 additional cr chosen from biometry courses (PubH x4xx) numbered 5410 or above, Stat 5121-5122 or 5131-5132-5133

- 3400. DIRECTED STUDIES.** (Cr or [may be repeated for cr]); prereq §) Staff
Guided individual reading or study.
- 5400. INTRODUCTION TO QUANTITATIVE METHODS IN THE HEALTH AND LIFE SCIENCES.** (4 cr; for students majoring in biological and health sciences; prereq Biol 1011, Chem 1004-1005, Math 1231 or equiv, §) McHugh
Basic quantitative methods for the design and analysis of clinical and laboratory studies. GrA
- 5412. SURVEY SAMPLING IN SOCIAL AND HEALTH SCIENCE RESEARCH.** (3 cr; prereq §) Jacobs
Probability sampling in social and health science surveys. Simple random, stratified, systematic, multistage, and cluster sampling.
- 5415-5416-5417. MATHEMATICAL BIOLOGY I, II, III.** (3 cr per qtr; prereq 5432, knowledge of differential equations and biological science, or §) Ackerman
Mathematical models as tools for communication and concept analysis in health-related disciplines. Design, selection, simulation, and interpretation of computer-programmable models. Goals and guidelines, deterministic models of physiological systems, transforms and transfer functions, analysis and classification of EKG's and EEG's, information theory, population models, and stochastic applications for genetics, ecology, and epidemiology.
- 5430. BIOMEDICAL COMPUTING I.** (4 cr; prereq Math 1111) Ellis
Digital computers and their use in biology and medicine through the BASIC programming language. Simple algorithms for data processing; using and modifying statistical and graphical library programs; elements of conversational programming. GrA
- 5431. BIOMEDICAL COMPUTING II.** (4 cr; prereq 5430 or §) Ellis
Further health-related applications of digital computers using the FORTRAN programming language. Computer organization; use of input/output devices; statistical analysis package programs; sequential file management. GrA
- 5432. BIOMEDICAL COMPUTING III.** (4 cr; prereq 5431 or §) Ellis
Special purpose computer systems and languages which are useful in biology and medicine for computer-aided instruction, hospital information systems, patient monitoring and simulation. GrA
- 5436. ANALYTICAL TECHNIQUES FOR HEALTH DELIVERY SYSTEMS.** (3 cr; prereq calculus and 5450, 5451, FORTRAN or §) Johnson
Operations research and systems analysis techniques; linear programming, theory of queues, inventory models in health care systems.
- 5440-5441. QUANTITATIVE MAMMALIAN BIOLOGY I, II.** (3 cr per qtr, §Phs 3052-3053; prereq 1-yr sequences in mathematics, physics, chemistry, and biology or §) Johnson
Diffusion, surface tension, and mechanics of respiration, circulation, digestion, and locomotion. Chemical aspects of blood, respiration, renal function, nutrition, and metabolism. Endocrine, sensory, neuromuscular, and central neural functioning.

- 5450. BIOMETRY I.** (3 cr; prereq ¶5451...familiarity with basic concepts of calculus desirable) Jeffries
Basic concepts in probability, binomial, Poisson, and normal probability models for random phenomena in the biological and health sciences. GrA
- 5451. BIOMETRY LABORATORY I.** (2 cr; prereq ¶5450) Jeffries
Application of Biometry I concepts to the development of probability models. GrA
- 5452. BIOMETRY II.** (3 cr; prereq 5450 and ¶5453) Jeffries
Testing statistical hypotheses and interval estimation; X^2 applied to frequency data; regression analysis; correlation; analysis of variance; contrasts and multiple comparison techniques. GrA
- 5453. BIOMETRY LABORATORY II.** (2 cr; prereq ¶5452) Jeffries
Applications of concepts of testing and estimation of the parameters of basic probability models, of X^2 to goodness of fit and heterogeneity tests, of regression to bioassay, and of analysis of variance to bioassay. GrA
- 5454. BIOMETRY III.** (3 cr; prereq 5452 and ¶5455) Jeffries
Nested, randomized block, factorial, and split plot designs. GrA
- 5455. BIOMETRY LABORATORY III.** (2 cr; prereq ¶5454) Jeffries
Basic designs illustrated with examples from the biological sciences. GrA
- 5456. BIOMETRY CONSULTING SEMINAR.** (Cr ar; prereq biometry major) Boen, staff
Consultant and client interaction: communication and formulation of the biometric problem. Role and responsibility of the biometrician. Robustness and relevance of frequently used analytical techniques. Biometry student internship experiences.
- 5459. INTRODUCTION TO MATHEMATICAL THEORY IN BIOMETRY.** (Cr ar; prereq 2 qtrs of calculus or §) Jeffries
Generating functions, curve fitting, iterative estimation, tests, propagation of error, and related topics. Illustrations from epidemics and population growth, bioassay, clinical trials, demography, and other areas. GrA
- 5460. DEMOGRAPHY AND HEALTH.** (3 cr; prereq biometry major or §) McHugh
Needs, sources, collection, and interpretation of data in the areas of population, mortality, morbidity, natality, and health services.
- 5462. CLINICAL TRIALS AND LIFE TABLE TECHNIQUES.** (3 cr; prereq biometry major or §) Kjelsberg
Methodology of large-scale collaborative clinical trials; case examples; operational aspects of a data center. Elementary life table techniques and application to follow-up studies in medicine and public health. GrA

Botany (Bot)

College of Biological Sciences

Staff—Head, Douglas C. Pratt, 220 Biological Sciences Center; *Director of Undergraduate Studies,* Thomas K. Soulen, 660 Biological Sciences Center

Professors: Frenkel, Hall, Jonas, Lawrence, Morley, Ownbey, Pratt

Associate Professors: Koukkari, McLaughlin, Soulen, Wetmore

Assistant Professors: Charvat, Guilfoyle, Hirsch, Jendrisak

Botanists study such varied topics as the structure, function, development, classification, evolution, worldwide distribution, and importance of plants ranging from algae and fungi to higher flowering plants; the molecular basis of plant evolution and development; the mechanisms by which plants convert light into chemical energy; and the use of plants in the interpretation of the history and prehistory of the world and their impact on human civilizations.

A major leading to the B.S. is available through the College of Biological Sciences.

General Education—Courses especially appropriate for nonmajors include Biol 1103 and Bot 1009, 1012, 3071.

Course Descriptions—Major Sequences

- 1009s. MINNESOTA PLANT LIFE.** (4 cr; suitable for nonmajors) Morley
Identification of the more common and conspicuous Minnesota plants; their basic distinctions, life cycles, habitat requirements, distribution, and ecological relations. Lectures, demonstrations, six or seven field trips. GrB
- 1012E. PLANTS USEFUL TO MAN.** (4 cr) Jonas
The roles plants have played in man's biological and cultural development. Lectures and demonstrations. GrB
- Biol 1103f,w,s,su. GENERAL BOTANY.** (5 cr, §Biol 3012; prereq Biol 1011) Wetmore, Charvat
Organization of plants, plant function, plant growth and development, plant reproduction. GrB
- 3071s. PLANTS AND HUMAN AFFAIRS.** (4 cr; prereq §) Jonas
Reciprocal and deterministic interaction between plants and man as illustrated by events and developments in agriculture, industry, trade, domestic and foreign affairs, medicine, religious customs, and the arts. GrB
- 3109f. PLANT ANATOMY.** (5 cr; prereq Biol 1103 or 3012) Hall
Structure and development of plants. Special reference to vascular plants. GrB
- 3131f,w,s. SURVEY OF PLANT PHYSIOLOGY.** (4 cr, §5131, §PIPh 3131, §PIPh 5131; prereq Biol 1103 or 3012, Chem 3301 or BioC 1301) Soulen, Koukkari, Pratt
Physiological principles underlying processes that occur in living plants. Emphasis on higher plants. Growth and development, mineral nutrition, water relations and metabolism including respiration and photosynthesis. GrB
- 3201w. INTRODUCTORY TAXONOMY.** (3 cr; prereq Biol 1103 or 3012) Morley
Taxonomy of ferns, gymnosperms, and flowering plants (material drawn largely from Minnesota spring flora). Families of plants and their relationships; floral structure and function; taxonomic terms; nomenclature; literature; methods of collection and identification. Two or three field trips. GrB
- 3950f,w,s,su. UNDERGRADUATE PROSEMINAR.** (1 cr per qtr; prereq §)
Biological topics of current interest.
- 3970f,w,s,su. INDEPENDENT STUDY.** (1-5 cr per qtr; prereq §)
Individual study of selected topics or problems; readings and use of scientific literature.
- 3990f,w,s,su. RESEARCH PROBLEMS.** (1-5 cr per qtr; prereq §)
Individual research for undergraduates.
- 5103E. BIOLOGY OF NONVASCULAR PLANTS.** (5 cr; prereq Biol 1103 or 3012) McLaughlin
Algae, fungi, lichens, and bryophytes. Characteristics of groups, evolutionary relationships, life cycles, comparative morphology (including ultrastructure), comparative nutrition. Laboratory emphasizes living material and isolation of algae and fungi in culture. GrB
- 5105s. MORPHOLOGY OF VASCULAR PLANTS.** (5 cr; prereq Biol 1103 or 3012 or §) Hall
Vegetative and reproductive structure of living and fossil vascular plants. Evolutionary relationships based on phylogenetic principles. GrB
- 5111w. DEVELOPMENTAL PLANT ANATOMY.** (5 cr; prereq Biol 1103 or 3012) Hirsch
Microscopic structure of vascular plants; development in root, stem, and leaf. GrB
- 5131f,w,s. SURVEY OF PLANT PHYSIOLOGY.** (4 cr, §3131, §PIPh 3131, §PIPh 5131; prereq Biol 1103 or 3012, Chem 3301 or BioC 1301) Soulen, Koukkari, Pratt
For description, see 3131. Includes a weekly discussion section. GrB
- 5132s. PLANT PHYSIOLOGY LABORATORY.** (2 cr; prereq 3131 or 5131 or §3131 or §5131)
Laboratory course to accompany 3131 or 5131. GrB
- 5182s. PLANT METABOLISM.** (3 cr, §PIPh 5182; prereq 5131 or equiv, course in biochemistry) Soulen
Plant metabolism: photosynthesis, respiration, synthesis of macromolecules by plants. Structure-function relations at the plant, cell, and subcellular level. Energy flow in the plant system; regulation of plant metabolism. GrB
- 5183w. WATER, MINERALS, AND TRANSLOCATION.** (4 cr, §PIPh 5183; prereq 5131 or equiv, courses in biology, physics, and organic chemistry or biochemistry) Parsons, Smith
Membrane phenomena and osmotic properties of cells. Uptake, movement, and loss of water in plants; effects of external factors. Translocation of organic substances. Absorption, distribution, and function of inorganic elements. GrB
- 5184f. PLANT GROWTH AND DEVELOPMENT.** (3 cr, §PIPh 5184; prereq 5131 or equiv, courses in biology and organic chemistry) Brun, staff
Growth of higher plants; division and differentiation of cells, development of plant organs, effects of external factors on plant growth, photosynthesis and respiration in relation to plant development, and nature and action of plant growth substances. GrB

- 5205s. FLORA OF MINNESOTA.** (4 cr; prereq 3201 or ♯) Ownbey
Vascular plants of Minnesota; taxonomic and floristic relationships; geographical distribution and variation; collecting and identifying. Field trips. GrB
- 5211w. SURVEY OF ANGIOSPERM FAMILIES.** (5 cr; prereq 3201 or ♯; offered 1977-78 and alt yrs) Morley
Characteristics and relationships of orders and families of flowering plants world wide. GrB
- 5212w. PRINCIPLES OF ANGIOSPERM PHYLOGENY.** (3 cr; prereq 3201 or ♯; offered 1976-77 and alt yrs) Morley
Evolutionary relationships and the various means of judging them within the angiosperms. Laboratory investigation of representative and critical groups. GrB
- 5231s. INTRODUCTION TO THE STUDY OF ALGAE.** (5 cr; prereq 10 cr in botany or biology or ♯; offered when feasible)
Structure, reproduction, and life histories of major algal divisions. GrB
- 5251s. PHYLETIC PALEOBOTANY.** (5 cr; prereq Biol 1103 or 3012) Hall
Anatomy, morphology, and evolution of fossil vascular plants. Angiosperm paleofloristics and paleoecology, excluding the Quaternary. GrB
- 5801su. SUMMER FLORA OF MINNESOTA.** (5 cr; prereq course in taxonomy) GrB
- 5805su. AQUATIC FLOWERING PLANTS.** (5 cr; prereq course in taxonomy) GrB
- 5811su. FRESHWATER ALGAE.** (5 cr; prereq 10 cr in botany, biology, or zoology) GrB
- 5815su. BRYOPHYTES.** (5 cr; prereq 10 cr in biology or ♯) GrB
- 5821su. LICHENS.** (5 cr; prereq 10 cr in botany or zoology or ♯) GrB
- 5970f,w,s. BASIC BOTANY.** (Cr ar; prereq Biol 1103 or 3012 and ♯)
Individual work in a selected discipline.

Business Administration

College of Business Administration

Business administration courses described below are open to CLA students. CLA does not offer a major in business administration, but some of the following courses may count toward a major in economics.

- Acct 1050f,w,s. PRINCIPLES OF ACCOUNTING I.** (4 cr, \$8050; prereq 3rd-4th yr)
Basic financial accounting concepts; their application to recording and reporting business events. GrA
- Acct 1051f,w,s. PRINCIPLES OF ACCOUNTING II.** (4 cr, \$8051; prereq 1050)
Accounting analysis and reports for management and investor decision making. GrA
- BLaw 3058. INTRODUCTION TO LAW, AND THE LAW OF CONTRACTS AND AGENCY.** (4 cr; prereq Econ 1002 or equiv)
The origin, history, and development of law; its place in and effect upon society; the systems of courts; legal procedure. The law of contracts as the basic law affecting business transactions; law affecting the relationships between principal and agent, master and servant, and employer and employee.
- BFin 3000. FINANCE FUNDAMENTALS.** (4 cr, \$8000; prereq Acct 1051)
Principal concepts in finance. The business environment; valuation theory. Management decisions concerning uses and sources of funds; capital budgeting. U.S. financial markets.
- Ins 3100. RISK MANAGEMENT AND INSURANCE.** (4 cr, \$8100)
Recognition and evaluation of property, liability, and personnel risks facing a business firm, a family, or some other economic unit. The tools and use of risk management—retention, loss prevention, and insurance. How to select and deal with an insurer. Public policy issues—government regulation, social insurance, automobile insurance.
- IR 3002. INDUSTRIAL RELATIONS SYSTEMS: LABOR MARKET AND THE MANAGEMENT OF HUMAN RESOURCES.** (4 cr, \$8002; prereq Econ 1001, 1002, Psy 1001)
Labor markets, manpower management, federal-state employment policies, and the resolution of industrial conflict. Processes of valuing, employing, developing, motivating, and maintaining human resources in an industrial society.
- IR 3007. COLLECTIVE BARGAINING NEGOTIATIONS AND MODERN LABOR RELATIONS.** (4 cr)

Course Descriptions—Major Sequences

Collective bargaining negotiations between employers and/or employer associations and unions. Relevant policies of employers, unions, and the public; background of the labor movement; current practices in labor relations; significant trends.

IR 3010. HUMAN RELATIONS AND APPLIED ORGANIZATION THEORY. (4 cr)

Human relations problems in modern organizations; approaches to solutions. Philosophies and theories of human relations and their translation into policy. Discussions, cases, role playing, and skill-building sessions.

Mgmt 3001. FUNDAMENTALS OF MANAGEMENT. (4 cr, \$8001)

Principal functional areas of management: concepts, theory, research, operational problems. Factors and relationships in achieving organizational objectives: establishment of goals, policies, procedures; organizational structure and behavior; leadership; control systems.

MIS 5100. INTRODUCTION TO COMPUTERS AND COMPUTER DATA PROCESSING. (4 cr, \$8208; prereq 3098 or 3099 or ¶3098 or ¶3099)

Computer hardware and functions. Computer software. Tools and methods for development of computer applications. Preparing computer programs. Acquisition, organization, and management of computer resources. The computer industry. Future developments.

Mktg 3000. PRINCIPLES OF MARKETING. (4 cr, \$8000; prereq Econ 1002 or equiv)

Basic policy and strategy issues in marketing and environmental factors that affect them. Legal, behavioral, ethical, competitive, economic, and technological factors as they affect product, pricing, promotion, and marketing channel decisions.

Mktg 3085. PRICE AND PRODUCT POLICY. (4 cr, \$8085; prereq 3000)

Managerial aspects of pricing and product policies and strategies. Methods and factors in developing and updating product line and pricing decisions in industrial and consumer markets. Pricing and product line objectives, product planning evaluation; managing the product line, environmental factors affecting product and pricing strategies, quantitative aspects of product line and pricing decisions.

OAM 5056. APPLICATIONS OF ANALYTICAL METHODS AND COMPUTERS IN OPERATIONS MANAGEMENT AND ANALYSIS. (4 cr; prereq 3000, QA 3055 or #)

Application of forecasting methods, optimization techniques; simulation; product and project management methods; inventory models, quality control techniques, and computer technology problems in organizational management. Problem solving and case analysis.

QA 1050f,w,s. ELEMENTARY MANAGERIAL STATISTICS. (4 cr; prereq Math 1131 or 1141 or equiv)

Quantitative decision making. Probabilistic and statistical techniques in decision making, data analysis, and management information systems—laws of probability, sampling, estimation, and regression. GrA

QA 3055. INTRODUCTION TO MANAGEMENT SCIENCES. (4 cr; prereq QA 1050, Math 1142 or equiv)

Analytical approaches and techniques within business contexts. Mathematical models, statistical techniques related to data acquisition, and the use of computers and computer techniques in solving organizational problems: deterministic and stochastic models. Problem solving and case analysis.

Tran 3054. FUNDAMENTALS OF TRANSPORTATION. (4 cr, \$8154; prereq Econ 1002 or equiv)

Organization and economic aspects of transportation systems of the United States—rail, highway, air, pipeline, and water. Administration of transportation by users, carriers, and government.

CELL BIOLOGY

See Genetics and Cell Biology.

Chemistry (Chem)

Institute of Technology

Staff—Chairman, Paul G. Gassman, 139 Smith Hall; **Administrative Vice Chairman,** Archie S. Wilson; **Academic Vice Chairman and Director of Undergraduate Studies,** Harold S. Swofford, Jr.

Professors: Bloomfield, Brasted, Britton, Crawford, Dahler, Davis, Dodson, Fenton, Gassman, Hexter, Kreevoy, Leete, Lipsky, Lumry, Mead, Meehan, Miller, Moscovitz, Noland, O'Connor, Overend, Prager, Reynolds, Wertz, Wilson

Associate Professors: Borch, Bryant, Conroy, Gentry, Gougoutas, Mossotti, Pignolet, Swofford, Truhlar

Assistant Professors: Ellis, Gray, Hoye

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Math 1211-1221-1231 or 1311-1321-1331; Math 3211 (1311-1321-1331 recommended); Chem 1031-1032, 1133

Major Requirements—3331, 3332, 3333, 3335, 3336, 5133, 5533, 5534, 5535, 5536, 5538, 5731, 5732, 5734, 5735

Math 1311-1321-1331, 3211

Phys 1271-1281-1291, 1275-1285-1295

3 qtrs German (may be used to meet language requirement)

More information is available at the undergraduate advising office, 147b Smith (373-7858).

Note—Each student must present a deposit card for admission to a laboratory section. See Deposit Cards in the *Class Schedule*.

1001-1002†. CHEMICAL PRINCIPLES AND COVALENT SYSTEMS. (5 cr per qtr, §1004-1005, §1014, §1031-1032; primarily for forestry and nursing students, a terminal course; prereq 2 yrs high school mathematics...high school chemistry recommended; 4 lect, 1 rec, and 3 lab hrs per wk)

Principles of chemical change; structural concepts of nuclei, atoms, molecules; laws of dynamic behavior of matter; equilibrium concepts, especially those relevant to living systems; application of principles with emphasis on organic and biological species. Lab fee. GrB

1004-1005†. GENERAL PRINCIPLES OF CHEMISTRY. (5 cr per qtr, §1014, §1031-1032; primarily for non-chemistry majors; prereq predicted mathematics GPA 1.90 on ACT. Math 0009 or college course in algebra...4 yrs high school mathematics, high school chemistry recommended; 4 lect, 1 rec, and 3 lab hrs per wk)

Chemistry from the standpoint of atomic structure; periodic properties of elements and compounds derivable from structural considerations; laws of behavior of matter, theories of solutions, acids, bases, and equilibria. Lab fee. GrB

1006. PRINCIPLES OF SOLUTION CHEMISTRY. (4 cr; prereq 1005 or 1032; 3 lect and 4 lab hrs per wk)

Chemistry of selected cations and anions. Detection methods—spectrophotometric, potentiometric, and chromatographic procedures. Metal ion studies including systematics; acid-base principles; influence on the environment; importance in biological systems; formation and stereochemistry of complexes. Lab fee. GrB

1031-1032†. CHEMICAL PRINCIPLES I AND II. (5 cr per qtr, §1004, §1014; prereq 4 yrs high school mathematics, 1 yr high school chemistry, chemistry or chemical engineering major or §...high school physics recommended; 3 lect, 1 lect discussion, 1 lab discussion plus one 4-hr lab per wk)

Consolidation of basic principles of chemistry with quantitative analysis; stoichiometry, development and use of structural concepts, energetics, geometry of molecules, bonding, the behavior of gaseous and liquid states. The solid state, theory of solutions, equilibrium, gas and condensed phases, behavior and nature of the solution process, acids and bases. GrB

1133. ELEMENTARY QUANTITATIVE ANALYSIS. (5 cr; prereq 1032; 3 lect, two 4-hr labs per wk)

Theory and practice of chemical methods of analysis. Lab fee. GrB

3100-3101†. QUANTITATIVE ANALYSIS. (3/2 cr; for non-chemistry majors; prereq 1005...3100 or §3100 for 3101)

3100: Modern quantitative methods of analysis. Lecture. 3101: Modern quantitative methods of analysis, including elementary physicochemical procedures. Laboratory. Lab fee. GrB

3301. ELEMENTARY ORGANIC CHEMISTRY. (3 cr; prereq 1005 or 1032 or equiv; 3 lect, 1 quiz or conf per wk)

Important classes of organic compounds, both aliphatic and aromatic; some heterocyclic compounds. GrB

Course Descriptions—Major Sequences

- 3302. ELEMENTARY ORGANIC CHEMISTRY.** (3 cr; prereq 3301, 3305, or ¶3305 (passing grade required for cr in 3302; 3 lect, 1 quiz or conf per wk)
Continuation of Chem 3301. GrB
- 3303. ELEMENTARY ORGANIC CHEMISTRY.** (4 cr; prereq 3302, 3306 or ¶3306 (passing grade required for cr in 3303; 4 lect per wk)
Basic principles of organic chemistry and survey of organic reaction mechanisms, to coordinate knowledge acquired in 3301, 3302. GrB
- 3305. ELEMENTARY ORGANIC CHEMISTRY LABORATORY.** (2 cr; prereq 3301 or ¶3301; 1 lab conf, 4 lab hrs per wk)
Laboratory: techniques used in preparation of typical organic substances. Lab fee. GrB
- 3306. ELEMENTARY ORGANIC CHEMISTRY LABORATORY.** (2 cr; prereq 3302 or ¶3302; 1 lab conf, 4 lab hrs per wk)
Continuation of 3305. Lab fee. GrB
- 3307. ELEMENTARY ORGANIC CHEMISTRY LABORATORY.** (4 cr; prereq 3306 or equiv; 8 lab hrs, 1 lect, and 1 conf per wk)
Reactions of typical functional groups; methods of organic qualitative analysis. Lab fee. GrB
- 3331. INTRODUCTORY ORGANIC CHEMISTRY I.** (5 cr, §3301; prereq 1133 or 1 yr college chemistry; 5 lect per wk)
Important classes of organic compounds; their constitutions, configurations, and conformations; relationship between molecular structure and chemical reactivity. GrB
- 3332. INTRODUCTORY ORGANIC CHEMISTRY II.** (3 cr [no cr given until 3335 has been completed]; prereq 3331; 3 lect per wk)
Reactions of organic compounds; nucleophilic substitution; nucleophilic addition; electrophilic substitution; electrophilic addition; elimination reactions; molecular rearrangements; oxidation and reduction. GrB
- 3333. INTRODUCTORY ORGANIC CHEMISTRY III.** (3 cr; prereq 3332; 3 lect per wk)
Free radical reactions, electrocyclic reactions, photochemistry, organic synthesis, heterocyclic compounds, synthetic polymers, chemistry of natural products and life. GrB
- 3335. INTRODUCTORY ORGANIC CHEMISTRY II LABORATORY.** (2 cr; prereq 3332 or ¶3332 [¶3332 is recommended]; two 4-hr labs per wk)
Laboratory to accompany 3332. Lab fee. GrB
- 3336. INTRODUCTORY ORGANIC CHEMISTRY III LABORATORY.** (2 cr; prereq 3333 or ¶3333 [¶3333 is recommended]; two 4-hr labs per wk)
Laboratory to accompany 3333. Lab fee. GrB
- 3499. SENIOR THESIS.** (Cr ar; prereq 4th yr, §)
Written final senior thesis report. GrB
- 3970. DIRECTED STUDIES.** (Cr ar; prereq §)
Faculty-guided individual learning experience on or off campus in areas not covered by regular courses.
- 3991, 3992, 3993. SPECIAL TOPICS IN CHEMISTRY.** (Cr ar; prereq §)
Topics in chemistry, areas of current research. Primarily for 3rd- and 4th-year chemistry majors.
- 5122. ADVANCED ANALYTICAL CHEMISTRY.** (4 cr; prereq 3100 and 3101 or 1032)
Equilibria in aqueous and nonaqueous systems. GrB
- 5123. SURVEY OF MODERN ELECTROANALYTICAL TECHNIQUES, PRINCIPLES, AND PRACTICE.** (5 cr; prereq 5126 or 8101 or equiv)
Potentiometry, polarography, coulometry, linear scan, cyclic voltametry, pulse methods. Experiments to complement lectures. Lab fee. GrB
- 5126. MODERN ANALYTICAL CHEMISTRY.** (4 cr; prereq 3332 and 3335; 2 lect, two 3-hr labs per wk; primarily for chemical engineering majors)
Strategies and techniques for solving modern analytical problems. Use of modern instruments in analysis. Lab fee. GrB
- 5127. ANALOG INSTRUMENTATION.** (5 cr; prereq Phys 1291, Math 1231 or 1331, or equiv, or §; 3 lect and two 4-hr labs per wk)
Electronic design and circuitry, servo systems, operational amplifiers, feedback control, oscillators. Lab fee. GrB
- 5128. DIGITAL INSTRUMENTATION.** (5 cr; prereq 5127; 3 lect and two 4-hr labs per wk)
Digital measurements; signal domain conversions, combinational and sequential circuit design; introduction to microprocessors. Lab fee. GrB

- 5129. THEORY OF INSTRUMENTAL MEASUREMENTS.** (5 cr; prereq 5128 or Φ , Math 1231 or 1331 or equiv, Phys 1295; 3 lect and 8 lab hrs per wk)
Instrumental techniques for detection and measurements; signal flow in control systems; frequency-domain and time-domain filtering; information flow in nonlinear systems. Lab fee. GrB
- 5133. CHEMICAL INSTRUMENTATION AND ANALYSIS.** (5 cr, \S 5126; prereq 1133, 5534; 3 lect and two 4-hr labs per wk)
Methodology and practices for solving analytical problems. Modern instrumental techniques used in analysis. Lab fee. GrB
- 5211. ADVANCED CHEMICAL KINETICS.** (4 cr; prereq 3201 and 5505)
Factors that govern rates of chemical reactions in gaseous and condensed phases. Deduction of reaction mechanisms from rate data and theoretical interpretation in terms of dynamical and statistical models. Coupled reactions. GrB
- 5212. CHEMICAL DYNAMICS IN SOLUTION.** (4 cr, \S 8212; prereq undergrad physical chemistry course with a section on kinetics or Φ)
Substitution reactions; electron-transfer reactions; electrode reactions; linear free energy relationships; structure of intermediates; ion pairing, solvent effects, ionic strength; diffusion-controlled processes; cage effects.
- 5301. SPECTRAL METHODS FOR ORGANIC QUALITATIVE ANALYSIS.** (4 cr, \S 8302; prereq 3303; 3 lect and 1 conf hrs per wk)
Nuclear magnetic resonance and infrared spectral analysis as applied to solution of organic problems. GrB
- 5302. ORGANIC SYNTHESIS.** (4 cr; prereq 3303 or 3333 or equiv; 8 lab and 2 conf hrs per wk)
Reactions of typical functional groups; modern laboratory methods of organic synthesis. Lab fee. GrB
- 5305. INTERMEDIATE ORGANIC CHEMISTRY.** (4 cr; prereq 3303 or 3333 or equiv; 3 lect and 1 rec hrs per wk)
Physical organic chemistry, with applications to typical chemistry problems. Reactions of typical functional groups; modern laboratory methods of organic synthesis. GrB
- 5309. APPLICATIONS OF MOLECULAR ORBITAL THEORY IN ORGANIC CHEMISTRY.** (4 cr; prereq 5536 or Phys 3501 or Φ)
Application of quantum mechanics to organic reactions and photochemistry. GrB
- 5342. CHEMISTRY OF NATURAL PRODUCTS.** (3 cr; prereq 3303; offered 1976-77 and alt yrs)
Biosynthesis of secondary natural products. Emphasis on alkaloids, terpenes, and acetogenins. GrB
- 5343. CHEMISTRY OF NATURAL PRODUCTS (STEROIDS).** (3 cr; prereq 3303 or equiv; offered 1977-78 and alt yrs)
Steroidal hormones, their isolation, proof of structure, synthesis, and action. GrB
- 5344. HETEROCYCLIC COMPOUNDS.** (3 cr; prereq 3303; offered 1977-78 and alt yrs)
Typical classes of heterocyclic compounds, their chemical and physical properties and uses, synthesis. GrB
- 5365. ORGANIC QUALITATIVE ANALYSIS.** (4 cr, \S 3307; prereq 3303 or equiv; 8 lab and 2 conf hrs per wk)
Reactions of typical functional groups; methods of organic structure determination. Lab fee. GrB
- 5520-5521. ELEMENTARY PHYSICAL CHEMISTRY.** (3 cr per qtr; prereq 1 yr college chemistry, Math 3211, Phys 1291 or 1106, or Φ Phys 1291)
General survey. 5520: Chemical thermodynamics. 5521: Kinetics, statistical mechanics, molecular structure. GrB
- 5522. PHYSICAL BIOCHEMISTRY OF SOLUTIONS.** (4 cr, \S BioC 5522; prereq 2 qtrs physical chemistry)
Physical chemistry of equilibrium and transport phenomena in solution with application to biochemical systems. Electrolyte and polyelectrolyte solutions, solutions of macromolecules, binding of substrates, diffusion and sedimentation, viscosity diffusion-controlled kinetics, interfacial phenomena colloids and miscelles. GrB
- 5523. PHYSICAL BIOCHEMISTRY: STRUCTURE AND INTRAMOLECULAR FORCES.** (4 cr, \S BioC 5523; prereq 5522 or 2 qtrs physical chemistry plus Φ ...some biochemistry desirable)
Determination of structure of biological macromolecules by diffraction and spectroscopic methods; energetics and statistical mechanics of biochemical reactions and structural transitions. GrB

Course Descriptions—Major Sequences

- 5524. BIOPHYSICAL CHEMISTRY: DYNAMICS.** (4 cr, §BioC 5524; prereq 2 qtrs physical chemistry, BioC 5741...BioC 5002 or equiv desirable)
Application of thermodynamics, statistical mechanics, and chemical kinetics to biological systems. Theoretical and experimental enzyme kinetics, solvent effects, structure-function relation. GrB
- 5530. THERMODYNAMICS.** (4 cr; prereq minimum of 2 qtrs physical chemistry)
Application to gases, chemical reactions, solutions, phase equilibria. GrB
- 5531. FOUNDATIONS OF QUANTUM CHEMISTRY.** (4 cr, §5502; prereq Phys 1291 or equiv, Math 3211 or 3411 or equiv, §)
Postulates of quantum mechanics. Wave functions, solutions of the Schroedinger equation, variation and perturbation theory, modern techniques for calculating bound state wave functions and electronic energies of molecules; material necessary as background for 8305 and/or 8705. GrB
- 5533. QUANTUM CHEMISTRY.** (4 cr; prereq 1 yr college chemistry, Phys 1291 or ¶1291, or Phys 1106 with §, Math 3211)
Principles of quantum mechanics; applications to atomic and molecular structure and to spectroscopy. GrB
- 5534. CHEMICAL THERMODYNAMICS.** (5 cr; prereq 1 yr college chemistry, Math 3211, Phys 1291 or ¶1291, or Phys 1106 with §)
Principles of thermodynamics; application to chemical systems. GrB
- 5535. STATISTICAL MECHANICS AND REACTION KINETICS.** (4 cr; prereq 5534)
Continuation of 5534. Statistical thermodynamics and the kinetic theory of gases; application to reaction rate theory. Phenomenological kinetics and experimental methods. GrB
- 5536. QUANTUM CHEMISTRY LABORATORY.** (1 cr; prereq 5533 or ¶5533)
Experiments illustrating quantum mechanical principles and methods. Lab fee. GrB
- 5538. PHYSICAL CHEMISTRY LABORATORY.** (1 cr; prereq 5535 or ¶5535)
Experiments in thermodynamics and reaction kinetics. GrB
- 5571-5572. MOLECULAR SPECTROSCOPY.** (4 cr per qtr; prereq 5502 or 5531 or equiv for 5571)
Examination of types of molecular spectroscopy—how structure information is obtained from spectra. GrB
- 5574. MOLECULAR STRUCTURE AND SCATTERING.** (3 cr; prereq 5572)
Determination of geometrical structure of molecules by X-ray, electron, and neutron scattering. Effect of internal molecular motions on the structural determination. Inelastic scattering and molecular energies. GrB
- 5580. PHYSICAL CHEMISTRY OF POLYMERS.** (3 cr; prereq 5535 or 5534 or §; offered 1978 and alt yrs)
Molecular weight distribution, statistical mechanics of polymer solutions, network polymers, viscosity, light scattering, viscoelastic behavior. GrB
- 5601. BIOORGANIC CHEMISTRY.** (4 cr; prereq 3303 or equiv)
Chemistry of biologically important functional groups and compounds, including amino acids, lipids, carbohydrates, organophosphates. Techniques for radio labeling and for synthesis of analogs of biologically active molecules. GrB
- 5610. PRINCIPLES OF POLYMER SCIENCE.** (4 cr, §MatS 5610; prereq physical chemistry or §; 3 lect and 3 lab-rec hrs per wk)
Polymer synthesis and physical chemistry: polymerization kinetics, molecular weight distribution, network formation, macromolecules in solution and their characterization, the glassy state, rubber elasticity, flow and viscoelasticity, environmental degradation. Lab fee. GrB
- 5703. ADVANCED INORGANIC CHEMISTRY.** (5 cr; prereq 3201 and 5502; 3 lect, 1 discussion, and one 3-hr lab per wk)
Modern treatment of transition and nontransition metal chemistry. Structure, bonding, and stereochemistry of inorganic and organometallic compounds. Current topics. Lab fee. Not offered after 1976-1977. GrB
- 5705. SYMMETRY IN CHEMISTRY.** (4 cr; prereq 5732)
Group theory; symmetry classification of inorganic and organic molecules; representations of symmetry point groups; symmetry of wave functions. Symmetry aspects of molecular orbital theory. GrB
- 5710. ADVANCED INORGANIC CHEMISTRY I: SURVEY OF THE TRANSITION METALS.** (4 cr; prereq 1 yr each of organic and physical chemistry)
Reactions and properties of the transition metals, including the rare earths, and their compounds. Coordination chemistry, using elementary ideas of ligand field theory. GrB

- 5711. ADVANCED INORGANIC CHEMISTRY II: SURVEY OF THE CHEMISTRY OF THE NONTRANSITION ELEMENTS.** (4 cr; prereq 1 yr each of organic and physical chemistry)
Reactions and properties of the nontransitional elements, including the rare gases, and their compounds. GrB
- 5731. INORGANIC CHEMISTRY I.** (3 cr; prereq 5533; 3 lect per wk)
Structure, bonding, thermochemistry, acid-base chemistry, physical and chemical properties of inorganic substances. Systems in which *s* and *p* electrons are important. GrB
- 5732. INORGANIC CHEMISTRY II.** (3 cr; prereq 5731; 3 lect per wk)
See description of 5731. Emphasis on transition metal compounds in which *d* electrons are important. Current topics such as boron hydrides, inert gas compounds, organometallic compounds, and biologically important metal compounds. GrB
- 5734. INORGANIC CHEMISTRY LABORATORY I.** (2 cr; prereq ¶5731 or 5731 or ¶; 1 lect, 3 lab hrs per wk)
Laboratory to accompany 5731. Lab fee. GrB
- 5735. INORGANIC CHEMISTRY LABORATORY II.** (2 cr; prereq ¶5732 or 5732 or ¶; 1 lect, 3 lab hrs per wk)
Laboratory to accompany 5732. Lab fee. GrB
- 5801, 5802, 5803. THE CHEMISTRY OF INDUSTRY.** (4 cr per qtr; prereq chemistry sr or grad student or ¶)
The basic industrial and polymer chemistry and technology on which industry is based. Relationship of basic properties to industrial utility. Strong emphasis on economics, social problems, and the industrial environment. GrB
- 5991, 5992, 5993. SELECTED TOPICS IN CHEMISTRY.** (Cr ar; prereq Δ, sr)
Topics of current interest. Consult department for details of a particular quarter.

Chicano Studies (Chic)

Staff—Chairman: Manuel P. Guerrero, 483 Ford Hall

Associate Professor: Guerrero

Instructors: Gonzalez, Gaitan

The department curriculum offers an expanding core of multidisciplinary offerings designed to acquaint students with the historical and cultural experience of Mexican-Americans and to prepare students in such areas as bilingual-bicultural education and the general field of Chicano studies.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1105, 1106, 1107, 3211

Major Requirements—Eight 3xxx courses, including:

12 cr from 3330, 3411, 3510, 3511; or

20 cr from 3212, 3221, 3324, 3345, 3507, 3508, 3615, Hist 5424, 5425, Pol 5455,

5739, Soc 5671, 5951; or from Chic 3112, 3113, 3114, 3116, 3405, 3406

Completion of language requirement using Spanish courses

1105f. INTRODUCTION TO CHICANO STUDIES: THE BEGINNINGS. (4 cr)

Convergence of Europe and America in Mesoamerica, leading to the emergence of Mexican society. Pre-Columbian Mesoamerican civilizations, Iberian civilization, the society that developed as a result of conquest of Mesoamerica by Spain. GrC

1106w. INTRODUCTION TO CHICANO STUDIES: THE MEXICAN-AMERICAN EXPERIENCE, 1821-1960. (4 cr)

Convergence of Spanish-Mexican and Anglo-American society in the Spanish Borderlands, now termed the Southwest. Aspects of this convergence; its historical consequences. GrC

1107s. INTRODUCTION TO CHICANO STUDIES: THE CHICANO IN CONTEMPORARY SOCIETY. (4 cr)

Conditions that led to Chicano social, political, economic, and cultural consciousness; forms in which it has been expressed. The farmworker struggle, land-grant litigation, urban strife, education. GrC

Course Descriptions—Major Sequences

- 1201, 1202, 1203. SPANISH FOR SPANISH SPEAKERS.** (5 cr per qtr, §Span 1101-1102-1103; limited to Chicanos and other Spanish-speaking minorities with little or no formal training in Spanish)
1201: Pronunciation, basic patterns, amplification of vocabulary. 1202: Variant forms and structures. 1203: Fluency and basic writing skills. GrA
- 3112f. BILINGUAL EDUCATION: PRINCIPLES, PRACTICES, AND PHILOSOPHY.** (5 cr; educational or general psychology helpful)
Philosophy and principles of bilingual education. GrC
- 3113w. BILINGUAL EDUCATION: METHODS AND MATERIALS AT THE ELEMENTARY AND PRESCHOOL LEVELS.** (5 cr; educational or general psychology helpful)
Physical dexterity activities, intellectual and mental development through memorization of rhymes, rounds, songs, dances, and other cultural material. All material in Spanish. GrC
- 3114s. BILINGUAL EDUCATION: SECONDARY SCHOOL EMPHASIS; PRACTICES, METHODS, AND MATERIALS.** (5 cr; educational or general psychology helpful)
Methods and philosophy of education of bilingual-bicultural secondary school students to make American education relevant and valuable. Critiques of materials by class members; application to school situations that can serve as clinical field studies. GrC
- 3116s. LATINOS IN EDUCATION.** (4 cr)
Social, cultural, and professional issues encountered by the Spanish-speaking and other minorities in pursuit of opportunities in higher education. GrC
- 3211w. CHICANO PHILOSOPHY.** (4 cr)
The antithesis and thesis of Anglo-American and Mexican philosophy, studied to arrive at the synthesized Chicano philosophy. The Chicano as product of three philosophies; his place in existential philosophy. GrC
- 3212s. LA CHICANA.** (4 cr)
Study of the philosophy and psychology of the Chicano in order to understand the Chicana. Women of La Raza; their impact on literature, history, sociology, and politics. Literature by and about Chicanas. GrC
- 3221. CURANDERISMO, MEXICAN-AMERICAN FOLK MEDICINE.** (4 cr; prereq 1106 or §)
Relationship of man and natural medicinal remedies in Mexican-American folk cultures; religious rites and ceremonialism in the life of the Southwestern and Mexican Indians. GrC
- 3324f. THE MEXICAN IN THE UNITED STATES.** (4 cr; prereq 1105 or §)
Historical experience of Mexicans in the United States, 1846 to 1972. GrC
- 3330. CHICANO HISTORY: TOPICS.** (4 cr per qtr; prereq 1105, 1106, 1107 or 3324)
Mexican-American history: migration, labor movements, Chicanos in agriculture, the "pacheco" phenomenon, border conflict, regional history. GrC
- 3335. THE CHURCH AND THE MEXICAN-AMERICAN.** (4 cr)
Functions of the church in relation to the Mexican-American in the Southwest, 1600 to the present. GrC
- 3341w. CHICANO-TEJANO HISTORY.** (4 cr)
The Chicano in Texas, 1550 to the present. GrC
- 3345. MEXICAN-UNITED STATES RELATIONS, 1821-1910.** (4 cr)
Legal and political relations between Mexico and the United States, 1821 to 1910; treaties. GrC
- 3405. SPANISH FOR THE SPANISH-SPEAKING—INTERMEDIATE CONVERSATION AND COMPOSITION.** (4 cr; prereq 1201, 1202, 1203 or 1 yr of Spanish)
Development of oral and writing skills; conversations and compositions on cultural and historical topics concerning the Chicano experience. GrA
- 3406. SPANISH FOR THE SPANISH-SPEAKING—ADVANCED CONVERSATION AND COMPOSITION.** (4 cr; prereq 1201, 1202, 1203 or 1 yr of Spanish and 3405)
Oral and writing skills; discussions and compositions related to Chicano thought and literature. GrA
- 3411. CHICANO DIALECTS OF THE UNITED STATES.** (4 cr, §3401; prereq knowledge of World Standard Spanish)
Dialectology of the Southwest; concentration on Colorado and New Mexican Spanish. Etymologies of nouns of Chicano regions. Contrastive analysis of World Standard Spanish and the dialect of the Twin Cities. Semantics of various nouns. GrA
- 3413. CLASSICAL NAHUATL.** (4 cr; prereq reading knowledge of Spanish)
Reading classical Nahuatl. GrA
- 3507. INTRODUCTION TO CHICANO LITERATURE.** (4 cr)
Chicano fiction, poetry, and theatre. GrD

- 3508. INTRODUCTION TO CHICANO LITERATURE: TEXT AND CONTEXT.** (4 cr)
Major literary works by Chicano writers in their social and historical context. GrD
- 3510. CHICANO LITERATURE: TOPICS.** (4 cr per qtr [12 cr max]; prereq 3507 or 3508 or *...some knowledge of Spanish recommended)
New dimensions in Chicano literature; prominent themes, figures, tendencies, trends. GrD
- 3511. CHICANO LITERATURE: TEXT AND CONTEXT.** (4 cr)
Fiction, poetry, and theatre by Chicano writers: Rudolfo Gonzalez, Alurista, Jose Villarreal, Thomas Rivera, Luis Valdez, and others. GrD
- 3513. SURVEY OF AZTEC LITERATURE.** (4 cr)
Main representations of Aztec literature such as epic, religious, dramatic and historic poetry, prose. Post-conquest literature up to 1700. GrD
- 3615. CONTEMPORARY CHICANO PARTICIPATION IN POLITICS.** (4 cr)
Recent and contemporary Chicano political organizations and personalities in the United States; their societal impact. GrC
- 3970f,w,s,su. DIRECTED STUDIES.** (Cr ar; prereq *)
Guided individual reading or study.
- 3991-3992-3993. MOTIVATIONAL TUTORIAL FIELD EXPERIENCE LEARNING.** (5 cr per qtr; prereq beginning range in Spanish speaking, reading, and composition skills)
Field experience: tutorial assistance to Latino elementary students. Focus on development of bilingual and bicultural teaching materials and on awareness of Chicano culture and Spanish language. GrC
- 5970. DIRECTED STUDIES.** (Cr ar; prereq *)
Guided individual reading or study.

Child Psychology (CPsy)

College of Education

Staff—Director, Willard W. Hartup, 196 Child Development; **Associate Director,** John C. Masters, 104 Child Development; **Director of Graduate Studies,** Herbert L. Pick, 174 Child Development; **Director of Undergraduate Studies,** Daniel P. Keating, 168 Child Development; **Departmental Honors Adviser,** Albert Yonas, 176 Child Development

Professors: Charlesworth, Hartup, Masters, Moore, A. Pick, H. Pick, Scarr-Salapatek, Tapp, Trabasso

Associate Professors: Collins, Maratsos, Salapatek, Sroufe, Yonas

Assistant Professors: Keating, Perlmutter

Instructors: Sternberg, Stoner, Yelensky

Child psychology concerns behavioral development and maintenance from the prenatal period to maturity in the spheres of cognition, ethology, genetics, language, learning, perception, and social behavior.

Detailed information regarding the major in child psychology, independent or directed study courses, and other current course offerings is available from the undergraduate advisory committee, 106 Child Development, or in 104 Child Development. Honors contract registration is available for all courses offered by the Child Psychology Department with the exception of those offered for S-N credit only. Qualified students should consult the Honors office, 115 Johnston Hall.

For a specialized curriculum in nursery school and kindergarten education, see the *College of Education Bulletin*. Students interested in studies leading to certification for nursery school education should consult the adviser to the certification program, 226 Child Development.

Course Descriptions—Major Sequences

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Psy 1001, 1004-1005; CPsy 1301

Major Requirements—One course from 3302, 3303, 5303, 3304

Psy 3801 or equiv

Two courses from 3331, 3347, 5329, 5331, 5341, 5343, 5345

Two courses from 3311, 3313, 5311, 5313, 5315, 5319, 5333, 5334, 5335, 5339

Minimum of 8 additional cr from any 3xxx or 5xxx child psychology courses, which may include two of the following courses: 3330, 3980, 5970, 5990; each course may only be counted once toward the major

Psychology cr may not be counted toward the 30 3xxx-5xxx cr outside the major.

General Courses—CPsy 1301, 3302, 3303/5303, and 3304 deal with general education subject matter that is often of interest to students in other concentrations.

1301f,w,s,su. INTRODUCTORY CHILD PSYCHOLOGY. (4 cr; prereq 5 cr introductory psychology)

(Old 3301) Science of child behavior; review of theories and research. GrC

1970f,w,s,su. DIRECTED STUDIES. (Cr ar; prereq ‡)

Readings in child psychology.

3302. INFANCY. (4 cr; prereq 1301 or 3301)

Perceptual, motor, emotional, social, and cognitive development during the first 2 years of life; the developing infant in his or her social and physical environment. GrC

3303f,w,s,su. ADOLESCENT PSYCHOLOGY. (4 cr, §5303; prereq 5 cr introductory psychology)

Physical, cognitive, and social development during adolescence. GrC

3304. INTRODUCTION TO MATURITY AND AGING. (4 cr; prereq 1301 or 3301 or equiv)

Empirical and theoretical issues in developmental psychology of maturity and aging; perceptual-motor, cognitive, and social-psychological changes from young adulthood to old age. GrC

3311f,s,su. BEHAVIORAL AND EMOTIONAL PROBLEMS. (4 cr, §5311; prereq 1301 or 3301 or equiv)

Description, etiology, development of behavioral and emotional problems of children; treatment where germane. Does not include problems deriving primarily from sensory or physical handicap, mental retardation, or neurological impairment. GrC

3313. PSYCHOLOGY OF ATYPICAL CHILDREN. (4 cr, §5313; prereq 1301 or 3301 or equiv)

Research, assessment, and behavior associated with atypicality; evaluation of research in areas of major concern for sensory, language, intellectual, and physical deviation. GrC

3330f,w,s. DIRECTED EXPERIENCES. (4 cr per qtr; S-N only; prereq 1301 or 3301 and ‡)

Intellectual and/or social development of children, adolescents, and adults as individuals or members of families or peer groups. Active participation with children, adolescents, or adults required. GrC

3331f,s,su. PROCESSES OF SOCIALIZATION OF CHILDREN. (4 cr, §5331; prereq 1301 or 3301 or equiv)

Processes of social learning: identification, social influence, imitation, reward and punishment, internalization, and object choice. GrC

3347. CHILDREN'S LEARNING AND INTELLECTUAL SKILLS. (4 cr; prereq 1301 or 3301)

Current research on learning, problem solving, intellectual performance in children; practical applications. GrC

3360. HONORS SEMINAR I: CURRENT RESEARCH IN DEVELOPMENTAL PSYCHOLOGY.

(4 cr per qtr; primarily for child psychology majors; prereq 1301 or 3301 or equiv, ‡)
Introduction to ongoing research programs, preparation for independent research (thesis research if honors major), discussion of career opportunities, other topics. Open to all students; required for honors majors. Normally taken in junior year. GrC

3361. HONORS SEMINAR II: RESEARCH AND THEORY IN DEVELOPMENTAL PSYCHOLOGY. (4 cr; primarily for child psychology majors; prereq 1301 or 3301 or equiv, ‡)

History, theory, and systems of research in developmental psychology; interpreting recurring issues. Open to all students; required of honors majors. Normally taken in senior year. GrC

3980f,w,s. DIRECTED INSTRUCTION. (1-4 cr; S-N only; prereq ‡)

Undergraduates serve as teaching assistants in courses they have completed for credit.

- 5303f,w,s,su. ADOLESCENT PSYCHOLOGY.** (4 cr, §3303; prereq 5 cr introductory psychology)
For description, see 3303. GrC
- 5310. TOPICS IN CHILD PSYCHOLOGY.** (1-4 cr per qtr; prereq 1301 or 3301 and §)
Selected topics in the general content area.
- 5311f,s,su. BEHAVIORAL AND EMOTIONAL PROBLEMS.** (4 cr, §3311; prereq 1301 or 3301 or equiv)
For description, see 3311. GrC
- 5313. PSYCHOLOGY OF ATYPICAL CHILDREN.** (4 cr, §3313; prereq 1301 or 3301 or equiv)
For description, see 3313. GrC
- 5315. INTRODUCTION TO MENTAL RETARDATION.** (4 cr, §SpEd 5120; prereq 1301 or 3301 or equiv)
Psychological and educational problems related to the mentally retarded. GrC
- 5319. CLINICAL PROCEDURES WITH CHILDREN AND YOUTH.** (4 cr; prereq 12 cr in psychology, educational psychology, sociology, or child psychology)
Assessment and intervention procedures of clinical child psychology in clinical and community settings. Primarily for students not majoring in clinical psychology. GrC
- 5329. GENETICS, ETHOLOGY, AND DEVELOPMENT.** (4 cr; prereq 1301 or 3301 or equiv; offered 1977-78 and alt yrs)
Evolutionary theory and behavioral genetics applied to understanding of development of human behavior; formation of species-typical adaptive behavior and individual differences in infancy, childhood, adolescence. GrC
- 5331f,s,su. PROCESSES OF SOCIALIZATION OF CHILDREN.** (4 cr, §3331; prereq 1301 or 3301 or equiv)
For description, see 3331. GrC
- 5333. PERSONALITY DEVELOPMENT.** (4 cr; prereq 3331 or 5331)
Psychoanalytic and behavioral theory formulations, related research literature in content areas (e.g., attachment, dependency, aggression, competence, and sex typing). GrC
- 5334. CHILDREN AND YOUTH IN SOCIETY.** (4 cr; prereq §; offered 1977-78)
Rule-acquisition process in children and youth and its relation to concepts of rights, roles, and responsibilities; an interdisciplinary theoretical and research examination of the development of moral, political, and legal ideologies in sub- and cross-cultural contexts. GrC
- 5335. PEER RELATIONS.** (4 cr; prereq 3331 or 5331; offered 1977-78)
Peer influences, social interactions and relations; developmental changes. GrC
- 5339. PARENT-CHILD RELATIONS.** (4 cr; prereq 3331 or 5331)
Parent-child relationships and evaluation of research in such areas as cross-cultural child-rearing perspectives, alternative parenting roles, economics of parent-child relations, rights of parents and children. GrC
- 5341. PERCEPTUAL DEVELOPMENT.** (4 cr; prereq 1301 or 3301)
Perceptual learning and the development of sensory and perceptual processes. GrC
- 5343. COGNITIVE DEVELOPMENT.** (4 cr; prereq 1301 or 3301)
Cognitive processes; relevant theory, research literature, and methodology. GrC
- 5345. LANGUAGE DEVELOPMENT.** (4 cr; prereq 1301 or 3301)
Structure and function of language; factors influencing development; methodological problems, language scales, theories. GrC
- 5970f,w,s,su. DIRECTED STUDIES.** (Cr ar; prereq §)
Guided individual reading or study.
- 5990f,w,s,su. DIRECTED RESEARCH.** (Cr ar; prereq §)
Individual empirical investigation.

CHINESE

See East Asian Languages.

Civil Engineering (CE)

Institute of Technology

- 5210. INTRODUCTION TO TRANSPORTATION PLANNING.** (4 cr; prereq §)
Transportation planning in urban areas; data requirements and travel characteristics, trip

Course Descriptions—Major Sequences

generation analysis; models of travel distribution; transit characteristics and usage; selection and evaluation of alternate transportation proposals; transportation and land link usages.

5420. INTRODUCTION TO WATER RESOURCES MANAGEMENT. (4 cr)

U.S. and world water resources; man's use of water; economic, environmental, social, and political problems related to water.

Classical Civilization (ClCv)

Staff—Committee Chairman, Robert P. Sonkowsky, 310 Folwell Hall

Advisers—Clayton (English), Cooper (Art History), Dahl (Philosophy), Hershbell (Humanities), Jones (History), Weiss (German)

This program, for which no knowledge of Greek or Latin is required, provides broad introduction to the culture and civilization of the Greek and Roman Classical period. Though many of the courses that contribute to it are offered in the Classics Department, it is an interdepartmental program.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—CLA Route I (Route II not accepted) in any language, ancient or modern. Students using a language other than Greek or Latin must take Clas 1015.

Major Requirements—80 cr in approved courses (at least 16 cr in language and literature, 16 in art history, archaeology and history, 12 in thought and religion, 12 in classical traditions), at least 60 cr in 3xxx-5xxx courses.

A list of approved courses, as well as information about special independent and other learning opportunities, is available in the Classics office, 310 Folwell Hall. Seminars are offered from time to time.

3940. PROSEMINAR: CLASSICAL TRADITIONS IN WESTERN CULTURE. (4 cr; prereq #)

Clayton, Cooper, Jones, Sheppard

The nature of Greco-Roman classical traditions manifested in various cultural spheres: language and literature, fine arts, history, science, philosophy, theology, and other disciplines; the political, social, educational, and religious life of society. GrD

Classics

Staff—Chairman, Robert P. Sonkowsky, 310 Folwell Hall

Professors: Kraabel, McDonald (on leave spring 1977), Sonkowsky

Associate Professors: Erickson, Hershbell, Keuls (on leave 1976-1977)

Assistant Professors: Coulson, Nichipor, Rochefort, Ruebel

Instructor: Moritz

Classics is the study and knowledge of the human experience of ancient Greece and Rome. The field encompasses prehistoric time as well as the interpenetration between classical culture and the ancient Near East and Minoan-Mycenaean civilization. Classics also embraces Greek and Latin studies in the medieval, Renaissance, and modern periods. Greek and Latin literatures and archaeological and artistic remains offer humane approaches to many fields of study: literature, philology, metrics, oral reading, rhetoric and poetics, archaeology, mythology, religion, philosophy, art criticism, daily life.

Many sophomores can qualify for 3xxx courses. Students with 4 years of high school Latin, 3 years of high school Greek, or advanced placement may begin 3xxx courses as entering freshmen. All courses are open to nonmajors.

Courses with the designation "Clas" require no knowledge of Greek or Latin language.

Major programs are offered in Greek, Latin, Greek and Latin (double major), and classical civilization (interdepartmental). Students who wish to undertake advanced work in both languages or design double majors should consult the department early. Courses in classics, classical philology, or modern Greek may form part of any of the four majors.

GREEK (Grk)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1104 or 1122 or 3052 or 3 yrs high school Greek or 15 cr of 1110 and Δ or equiv

Major Requirements—25 cr in Greek courses above 3052

15 additional 3xxx-5xxx cr in classics, or classical philology, or related courses in other departments, or in Greek courses above 3052, or in a combination of these

1101f-1102w†. BEGINNING CLASSICAL GREEK. (5 cr per qtr; prereq 1101 or equiv for 1102)
Language structure in context of graded reading materials. New Testament. Aesop, Xenophon, Plato. Oral reading and composition. GrA

1103s. SELECTIONS FROM GREEK PROSE. (5 cr; prereq 1102 or equiv)
Plato, Xenophon, Herodotus. GrA

1104f. GREEK READINGS: LYSIAS. (5 cr; prereq 1103 or 2 yrs high school Greek or Δ)
Orationes I, XII. GrD

1110f,w,s. INDIVIDUALIZED INTRODUCTION TO ANCIENT GREEK. (1-15 cr per qtr [15 cr max. 2-10 cr in any one qtr], §1101-1102-1103; prereq *)
A flexible, innovative approach to basic phonology, morphology, and syntax of classical and Koine Greek at a pace established by the student. Course conducted in a combination of computer assisted instruction and class meetings. Experimental course, approved for 1976-77. GrA

1111f-1122w†. HONORS COURSE: BEGINNING CLASSICAL GREEK. (5 cr per qtr; prereq regis in Honors program or high ability as indicated by college entrance records) GrA

3051f-3052w†. BEGINNING ANCIENT GREEK: ACCELERATED. (5 cr per qtr, §1101-1102, §1103, §1104)
Rapid mastery of Greek. Previous experience in another foreign language desirable. GrA

3105w. GREEK READINGS: EURIPIDES. (5 cr; prereq 1104 or Δ)
Alcestitis. GrD

3106s. GREEK READINGS: HOMER. (5 cr; prereq 1122 or 3052 or 3105 or Δ)
Iliad I-VI (selections). GrD

3120. BIBLICAL GREEK. (5 cr per qtr [15 cr max]; prereq 1104 or 1122 or 3052 or 3105 or Δ , §)
The *Septuagint*, *New Testament*, and Apostolic Fathers. Emphasis on reading proficiency and content. No text is read more than once in 3 years. GrD

3461, 3462, 3463, 3464, 3465, 3466, 3467; 3471, 3472, 3473, 3474, 3475. ADVANCED UNDERGRADUATE GREEK. (5 cr per qtr; prereq 3106 or 5 cr of 3120 or 3 yrs high school Greek or Δ)

A 2-year cycle, with one of the courses offered each quarter. 1976-77: 3461f, Orators, or 3462f, Plato. 3463w, Lyric Poetry, or 3464w, New Comedy, or 3465w, Lucian. 3466s, Herodotus, or 3467s, Thucydides. 1977-78: 3471f, Euripides, or 3472f, Sophocles. 3473w, Aristophanes, or 3474w, Byzantine Greek. 3475s, Homer. GrD

3960. HONORS TUTORIAL. (5 cr per qtr; prereq Δ)

3970. DIRECTED STUDIES. (1-5 cr per qtr; prereq § and Δ)
Guided individual reading or study.

5012. PROSE COMPOSITION. (2 cr; prereq 3106 or Δ) GrA

5264, 5265, 5266. SURVEY OF GREEK LITERATURE. (4 cr per qtr; prereq §5012)
5264: Epic and lyric poetry. 5265: Prose. 5266: Drama. GrD

Course Descriptions—Major Sequences

- 5371, 5372, 5373, 5374, 5375, 5376, 5377, 5378, 5379. GREEK LITERATURE.** (3 cr per qtr)
Authors read vary from term to term; different authors in each course. 5371: Oratory. 5372: Tragedy. 5373: Comedy. 5374: History. 5375: Philosophy. 5376: Religious texts. 5377: Epic. 5378: Lyric 5379: Romance. GrD
- 5381. BYZANTINE TEXTS.** (3 cr; prereq 2 yrs of classical Greek or #)
Byzantine literature in the original. GrD
- 5621. GREEK PALEOGRAPHY.** (3 cr; prereq 5 3xxx-5xxx cr in Greek or #)
Styles of writing in literary papyri and later manuscripts; transmission of ancient texts. GrD
- 5794. PROSEMINAR: INTRODUCTION TO CLASSICAL STUDIES.** (3 cr, §Lat 5794; required of all new grad students; prereq grad major or #)
Research in classical scholarship, methods and bibliography, textual history and criticism. GrC
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq # and Δ)
Guided individual reading or study.
- 5980. DIRECTED INSTRUCTION.** (Cr ar; prereq # and Δ)
- 5990. DIRECTED RESEARCH.** (Cr ar)

MODERN GREEK (MdGk)

- 1101-1102-1103. BEGINNING MODERN GREEK.** (5 cr per qtr)
Speaking and reading demotic Greek. Pattern-practice drill, simple readings, some grammar. GrA
- 1104-1105. INTERMEDIATE MODERN GREEK.** (4 cr per qtr) GrD
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq # and Δ)
Guided individual reading or study.
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq # and Δ)
Guided individual reading or study.
- 5980. DIRECTED INSTRUCTION.** (Cr ar; prereq # and Δ)
- 5990. DIRECTED RESEARCH.** (Cr ar)

LATIN (Lat)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1104 or 1122 or 3052 or 4 yrs high school Latin or equiv (students with 2 yrs high school Latin should enter 1003; with 3 yrs, 1104; with 4 yrs or advanced placement, any 3xxx course above 3052)

Major Requirements—25 cr in Latin courses above 3052

15 additional 3xxx-5xxx cr in classics, or classical philology, or related courses in other departments, in Latin courses above 3052, or in a combination of these

- 1003f. INTERMEDIATE LATIN.** (5 cr; prereq 2 yrs high school Latin or equiv or Δ)
Refresher and continuation course. Caesar, Cicero, Virgil, and others. GrA
- 1101f-1102w†. BEGINNING LATIN.** (5 cr per qtr; prereq 1101 or equiv for 1102)
Mastery of structure of Latin, for attaining reading knowledge; oral reading and composition. GrA
- 1103s. SELECTIONS FROM LATIN LITERATURE.** (5 cr; prereq 1102 or equiv)
Ancient authors in context of graded reading materials. GrA
- 1104f. LATIN READINGS: CAESAR.** (5 cr; prereq 1103 or 3 yrs high school Latin or 1003 or Δ)
Gallic Wars, Book I. GrD
- 1111f-1122w†. HONORS COURSE: BEGINNING LATIN.** (5 cr per qtr; prereq regis in Honors program or high ability as indicated by college entrance records) GrA
- 3001. BEGINNING LATIN: INTENSIVE ACCELERATED.** (10 cr, §1101-1102-1103, §3051-3052)
Ten class hours weekly, plus individual and small group sessions. Grammar, syntax, composition, and reading. Winter quarter students graded A continue in 3106s; below A, 1103s. Spring quarter students graded A continue in 1104f; below A, 1003f. GrA

- 3011. PROSE COMPOSITION.** (5 cr; prereq # or Δ) GrA
- 3051f-3052w†. ACCELERATED BEGINNING LATIN.** (5 cr per qtr, §1101-1102, §1103, §1104)
Rapid mastery of Latin. Previous experience in another foreign language desirable. GrA
- 3104su. LATIN READINGS.** (5 cr; prereq 1104 or equiv or #) GrD
- 3105w. LATIN READINGS: CATULLUS AND OVID.** (5 cr; prereq 1003 or 1104 or Δ)
Catullus, the Lesbia cycle. Ovid, selections from the *Metamorphoses*. GrD
- 3106s. LATIN READINGS: VIRGIL.** (5 cr; prereq 1122 or 3052 or 3105 or Δ)
Aeneid I, II. GrD
- 3461, 3462, 3463, 3464, 3465, 3466, 3467; 3471, 3472, 3473, 3474, 3475, 3476, 3477.**
ADVANCED UNDERGRADUATE LATIN. (5 cr per qtr; prereq 3106 or 4 yrs high school Latin or Δ)
A 2-year cycle, with one of the courses offered each quarter. 1976-77: 3461f, Cicero or 3462f, Livy. 3463w, Comedy, or 3464w, Catullus, or 3465w, Medieval Latin. 3466s, Petronius, or 3467s, Horace. 1977-78: 3471f, Virgil, or 3472f, Elegy. 3473w, Tacitus, or 3474w, Seneca, or 3477w, Quintillian. 3475s, Satire, or 3476s, Lucretius. GrD
- 3960. HONORS TUTORIAL.** (5 cr per qtr; prereq Δ)
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq # and Δ)
Guided individual reading or study.
- 5012. PROSE COMPOSITION.** (2 cr; prereq 3106 or Δ) GrA
- 5038. ORAL INTERPRETATION OF CLASSICAL LATIN LITERATURE.** (5 cr; prereq 2 yrs Latin or equiv and Th 3801 or 3321 or #)
Phonetics, prosody, and oral performance of texts in classical Latin. GrD
- 5235. MEDIEVAL LATIN.** (3 cr; prereq #)
Literature from 5th to 12th centuries; Carolingian and 12th-century Renaissance. GrD
- 5264-5265-5266. GRADUATE SURVEY.** (4 cr per qtr; prereq ¶15012)
5264: Literature of the Republic. 5265: Literature of the Augustan Age. 5266: Literature of the Empire. GrD
- 5371, 5372, 5373, 5374, 5375, 5376, 5377, 5378, 5379. LATIN LITERATURE.** (3 cr per qtr)
Authors read vary from term to term; different authors in each course. 5371: History. 5372: Epistles and essays. 5373: Oratory. 5374: Epic and pastoral poetry. 5375: Lyric and elegiac poetry. 5376: Drama. 5377: Satire. 5378: Law. 5379: Religious texts. GrD
- 5621. LATIN PALEOGRAPHY.** (3 cr; prereq 3 3xxx-5xxx Latin cr or #)
Analysis of various hands used in manuscripts of Latin authors, with attention to date and provenance; transmission of ancient Latin literature. GrD
- 5710. STRUCTURE OF LATIN.** (3 cr per qtr [6 cr max]; prereq sr or grad student, 10 3xxx-5xxx cr or equiv, #) Erickson
Review of basic structures; application of current linguistic theories to Latin texts; special problems in reading Latin. GrA
- 5794. PROSEMINAR: INTRODUCTION TO CLASSICAL STUDIES.** (3 cr, §Grk 5794; required of all new grad students; prereq grad major or #)
Research in classical scholarship, methods and bibliography, textual history and criticism. GrC
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq # and Δ)
Guided individual reading or study.
- 5980. DIRECTED INSTRUCTION.** (Cr ar; prereq # and Δ)
- 5990. DIRECTED RESEARCH.** (Cr ar)

GREEK-LATIN

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Grk 1104 or 1122 or 3052 or 3 yrs high school Greek or 15 cr of 1110 and Δ or equiv

Lat 1104 or 1122 or 3052 or 4 yrs high school Latin or equiv (students with 2 yrs high school Latin should enter 1003; with 3 yrs, 1104; with 4 yrs or advanced placement, any 3xxx course above 3052)

Course Descriptions—Major Sequences

Major Requirements—25 cr in Greek courses above 3052

25 cr in Latin courses above 3052

30 additional 3xxx-5xxx cr in classics, or classical philology, or related courses in other departments, in Greek and/or Latin courses above 3052, or in a combination of these

CLASSICAL PHILOLOGY (CIPh)

These courses in historical aspects of classical linguistics, for which knowledge of Greek or Latin is required, may be applied to Greek, Latin, or Greek-Latin major programs.

3773. HELLENISTIC GREEK. (4 cr; prereq *)

Koiné language in New Testament, the papyri, other documents from 3rd century B.C. to 2nd century A.D. General principles of language study. GrA

5715. INTRODUCTION TO CLASSICAL PHILOLOGY. (2 cr; prereq *)

Sounds and forms of the classical languages; principles of linguistic paleontology. Essential to all other work in classical philology. GrA

5716. HISTORY OF GREEK. (4 cr; prereq 5715 or equiv and 2 yrs Greek)

Semantic and formal development of Greek, from Mycenaean to Romaic. GrA

5717. HISTORY OF LATIN. (4 cr; prereq 5715 or equiv or * and 2 yrs Latin)

Old Latin philological texts; Latin etymology, word formation, loanwords, historical syntax. GrA

5718. GREEK DIALECTS. (4 cr; prereq 5715 and 2 yrs Greek or *)

Epigraphic and literary monuments illustrating ancient Hellenic dialectology. The age-and-area hypotheses; proto-Greek. GrA

5733. VULGAR LATIN. (4 cr; recommended for all students of language; prereq *)

Development of Romance languages; documents that reveal the lexical, phonological, and syntactic systems of colloquial Latin. GrA

5735. OSCAN-UMBRIAN. (4 cr; prereq 5715 and 5717 or *)

Epigraphic and onomastic techniques for the interpretation of Indo-European languages of early Italy. GrA

5970. DIRECTED STUDIES. (1-5 cr per qtr; prereq * and Δ)

Guided individual reading or study.

CLASSICS (Clas)

No knowledge of Greek or Latin is required for these courses, which may be of interest to students of literature, archaeology, and culture. They may be applied to majors in classical civilization, the interdepartmental program described in preceding pages. They may also be applied to majors in Greek, Latin, or Greek-Latin.

Classical Humanities

1001, 1002, 1003. INTRODUCTION TO CLASSICAL CIVILIZATION: GREECE. (4 cr per qtr)

1001: World of Homer: Heroic Tradition and Intellectual Awakening—transition in values and institutions from the monolithic society represented in Homeric epic to the relatively open society of the archaic age. Cultural dynamism and contact with the Near East. **1002:** Age of Pericles: City-State and Intellectual Maturity—"Golden Age" and the ideal of self-realization in service to the polis. The explosion of creativity in literature, philosophy, art, Ideological struggle between democracy and authoritarianism. Failure of the city-state. **1003:** Age of Alexander: Cosmopolitanism and Cultural Fusion—Hellenistic "big government" and rise of individualism. Spread of Greek culture to the Near East. New emphases in literature, philosophy, art, and especially in science and religion. GrC

1004, 1005, 1006. INTRODUCTUON TO CLASSICAL CIVILIZATION: ROME. (4 cr per qtr)

1004: World of Cato—changing values and institutions of early Roman agrarian society; rise of republic. Greek and Etruscan influences; clash with Carthage. **1005:** World of Augustus—from anarchy to Pax Romana; consequences for Roman world. **1006:** World of Constantine—consolidation and expansion of empire. World of Roman law and rise of Christianity. GrC

- 1011, 1022, 1033, 1044, 1055, 1066. HONORS COURSES: INTRODUCTION TO CLASSICAL CIVILIZATION.** (5 cr per qtr; prereq regis in Honors program or § or Δ)
Students attend lectures in 1001, 1002, 1003, 1004, 1005, 1006 and meet with lecturer one additional period each week. GrC
- 1012. THE LAW OF THE ANCIENT ROMANS.** (4 cr, §5013)
Roman legal science and the history of Roman jurisprudence; fundamentals of the Roman legal system; private and criminal courts. GrC
- 1015. INTRODUCTION TO THE LANGUAGES AND THOUGHT OF GREECE AND ROME.** (4 cr; for nonlanguage students)
Relationship of the languages of Greece and Rome to the literature, philosophy, law, science, government, and physical environment. GrA
- 1019. MAGIC, WITCHCRAFT, AND THE OCCULT IN GREECE AND ROME.** (4 cr) Erickson
Magic and witchcraft in classical literature and mythology; the practice of magic as observed from papyri, epigraphical and literary evidence; beliefs and practices concerning prophecy and the interpretation of dreams. The changing role of witchcraft and divine possession from early to later antiquity; the relation of these phenomena to changes in economic and social conditions. GrC
- 1042. GREEK AND ROMAN MYTHOLOGY.** (3 cr; prereq soph)
Classical myths; stories of gods, demigods, and heroes that are a component of European cultural heritage; artistic, religious, psychological, and anthropological implications. GrC
- 1048. TECHNICAL TERMS OF SCIENCE, MEDICINE, AND HUMANITIES.** (3 cr, §3048)
Presentation in English contexts of Greek and Latin prefixes, suffixes, and roots basic in modern technical vocabularies. GrA
- 1061. INTRODUCTION TO BYZANTINE CIVILIZATION.** (4 cr, §5061)
Greco-Roman backgrounds of Byzantine civilization. The culture of the Eastern Empire through study of history, religion, education, art, literature. GrC
- 3007. THE WORLD OF GREECE.** (4 cr, §5007)
Greek civilization from the world of Homer to the age of Alexander. The Greek view of life as seen in art, history, literature, and philosophy. The golden age of Greece in the 5th Century B.C.; expansion of the Greek spirit under Alexander. GrC
- 3008. THE WORLD OF ROME.** (4 cr, §5008)
Roman civilization from its origins to the reign of Constantine. The Roman way of life as seen in art, history, literature, and philosophy. The Etruscans and the golden age of Rome under Augustus. GrC
- 3048. TECHNICAL TERMS OF SCIENCE, MEDICINE, AND THE HUMANITIES.** (3 cr, §1048; prereq jr)
For description, see 1048. GrA
- 3070. RELIGION IN ANTIQUITY: ADVANCED TEXTUAL STUDIES.** (4 cr per qtr, §5070, §Grk 5376 or §Lat 5379, depending on topic; prereq 3071 or 3072 or 3073 or any religious studies course or §) Kraabel
Religious texts central to early Christianity or another ancient religion, in the context of the Greco-Roman world. Theology and present interpretations of the texts. Their influence in later religion and culture. Topics announced in *Class Schedule*. GrC
- 3071, 3072, 3073. RELIGION IN ANTIQUITY.** (4 cr per qtr; prereq jr) Kraabel
3071 (§5071): Greek, Hellenistic—Greek religion of the Archaic, Classical, and Hellenistic periods. Eclipse of city-state and "failure of nerve." Mystery religions and impact of Eastern cults. Ancient myths and need for allegory. Ruler worship. Gnosticism. Judaism in Greek world; Dead Sea scrolls. 3072 (§5072): The New Testament—first-century Israel under Roman rule. Jesus of Nazareth. Earliest Christian communities. Jewish Christianity. Mission to gentiles. Paul the apostle. Beginnings of New Testament. 3073 (§5073): Roman, Early Christian—the Etruscans. Republican religion. The appeal of non-Roman cults. Ruler worship. Christians in Asia Minor, Egypt, and the West. Popular piety, Christian and non-Christian. Rabbinic Judaism. Varieties of Christianity in 2nd and 3rd centuries. Influence of Greco-Roman culture upon emerging Church. Constantine and Julian. GrC
- 3081. CLASSICAL EPIC IN TRANSLATION.** (4 cr, §5081; prereq 8 cr in English literature beyond Engl 1002, or in foreign literature, or Δ)
Homer's *Iliad* and *Odyssey*, Virgil's *Aeneid*; cultural context of epic, the heroic character, epic formulas, and poetic techniques. GrD
- 3082. GREEK TRAGEDY IN TRANSLATION (AESCHYLUS, SOPHOCLES, EURIPIDES).** (4 cr, §5082; prereq 8 cr in English literature beyond Engl 1002, or in foreign literature, or Δ)
Origin of European drama as distinct literary form; characteristics of Greek tragedy; ancient theatres and theatrical conventions. Selected tragedies. Problems related to cultural patterns of the time. GrD

Course Descriptions—Major Sequences

- 3083. ARISTOPHANES AND ROMAN DRAMA IN TRANSLATION (ARISTOPHANES, MENANDER, PLAUTUS, TERENCE, SENECA).** (4 cr, §5083; prereq 8 cr in English literature beyond Engl 1002, or in foreign literature, or Δ)
Greek and Roman comic theatre; several comedies discussed. Roman tragic drama as exemplified by tragedies of Seneca. GrD
- 3145. CLASSICAL MYTHOLOGY: METHODOLOGY, INTERPRETATION, AND TRADITION.** (4 cr, §5145; prereq 1042 or §)
Methodologies for the interpretation of myth such as those of Müller, Jung, and Levi-Strauss, examined on the basis of classical mythology; successive reinterpretations and applications of selected myths in literature, art, music, and modern sociological disciplines. GrC
- 3181. HONORS COURSE: CLASSICAL EPIC IN TRANSLATION.** (5 cr; prereq regis in Honors program or § or Δ)
Students attend lectures in 3081 and meet with lecturer one additional period each week. GrD
- 3219. CLASSICAL PERSPECTIVES ON ORGANIZATION.** (4 cr; prereq jr or §)
Literary sources and historical phenomena indicating ancient recognition of problems in social organization, considered in reference to modern organization theory and social value systems. GrC
- 3282. HONORS COURSE: GREEK TRAGEDY IN TRANSLATION (AESCHYLUS, SOPHOCLES, EURIPIDES).** (5 cr; prereq regis in Honors program or § or Δ)
Students attend lectures in 3082 and meet with lecturer one additional period each week. GrD
- 3383. HONORS COURSE: ARISTOPHANES AND ROMAN DRAMA IN TRANSLATION (ARISTOPHANES, MENANDER, PLAUTUS, TERENCE, SENECA).** (5 cr; prereq regis in Honors program or § or Δ)
Students attend lectures in 3083 and meet with lecturer one additional period each week. GrD
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq § and Δ)
Guided individual reading or study.
- 5002. ANCIENT SATIRE.** (4 cr; prereq two courses in English literature beyond Engl 1002, or in foreign literature, or Δ)
Ancient satire from Homer to Juvenal. Translations of Homer, Aesop, Archilochus, Aristophanes, and Lucian. The form of Roman satire; Lucilius, Horace, Persius, Petronius, Martial, and Juvenal. Survival of Roman satire in English literature. GrD
- 5003. ANCIENT NOVEL AND ROMANCE.** (4 cr; prereq two courses in English literature beyond Engl 1002, or in foreign literature, or Δ)
Development of the ancient novel. Translations of ancient Greek novelists and of Apuleius and Petronius. GrD
- 5004. EROTICISM AND FAMILY LIFE IN THE GRECO-ROMAN WORLD.** (4 cr) Erickson
Greek and Roman family life in the shaping of personality; diachronic change in modes of erotic expression; narcissism and homosexuality; status and roles of women; evolving views of sexual morality in ancient world compared to present trends. Examples from art and literature. GrC
- 5005. MADNESS AND DEVIANT BEHAVIOR IN ANCIENT GREECE AND ROME.** (4 cr; prereq 2 cr in classics) Erickson
Definitions of madness in Greece and Rome, theories of its etiology; assessment of predisposing factors in Greece and Rome; madness in mythology, legend, and history; cross-cultural comparison with contemporary United States. GrC
- 5006. GREAT MEN IN ANCIENT BIOGRAPHY.** (4 cr; prereq 5004 or 5005 or Δ)
The lives of Alexander, Caesar, Cicero. Their accomplishments, factors that shaped their characters, criteria for "greatness," the social and political milieu in which they functioned, the hero myth and history; psychohistorical approach to biography. GrC
- 5007su. THE WORLD OF GREECE.** (4 cr, §3007)
Meets with 3007, but requires additional work for advanced undergraduate and graduate credit. GrC
- 5008su. THE WORLD OF ROME.** (4 cr, §3008)
Meets with 3008, but requires additional work for advanced undergraduate and graduate credit. GrC
- 5013. ROMAN LAW AND SOCIETY.** (4 cr; prereq § or Δ)
Roman law as a social institution: basic concepts of persons, property, obligations in historical and social perspective. GrC
- 5014. CRIME AND JUSTICE IN THE ROMAN WORLD.** (4 cr; prereq 5013 or Hist 1053 or 3053 or § or Δ)
Public and private delicts and their remedies in the Roman legal system, especially in the later Roman Republic; civil and criminal courts; selected cases. GrC

- 5017, 5018. WOMEN IN CLASSICAL ANTIQUITY.** (4 cr per qtr)
 5017: Women in the Greek world. 5018: Women in the Roman world. Their role in the classical world, in literature, and in the social structure. Women's legal and economic position. GrC
- 5020. PROBLEMS IN POST-ARISTOTELIAN PHILOSOPHY.** (4 cr per qtr, \$Phil 5020; prereq 5085 or 5086 or Phil 3001 or 3002 or 3900 or 5008 or 5012 or *)
 Problems in philosophy after Aristotle and before Augustine. Topics may involve the Stoics, Epicureans, Cynics, Sceptics, neo-Pythagoreans, middle and late Platonists. GrC
- 5061. INTRODUCTION TO BYZANTINE CIVILIZATION.** (4 cr, \$1061)
 Greco-Roman backgrounds of Byzantine civilization. The culture of the Eastern Empire—history, religion, education, art, literature in translation. Additional work for graduate credit. GrC
- 5070. RELIGION IN ANTIQUITY: ADVANCED TEXTUAL STUDIES.** (4 cr per qtr, \$3070, \$Grk 5376 or \$Lat 5379, depending on topic; prereq 3071 or 5071 or 3072 or 5072 or 3073 or 5073 or any religious studies course or *) Kraabel
 Meets with 3070. Additional work for graduate credit. GrC
- 5071. RELIGION IN ANTIQUITY: GREEK, HELLENISTIC.** (4 cr, \$3071; prereq *) Kraabel
 Meets with 3071. Additional work for graduate credit. GrC
- 5072. RELIGION IN ANTIQUITY: THE NEW TESTAMENT.** (4 cr, \$3072; prereq *) Kraabel
 Meets with 3072. Additional work for graduate credit. GrC
- 5073. RELIGION IN ANTIQUITY: ROMAN, EARLY CHRISTIAN.** (4 cr, \$3073; prereq *)
 Kraabel
 Meets with 3073. Additional work for graduate credit. GrC
- 5081. CLASSICAL EPIC IN TRANSLATION.** (4 cr, \$3081)
 Meets with 3081. Advanced independent work required. GrD
- 5082. GREEK TRAGEDY IN TRANSLATION (AESCHYLUS, SOPHOCLES, EURIPIDES).** (4 cr, \$3082)
 Meets with 3082. Additional independent work required. GrD
- 5083. ARISTOPHANES AND ROMAN DRAMA IN TRANSLATION (ARISTOPHANES, MENANDER, PLAUTUS, TERENCE, SENECA).** (4 cr, \$3083)
 Meets with 3083. Advanced independent work required. GrD
- 5085. GREEK PHILOSOPHY: THE PRE-SOCRATICS TO PLATO.** (4 cr) Hershbell
 Fragments of the pre-Socratics and Sophists and selected dialogues of Plato. GrC
- 5086. GREEK PHILOSOPHY: ARISTOTLE AND POST-ARISTOTELIAN THOUGHT.** (4 cr; prereq Δ) Hershbell
 Excerpts from the writings of Aristotle; his metaphysical and ethical writings. Stoic and Sceptic writers; Epicurus; Diogenes Laertius; Sextus Empiricus; Plutarch's polemical works against the Stoics. GrC
- 5115. CLASSICAL HUMANITIES PROSEMINAR.** (4 cr; prereq Δ)
 Integrates various disciplines within field of classics. Several faculty members present special studies. Synoptic view of classical culture. GrD
- 5145. CLASSICAL MYTHOLOGY: METHODOLOGY, INTERPRETATION, AND TRADITION.** (4 cr, \$3145; prereq 1042 or *)
 Same classwork as 3145; independent reading and research assignments in consultation with the instructor. GrC
- 5400. SUPERVISED DIRECTION OF ORAL INTERPRETATION PROJECTS.** (1-3 cr [6 cr max for BA, 12 cr for MA, 18 cr for PhD]; prereq *)
 Projects such as group performances of Greek and Roman poetry. Classics and theatre backgrounds required. GrD
- Spch 5611. CLASSICAL RHETORIC.** (4 cr; prereq Spch 1101 or 1101H) Scott
 Greek and Roman theories of speechmaking; historical and philosophic context and influence on education. GrA
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq * and Δ)
 Guided individual reading or study.
- 5980. DIRECTED INSTRUCTION.** (Cr ar; prereq * and Δ)
- 5990. DIRECTED RESEARCH.** (Cr ar)

Course Descriptions—Major Sequences

Archaeology

- 1043. INTRODUCTION TO GREEK AND ROMAN ARCHAEOLOGY.** (4 cr)
Archaeological evidence about daily life in prehistoric and classical times; food producing; town building and craft industries of Greece and Italy. GrC
- 3152. GREEK ART.** (5 cr, §ArH 3152; offered alt yrs)
The classical style of ancient Greece; origins, characteristics, importance to later culture. GrD
- 3162. ROMAN ART AND ARCHAEOLOGY.** (5 cr, §ArH 3162; prereq 3152 or ArtH 3008 or 3152)
What is Roman in Roman art and material culture, how it came into being; the degree of change or continuity, of "progress" or "decay" in the later Empire. GrD
- 5089. INTRODUCTION TO BIBLICAL ARCHAEOLOGY.** (4 cr) Kraabel
Archaeological data relevant to the Jewish Scriptures and the New Testament; major sites in the "Holy Land" and in other areas of the Mediterranean and the Near East. The evidence of pottery, inscriptions, manuscripts, and coins. Excavation methods. Archaeology as a tool for study of ancient religions. Requires additional work for graduate credit. GrC
- 5101. INTRODUCTION TO PREHISTORIC GREEK ARCHAEOLOGY.** (4 cr; prereq jr or §)
McDonald
Aims and methods of modern field archaeology; the record of human habitation in the Aegean area from earliest times to the end of the Bronze Age; concentration on the Mycenaean period. Archaeological evidence as the basis for historical reconstruction. GrA
- 5102. GREEK SCULPTURE.** (4 cr, §ArH 5102; prereq jr or §) Coulson
Styles and techniques of Greek sculpture from the Archaic period to the end of the 4th century B.C. Sculptors and styles of Greece, Sicily and southern Italy, Asia Minor. GrD
- 5103. HELLENISTIC ART AND ARCHAEOLOGY.** (4 cr, §ArH 5103; prereq jr or §) Coulson
Greek architecture, sculpture, ceramics, painting, and minor arts from the beginning of the 4th century B.C. to the end of the Hellenistic period. City planning, public buildings; topography of such sites as Athens, Olynthos, Corinth, Priene, Pergamon. GrD
- 5104. ROMAN ARCHITECTURE.** (5 cr, §ArH 5104; prereq 3162 or ArtH 1008 or 3008 or 3162)
McNally
Types and techniques of buildings in Rome and the Empire from the 5th century B.C. to the 4th century A.D. Major archaeological sites. GrD
- 5105. ROMAN PAINTING AND MOSAICS.** (5 cr, §ArH 5105; prereq 3162 or ArtH 1008 or 3008 or 3162) McNally
Roman painting and mosaics. Sites such as Pompeii and Antioch. GrD
- 5106. GREEK PAINTING.** (5 cr, §ArH 5106; prereq 5102 or 5103; offered when feasible) Cooper, McNally
Methods of research and analysis in classical art as applied to study of vases; investigation of original objects and of sources. GrD
- 5107. ROMAN SCULPTURE.** (4 cr, §ArH 5107; prereq 3162 or ArtH 1008 or 3008 or 3162)
Sculpture from Rome and its provinces from the 1st century B.C. to the 4th century A.D.; the role of sculpture in Roman politics and religion. GrA,D
- 5108. GREEK ARCHITECTURE.** (4 cr, §ArH 5108; prereq 3152 or ArtH 1008 or 3008 or 3152)
Cooper, McNally
Archaic and classical examples of religious and secular architecture. Their setting in major archaeological sites. GrD
- 5109. INTRODUCTION TO ETRUSCAN ART AND ARCHITECTURE.** (4 cr, §ArH 5109; prereq jr or §) Coulson
Architecture, sculpture, painting, and minor arts of the Etruscans. Political, religious, and social settings. Methods of Etruscan archaeology. GrD
- 5110. PROSEMINAR: CLASSICAL ARCHAEOLOGY.** (4 cr per qtr; prereq §) GrC
- 5120. FIELD RESEARCH IN ARCHAEOLOGY.** (3-6 cr per qtr; prereq §) Kraabel, McDonald
Field excavation, survey, and research in archaeological sites in Greece, Turkey, Italy, or the Mediterranean area. Techniques of excavation and exploration; interpretation of archaeological materials. GrA

Communication (Comm)

Staff—Chairman, Daniel V. Bryan, 116A Klæber Court

Professors: Bryan, Jensen

Associate Professor: Ward

Courses in written and oral communication, theoretical and practical, are designed to prepare students to meet communicative demands in contemporary settings. Instruction is individualized by conferences, tutorials, and small group sessions.

1001-1002f,w,s or 1001-1003f,w,s. COMMUNICATION. (4 cr per qtr, §Comp 1001-1002, §1006, §1007, §1008; prereq assignment to English Placement Category 2, 3, or 5 for 1001; meets the English composition requirement)

1001: Communication, language, and nonverbal means of communicating; clarity and appropriateness in expository discourse; writing and speaking under direction and criticism. **1002:** Deliberation, reasoning, nonlogical appeals, and ethical concerns in problem solving and persuasive discourse; writing and speaking under direction and criticism. **1003:** Mass communication in rhetorical perspective: communicators, messages, media, effects, and social implications; writing and speaking under direction and criticism. GrA (if not used to meet English composition requirement)

1001HF-1002Hw. HONORS COURSE: COMMUNICATION. (4 cr per qtr, §Comp 1001-1002, §1006, §1007, §1008; prereq assignment to English Placement Category 1, regis in Honors Division or Δ for 1001H...1001H or 1001 and regis in Honors Division or Δ for 1002H) GrA (if not used to meet English composition requirement)

3980f,w,s. DIRECTED INSTRUCTION. (1-5 cr per qtr; prereq 1001 and 1002 or 1003, and §) Students work with instructors in planning and teaching freshman communication courses.

Communication Disorders (CDis)

Staff—Chairman, Richard R. Martin, 115 Shevlin Hall; **Director of Undergraduate Studies,** Richard P. McDermott, 115 Shevlin Hall

Professors: Chaiklin, Darley, Lassman, Martin, McDermott, Siegel, Speaks, Starr, Ward

Associate Professors: Brookshire, Moller

Assistant Professors: Broen, T. Doyle, Friedrich, Haroldson, Hoel, Nelson

Instructors: Ambroe, S. Doyle, Marth, Oxman

The curriculum and activities of the Department of Communication Disorders focus on the study of normal and abnormal hearing, speech, and language, and the application of knowledge to the identification, prevention, evaluation, and clinical management of hearing, speech, and language problems.

The undergraduate major in speech and hearing science offers an opportunity for broad study of the processes of normal and disordered hearing, language, speech, and voice. It serves as preprofessional preparation for postgraduate education to qualify students for careers as speech pathologists, audiologists, or speech and hearing scientists. The B.S. program does not provide specialized professional skills, but the M.A. programs in speech pathology and audiology provide the educational background required to qualify for the Certificate of Clinical Competence issued by the American Speech and Hearing Association. Students contemplating graduate study should consult the director of graduate studies early in their senior year.

The department's B.A. degree is available only to students who entered as freshmen before fall 1974.

B.S. MAJOR SEQUENCE

Required Preparatory Courses—Math 1111; Ling 3001 or 5001; Psy 1001, 1004-1005; Phys 1014-1024 or 1031-1032 or Biol 1011 with Phys 1014 or 1031

Major Requirements—5301, 5302, 5303, 5304, 5512; CPsy 1301; Psy 3011, 3031; PsyF 5110

Course Descriptions—Major Sequences

Four courses from 3101, 5306, 5502, 5504, 5506, 5507, 5508, 5513, 5701, 5702, 5703, 5704

One of the following groups:

I: at least two courses from CPsy 5341, 5343; Psy 3051, 3124, 5011

II: at least two courses from Ling 5006, 5201, 5202, 5302; CPsy 5345; Psy 5054; SpEd 5100

III: at least two courses from Math 1008, 1142, 1211, 1221, 1231

IV: Psy 5017, 5018, 5019

V: SpEd 5120 or CPsy 5315; SpEd 5123

Recommended elective courses are Anth 1002; Chem 1004-1005; Econ 1001-1002 or 1004-1005; GCB 3002, 3022; Ling 3301; Soc 1001

General Education—5301, 5302, 5303, 5304**, 5306**, 5512, and 5513, which address the processes of normal hearing, speech, language, and voice, may be of interest to students wishing to gain understanding of the multidisciplinary foundations of human communication. Other courses, such as 3101, a survey of problems of human communication, and 5502, 5504**, 5506**, 5507, 5508, 5701**, 5703**, and 5704**, dealing with specific problems of human communication, may be of general interest to students in psychology, child psychology, speech-communication, education, and medical-dental fields.

3100f,w,s,su. CLINICAL AND RESEARCH OBSERVATION. (1 cr per qtr; S-N only; prereq 2nd-qr jrs and srs majoring in communication disorders and §)

Supervised observation of clinical procedures such as evaluation and treatment of persons with communication disorders or of research relating to normal and disordered communication.

3101f,s,su. INTRODUCTION TO SPEECH PATHOLOGY AND AUDIOLOGY. (4 cr) McDermott, Haroldson

Concepts basic to understanding normal and abnormal speech and hearing functions. Selected communication problems. Strategies and systems of delivery of clinical services. GrA

5202su. SYMPOSIUM IN SPEECH SCIENCE, PATHOLOGY, AND AUDIOLOGY. (4 cr)

5301f. INTRODUCTION TO ACOUSTICS. (5 cr) Speaks

Elements of acoustics necessary to understand quantitative aspects of speech pathology and audiology. Nature of sound, sound transmission, units of measurement, acoustic characteristics of speech, and elementary electroacoustic systems. GrB

5302f. ANATOMY AND PHYSIOLOGY OF THE SPEECH AND HEARING MECHANISMS. (4 cr) Lassman, McDermott

Gross anatomy, physiology, and function of structures related to phonation, articulation, and audition.

5303f,w. PHONETICS LABORATORY. (2 cr) Broen

Phonetic analysis of speech, the IPA classification system and articulatory correlates of English phonemes. Laboratory transcription of isolated sounds, words, and connected speech. GrA

5304w,s. SPEECH AND HEARING SCIENCE. (5 cr; prereq 5301, 5302, 5303, or §) Speaks, Ward

Physiologic, acoustic, and perceptual parameters of speech and fundamental concepts in normal audition.

5306s. HEARING SCIENCE. (4 cr; prereq 5301 or Psy 3031 or §) Ward

Fundamental concepts in normal audition. Psychoacoustic methods; sensitivity and acuity; loudness, pitch, timbre; distortion, aural harmonics; masking, adaptation; auditory reflex, binaural phenomena, localization. Laboratory.

5502s. STUTTERING. (4 cr) Martin

Description, nature, and treatment of stuttering in children and adults. Involvement at various levels. Participation in therapeutic and research activities.

5504w. ARTICULATION DISORDERS. (4 cr; prereq 5301, 5302) McDermott

Impaired articulation performance and associated factors. Principles of diagnosis and clinical management. Observation of clinical activities.

**Prerequisites required

- 5506s. APHASIA.** (4 cr; prereq 5302 or §) Brookshire
Etiology, diagnosis, evaluation, and treatment of brain-damaged, communicatively-impaired adults. Clinical case materials; observation of evaluation and treatment of adult aphasic individuals.
- 5507f. CLEFT PALATE, ORAL-FACIAL ANOMALIES AND SPEECH.** (4 cr) Starr, Moller
Relationships between oral-facial structures and speech. Speech problems associated with dental and palatal anomalies and their clinical management. Observations of clinical activities.
- 5508s. VOICE DISORDERS.** (4 cr) Starr
Physical and physiological bases of normal voice production. Voice disorders (pitch, loudness, quality) and their symptomatology, etiology, and clinical management. Laryngectomy and other organic disorders.
- 5512f. SPEECH DEVELOPMENT AND RETARDATION.** (4 cr) Siegel
Theory and experimental research dealing with speech development as related to delayed or retarded speech.
- 5513w. SPEECH DELAY: PSYCHOLINGUISTIC APPROACHES.** (4 cr; 3 class meetings per wk plus off-campus assignments) Siegel
Basic concepts in psycholinguistics applied to delayed language.
- 5514s. SPEECH DELAY: DEVELOPMENT AND ASSESSMENT.** (4 cr; prereq 5513 or §; 3 class meetings per wk plus off-campus assignments) Broen
Continued application of psycholinguistics to delayed speech and language, language assessment.
- 5701f,s. HEARING DISORDERS.** (4 cr; prereq 5301, 5302) Chaiklin, Lassman
Basic orientation to audiology with emphasis on hearing disorders; medical and surgical management, major audiometric procedures, with laboratory demonstration; audiologic and educational approaches to different types and degrees of hearing defects; psychological effects of hearing impairment.
- 5702f,w. HEARING MEASUREMENT.** (4 cr; prereq 5301, 5302, 5701; 4 lab hrs per wk plus lect) Chaiklin
Pure-tone audiometry, masking; bone-conduction theory; calibration; audiometer function; screening audiometry; research bases of basic procedures.
- 5703w. COMMUNICATION PROBLEMS OF THE HEARING IMPAIRED.** (4 cr; prereq 5701 or §) Marth
Effects of impaired hearing on speech and language development. Development of speech and language for hearing-impaired individuals through speech, speechreading, auditory training, and other methods and philosophies.
- 5704s,su. NOISE AND MAN.** (4 cr; prereq 5301 or §) Ward
Temporary and permanent effects of steady, intermittent, and impulse noise on hearing and health. Annoyance and community noise. Noise measurement, reduction, and control; ear defenders and their limitations. Hearing conservation programs; preemployment testing and monitoring audiometry.
- 5900. TOPICS IN COMMUNICATION DISORDERS.** (4 cr per qtr)
- 5970f,w,s,su. DIRECTED STUDIES.** (Cr ar; prereq §) Staff
Guided individual reading or study.

Comparative Literature (CLit)

Staff—*Chairman*, Peter Firchow, 210K Lind Hall

Professors: Anderson, Chejne, Firchow (on leave spring 1977), Hurrell, Kwiat, Liu, Mather, Renaud, Savage, Weiss

Associate Professors: Bauer, Duroche, Schneider, Sousa

Assistant Professors: Fisher, Mishler, Spadaccini

Comparative literature is the study of the history, theory, and criticism of various national literatures in their interrelations and in their relations to other disciplines. The program stresses the study of two or more literatures in their original languages and the development of critical perspectives that cut across individual linguistic and cultural boundaries.

Course Descriptions—Major Sequences

For a description of the graduate program in comparative literature, see the *Graduate School Bulletin*. The program does not offer an undergraduate major, but the courses listed below are available as electives for CLA students.

- 5111, 5112. 20TH-CENTURY WRITERS: ENGLISH AND CONTINENTAL.** (4 cr per qtr; prereq 6 cr of literature courses, exclusive of English composition, good reading knowledge of French or German) Firchow
Modern European writers of various nations and cultures (among them Huxley, Hesse, Camus). GrD
- 5311. FANTASY LITERATURE.** (4 cr; prereq reading knowledge of French or German)
Fantasy literature (chiefly in the novel) from ca. 1800 to the present. Among authors considered: E. T. A. Hoffmann, Gautier, Gogol, Carroll, Chesterton, Morgenstern, Hesse, C. S. Lewis, Tolkien. GrD
- 5321. LITERATURE AND PHENOMENOLOGY.** (4 cr; prereq reading knowledge of French or German) Duroche
Literary texts from a variety of literatures and languages—a phenomenological perspective. Theoretical foundations of selected critics, notably Ingarden and Merleau-Ponty. GrD
- 5331, 5332. THE EUROPEAN NOVEL 1750-1950.** (4 cr per qtr; prereq reading knowledge of French or German)
The novel as an artistic genre; social and intellectual-historical factors. 5331: 1750-1850, England, France, and Germany; novels of Sterne, Rousseau, Goethe, Stendhal, Scott, Balzac, E. T. A. Hoffmann. 5332: 1850-1950, England, France, Germany, and Spain; works of Dickens, Flaubert, Dostoevsky, Tolstoy, Zola, Joyce, Hesse, Mann, Unamuno, Cela, Lawrence. GrD
- 5518. MYTH AND MYTHOGRAPHERS OF THE RENAISSANCE.** (5 cr; prereq reading knowledge of Italian or Latin)
Primary mythographical texts of the Renaissance. GrD
- 5588. ASPECTS OF CONTEMPORARY CRITICISM.** (5 cr, §Fren 5588; course taught in English; students who do not read French must have reading knowledge of Russian, German, Italian, or Spanish) Bauer
Criticism in contemporary France. GrD
- 5591. DADA AND SURREALISM.** (5 cr, §Fren 5591; prereq one 3xxx-5xxx literature course, reading knowledge of French, German, or Spanish) Bauer, visiting lecturers
Origins, activities, and literary accomplishments of Dada and Surrealism. GrD

COMPOSITION

See English.

Computer Science (CSci)

Institute of Technology

Staff—Head, J. Ben Rosen, 115 Lind Hall; **Associate Head and Director of Graduate Studies,** William D. Munro, 120 Lind Hall

Professors: Giloi, Munro, Rosen, Stein

Associate Professors: Brown, Franta, Frankowski, Ibarra, Leavitt

Assistant Professors: Boyd, Maly, Sahni, Schneider, Thompson, Weingart

Computer science is concerned with the study of the hardware and software (programming) aspects of high speed computing devices and the applications of these devices to a broad range of technological and business problems. Bachelor's degree education in computer science can be obtained in either CLA or IT (the IT program is described in the *Institute of Technology Bulletin*). Both curricula are designed to provide a broad base in the foundation subjects of computer science.

The CLA major option, with a choice of alternatives among required courses, is flexible enough that a student can plan a concentration either in computer science or

in interdisciplinary areas involving the applications of computers. The concentrations prepare students both for industrial and governmental positions involving computer usage and for graduate work.

Transfer Students—Students with calculus and computer programming backgrounds can enter the program as juniors if their earlier college work is substantially equivalent to that required by CLA during the first 2 years. Students who have not had the material covered in 3104, 3105, 3106, and 3107 will be required to make it up. These courses are usually offered in the summer. Transfer students should consult advisers in the department office.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Math 1211-1221-1231 or 1311-1321-1331; Math 3142, 3211 or 3511 and 3211 (for students with better than average mathematical ability) or 3511 and 3521 (for students with high mathematical ability); Stat 3091 or 5121 for students intending to take additional work in statistics; at least one additional 3xxx or 5xxx mathematics or statistics course (recommended: Math 5703 or, for students intending to take graduate work, 5701)

Major Requirements—3001, 3104, 3105-3106, 3107, 5102, 5104, 5107, 5121, 5301, 5400, 5501

At least two courses chosen from one of two areas: 5001, 5002, 5105, 5302, 5304, 5305; or 5103, 5106, 5200, 5201, 5401, 5499, 5502, 5503, 5504, 5122

All courses listed above must be taken A-N (except courses offered only S-N).

General Education—3101 and 1100, 1101 cover the FORTRAN computer language, programming applications, and techniques. 3001 deals with the impact of computers on society. Introduction to numeric and nonnumeric algorithms and languages for implementing them is covered in 3105, 3106. 3107 and 5101 are concerned with the organization and logical structure of computer systems and the representation of programs and data (machine and assembly language programming).

1100. INTRODUCTION TO FORTRAN PROGRAMMING I. (2 cr; prereq Math 1211 or 1311 or 1611 or ¶Math 1211 or ¶1311 or ¶1611 or ¶; informal lab)

Computer programming using FORTRAN; elementary-intermediate level applications. See 3101. GrA

1101. INTRODUCTION TO FORTRAN PROGRAMMING II. (2 cr [no cr for CSci majors]; prereq 1100 and Math 1211 or 1311 or 1611 or ¶; informal lab)

(Continuation of 1100) Extended applications, including numerical methods. GrA

3001. PERSPECTIVES ON COMPUTERS AND SOCIETY. (4 cr, §NSci 3201; prereq soph or ¶; informal lab)

The impact of computers on society. Partnership or confrontation. History of development. Potential for use. Computer utility. Privacy in a computer society. The future of computers. The ultimate machine. Computers in business, industry, art, music, the home. GrA

3002. CREATIVE AND ANALYTICAL APPLICATIONS OF COMPUTERS IN THE ARTS AND LITERATURE. (4 cr, §NSci 3202)

Arts and humanities ideas leading to computer use. Relevance to parent fields and conversion to programmable form. Examples from computer graphics, electronic music, author and period identification, dictionary building, parsing, language studies, novel writing. Experimental course, approved through spring 1977. GrD

3101. A FORTRAN INTRODUCTION TO COMPUTER PROGRAMMING. (4 cr; for non-CSci majors; prereq Math 1211 or 1311 or 1611 or ¶)

FORTRAN computer language with extensions; applications; programming techniques. Designed to bring students to advanced FORTRAN programming competence. Integral nonscheduled laboratory. GrA

3104. INTRODUCTION TO PROGRAMMING AND PROBLEM SOLVING. (4 cr; informal lab)

Problem-solving techniques, stepwise refinement, modularization. Algorithms, introduction to evaluation criteria, representation of algorithms, flow charts, metalanguages. The PASCAL language. Elements of programming style, program checking. Design of test data. Documentation. Comparison of PASCAL/FORTRAN. GrA

Course Descriptions—Major Sequences

- 3105. FUNDAMENTALS OF ALGORITHMS AND LANGUAGES I.** (4 cr; prereq 3104 or §; informal lab)
Informal and formal approaches to algorithms, their properties, analysis, and synthesis (formulation); correspondence between programming languages and types of problems to be solved. Numerical algorithms and their implementation in programming language. GrA
- 3106. FUNDAMENTALS OF ALGORITHMS AND LANGUAGES II.** (4 cr; prereq competence in a high-level language, algorithmic structures at the level of 3105 or §; informal lab)
Algorithms for nonnumeric data types. Examples from language processors, data structures, string processing. Suitable languages; SNOBOL. Textual analysis, recursive processes, their implication for languages and their implementations; artificial intelligence. GrA
- 3107. INTRODUCTION TO THE STRUCTURE AND PROGRAMMING OF COMPUTER SYSTEMS.** (4 cr, §5101; for CSci majors...nonmajors should take 5101; prereq 3104 or equiv or §; informal lab)
Organization and logical structure of computer systems. Representation of programs and data. Number systems, primitive computer systems, programming in machine language. More sophisticated systems, assembly language, sequencing, decision making, arithmetic, logical operations, character manipulation, iteration, subroutines, data description, introduction to assembler software. GrA
- 5001. THEORY AND APPLICATION OF LINEAR PROGRAMMING ALGORITHMS.** (4 cr; prereq 1101 or 3101 or 3104, Math 3211 or 3142, or §; informal lab)
Basic solutions to linear systems; inequalities; convex polyhedral sets; linear programming formulation and optimality conditions; theoretical and computational aspects of simplex algorithm; postoptimal analysis, duality, revised simplex and numerically stable methods, upper bounded problems. GrA
- 5002. COMPUTATIONAL METHODS FOR NONLINEAR PROGRAMMING.** (4 cr; prereq 5001 or §; informal lab)
Convex functions and domains; nonlinear optimality conditions and duality; unconstrained minimization methods; convergence rates; minimization methods for linear and nonlinear constraints; penalty functions; acceleration of convergence; nonconvex problems. GrA
- 5101. STRUCTURE AND PROGRAMMING OF SOFTWARE SYSTEMS I.** (4 cr, §3107; for non-CSci majors...majors should take 3107; prereq 1101 or 3101 or 3104 or equiv or §; informal lab)
Topics are essentially the same as those listed for 3107, but the emphasis and projects are geared to nonmajors. GrA
- 5102. STRUCTURE AND PROGRAMMING OF SOFTWARE SYSTEMS II.** (4 cr; prereq 3107 or 5101 or §; informal lab)
Subroutine coding conventions; argument transfer; interrupts and traps; macros; I/O equipment and operations; buffers; conditional assembly and program segmentation. Students run assembly language programs. GrA
- 5103. STRUCTURE AND PROGRAMMING OF SOFTWARE SYSTEMS III.** (4 cr; prereq 5102 or §; informal lab)
Assembly and macro-generation techniques; multiprogramming, virtual memory, paging, segmentation, dynamic storage allocation, appreciation of systems problems; overview of operating systems, processes, communications among processes; organization of future machines. GrA
- 5104. SYSTEM SIMULATION: LANGUAGES AND TECHNIQUES.** (4 cr; prereq 3107 or 5101, Stat 3091 or §; informal lab)
Simulation methodology including random number generation, queuing, service times, discrete random variables, design of experiments. Simulation languages, flow and event oriented: GPSS, SIMULA, SIMSCRIPT. Model building. Applications to job shops, business, operations research, and operating systems. GrA
- 5105. THEORY OF MACHINE ARITHMETIC.** (4 cr; prereq 3107 or 5101 or §; informal lab)
Residue class arithmetic. Congruences and complement arithmetic. Integral additive and subtractive accumulators. Multiplication and division by shifting and accumulation. Applications to absolute value and sign arithmetic, scaling and floating point operation. GrA
- 5106. STRUCTURE OF HIGHER LEVEL LANGUAGES.** (4 cr; prereq 5102 or §)
Formal definition of programming languages. Syntax. Semantics. The Algol report. Introduction to Algol. Applications. Extensions of concepts to other languages. List structures. List languages. List processing. Compilers and compiler implementation. GrA
- 5107. COMPUTER GRAPHICS I.** (4 cr; prereq 3107 or 5101 or §)
Arrangement of data base and display files. Representation of data types of available display equipment, calligraphic and raster. Character generators. Display processors. Clipping, windowing, and the hidden surface problem. Applications. GrA

- 5117. COMPUTER GRAPHICS II.** (4 cr; prereq 5107 or §)
 Display processor architecture. Data base management and display file handling. Multilevel software systems for enhanced portability and protocol handling in graphical networks. Examples of graphical programming systems. Methodology of curve and surface interpolation and approximation. Programs for three-dimensional display, curve and surface approximation. GrA
- 5121. INTRODUCTION TO DATA STRUCTURES.** (4 cr; prereq 3106 or §; informal lab)
 Basic concepts of data and its representation. Linear lists and strings. Array structures and allocation. Symbol tables and searching techniques; hash coding techniques. Tree structures. Storage systems and structures. Storage allocation. Multilinked structures. Sorting. GrA
- 5122. ADVANCED DATA STRUCTURES.** (4 cr; prereq 5121 or §; informal lab)
 Data structure formalisms. Storage structures and organization. Data structures in programming languages. List processing languages. Data definition languages. Data base management systems and design. Problems in information system design. Applications to large data base problems. GrA
- 5199. PROBLEMS IN LANGUAGES AND SYSTEMS.** (1-4 cr [may be repeated for cr]; prereq §)
 Individual study arranged with faculty member. GrA
- 5200. PRINCIPLES OF CONTINUOUS SYSTEM SIMULATION.** (4 cr; prereq 1101 with §, and Math 3221 or 3061 or §; 3 lect, 1 lab hrs per wk)
 Analog computation. Digital simulation of continuous systems. Hybrid computation. Programming systems. Applications of hybrid computation. GrA
- 5201. FUNDAMENTALS OF LOGIC SYSTEM DESIGN.** (4 cr; prereq 3105 or §)
 Mathematical fundamentals. Sets, set operations, relations, algebraic structures and Boolean algebra, switching functions. Matrix notation and operations for the synthesis of combinational networks and iterative or sequential systems. State reduction and minimization. Design of synchronous flip-flop networks and microprograms for computer algorithms. GrA
- 5211. DATA COMMUNICATIONS AND COMPUTER NETWORKS.** (4 cr; prereq 5102 or §; informal lab)
 Network classification; services; hardware components; network architecture; software problems; research areas. GrA
- 5299. PROBLEMS IN MACHINE DESIGN.** (1-4 cr [may be repeated for cr]; prereq §)
 Individual study arranged with faculty member. GrA
- 5301. NUMERICAL ANALYSIS.** (4 cr, §Math 5472; prereq Math 3221, or 3142 and 3211, or §; a knowledge of FORTRAN is assumed; informal lab)
 General concept of iteration formulas. Solution of equations. Newton's method. Linear systems. Finite differences. Interpolation. Numerical differentiation and integration. Introduction to initial value problems. GrA
- 5302. NUMERICAL ANALYSIS.** (4 cr, §Math 5473; prereq 5301 or §; informal lab)
 General theory of linear approximations. Norms. Error estimates. Convergence rates. Least squares. Orthogonal polynomials. Chebychev interpolation theory. Gaussian quadrature. Further solution of equations. Multipoint iteration formulas. Starting values. Iterative schemes for linear algebra. Conditioning. Jacobi's method. Differential equations. Initial value problems. Systems of equations. Runge-Kutta. Stability. GrA
- 5304. COMPUTATIONAL ASPECTS OF MATRIX THEORY.** (4 cr; prereq 5302 or §; informal lab)
 Computational pitfalls. Conditioning. Iterative methods. Relaxation methods. Various reduction and elimination schemes. Hessenberg matrices. Methods of Lanczos, Givens, Householder. Eigenvalue problems. Bounds for eigenvalues. GrA
- 5305. NUMERICAL SOLUTIONS OF INITIAL AND BOUNDARY VALUE PROBLEMS.** (4 cr; prereq 5302 or §; informal lab)
 Linear two-point boundary value problems. The eigenvalue problem. Tau and Galerkin methods. Nonlinear two-point problems. Shooting method. Newton-Kantorovich method. Elements of numerical solutions of problems in partial differential equations. Laplace, heat, and wave equations. GrA
- 5399. PROBLEMS IN NUMERICAL ANALYSIS.** (1-4 cr [may be repeated for cr]; prereq §)
 Individual study arranged with faculty member. GrA
- 5400. INTRODUCTION TO AUTOMATA THEORY.** (4 cr; prereq 3106 or §)
 Turing machines, computable functions, unsolvability of the halting problem. Finite state models: equivalence, minimization, synthesis of finite state systems, state assignment, decomposition. Other automata. GrA

Course Descriptions—Major Sequences

- 5401. INTRODUCTION TO FORMAL LANGUAGES.** (4 cr; prereq 5400; informal lab)
Formal grammars and languages and their related automata. Language hierarchy. Context free languages and grammars. Pushdown automata. Normal form theorems. Operations on languages. Decidability and undecidability results. Parsing algorithms. Applications to programming. GrA
- 5499. PROBLEMS IN COMPUTATIONAL THEORY OR LOGIC.** (1-4 cr [may be repeated for cr]; prereq §)
Individual study arranged with faculty member. GrA
- 5501. ARTIFICIAL INTELLIGENCE.** (4 cr; prereq 3106 or §; informal lab)
Concept of a "mechanized" intelligence, operational definitions of intelligence. Heuristic search techniques: problem representation, world model representation, solution search. Application to game-playing systems. Natural language processing and semantic information systems. Machine perception and integrated robots. The future of artificial intelligence. GrA
- 5502. INTRODUCTION TO OPERATING SYSTEMS.** (4 cr; prereq 5102 or §; informal lab)
Definition and historical development of operating systems. Classification of systems as batch-processing, interactive, and real-time systems. Abstractions and implementations of properties common to most systems. Concurrency and related control problems. Resource allocation. Storage allocation. Program modularity. Sharing. Multiplexing. Protection. Performance optimization. GrA
- 5503. INTRODUCTION TO COMPILERS I.** (4 cr; prereq 3107 and 5121 or §; informal lab)
A higher level language (MPL), machine language, loaders, linkage editors, mapping MPL onto machine language, code generation techniques; derivation of an intermediate language and implementation of code generators for intermediate onto machine language. Students write the back end of an MPL compiler. GrA
- 5504. INTRODUCTION TO COMPILERS II.** (4 cr; prereq 5503 or §; informal lab)
Lexical scanning together with preprocessing and macro expansion, symbol tables, parsing, intermediate text generation, error detection and correction. Students design and implement a front end for an MPL compiler. GrA
- 5511. ADVANCED TOPICS IN ARTIFICIAL INTELLIGENCE.** (4 cr; prereq 5501 and 5400 or §)
"Systems" employing AI techniques; examples including Shakey (the SRI robot), the hand-eye project at Edinburgh, the MIT robot project, etc. Methods of integrating eyes, hands, ears, etc. into a functioning unit. Natural language facilities including representational schemes, parsing algorithms, and semantic memories. Students design and implement phases of a large system. GrA
- 5599, 5699, 5799. PROBLEMS: NONNUMERIC COMPUTATION, CONTROL SCIENCE, INFORMATION SCIENCE.** (1-4 cr [may be repeated for cr]; prereq §)
Individual study arranged with faculty member. GrA

Criminal Justice Studies (CJS)

Staff—Chairman, Joel B. Samaha, 314 Social Sciences

Professors: Feld, Malmquist, Murton, Tapp, Ward

Associate Professor: Samaha

Assistant Professors: Hindus, Musheno

Instructor: Stanton

Lecturer: Dwyer

The Department of Criminal Justice Studies offers an interdisciplinary program that permits students to specialize in criminal justice and related studies. The specialization may be earned in conjunction with a 2-year associate in liberal arts degree in either CLA or the General College, a 4-year B.A., or a 4-year B.S. in University College. Students specializing in the field should select related majors or individual study programs. To earn the specialization, students must meet all requirements of the program.

All students who wish to earn the specialization are required to register in the Criminal Justice Studies office, 314 Social Sciences Building.

SPECIALIZATION REQUIREMENTS (24 cr)

Core—5101, 5102

Area A—Definition of Behavior as Criminal (8 cr): 5116-5117†, 5205; Soc 3101, 5111, 5135; Hist 5031, 5032, 5289; Law 5846

Area B—Societal Response to Criminal Behavior (8 cr): 5001, 5002, 5003, 5021, 5022, 5103, 5105, 5106, 5113, 5114, 5120, 5131, 5132, 5201, 5202, 5203, 5970; Soc 5105, 5125, 5138; Hist 3041, 3402; Phar 5286, 5970

5001, 5002, 5003. THE ROLE AND FUNCTION OF MUNICIPAL POLICE ADMINISTRATION IN A CHANGING SOCIETY. (4 cr per qtr) Dwyer

5001: The development of American policing; goals, evolution of structure, analysis of the milieu in which police work operates. 5002: Police organization, management, functions; executive responsibilities; policy formulation and implementation; management of staff units. 5003: Organization and management of police services; theory and practice of administration; role of investigative, juvenile, vice, and other programs. GrC

5101. CRIMINAL LAW. (4 cr) Samaha, Feld, Stanton
General criminal law, its philosophical underpinnings. Substantive law of homicide, theft, conspiracy, and attempt; defenses of insanity, self-defense, and mistake of fact or law. GrC

5102. CRIMINAL PROCEDURE. (4 cr) Samaha, Feld
Processes by which persons are convicted. Discretion to arrest, constitutional law of arrest, search and seizure, role of prosecutor, plea bargaining, sentencing, postconviction relief. GrC

5103. THE JUVENILE COURT IN THE UNITED STATES. (4 cr) Guerrero
Philosophy and presuppositions of the U.S. juvenile court. Practical failure of the court to achieve stated goals; alternative means of reaching goals from a legalistic perspective. GrC

5105. ORIGINS OF THE FIFTH AMENDMENT. (4 cr) Samaha
History of the right against self-incrimination from its origins to the ratification of the Constitution in 1791. Evaluation of Chief Justice Magruder's remark that those who wrote the provision into the fifth amendment, "had in mind a lot of history which has largely been forgotten today." GrC

5106. LAW AND SOCIAL ISSUES. (4 cr; prereq Soc 3101) Samaha
How far the law can go in solving social issues that impinge on individual liberties such as sexual relations, drug use, abortion, family relationships. GrC

5113. COMMUNITY-BASED CORRECTIONS. (4 cr; prereq Soc 5105 or §) Murton
Theory, structure, and description of programs that exist as alternatives to imprisonment. GrC

5114. WOMEN IN THE CRIMINAL JUSTICE SYSTEM. (4 cr; prereq Soc 3101 or §) Stanton
Involvement of women in the criminal justice system; effect of sex-based distinctions on a female offender; functioning of the system when women are victims of criminal acts; jobs and job demands given women in the system. GrC

5116-5117†. LAW, JUSTICE, AND THE INDIVIDUAL IN SOCIETY. (4 cr per qtr; prereq sr, grad, law students or §) Tapp
Experiential, interdisciplinary approach to theory and research about individual and institutional processes in developing expressions of law and justice. 5116: Psychology-law interface, cross-cultural examples, law and justice theories, the legal socialization process. 5117: Compliance styles, deviance dynamics, functioning justice systems, psychological reforms. GrC

5121. COMPARATIVE PENAL POLICY. (4 cr; prereq Soc 5105 or §) Ward
Structure and functioning of law enforcement, adjudication and corrections systems in other countries. GrC

5131, 5132. CRIMINAL JUSTICE IN AMERICAN HISTORY. (4 cr per qtr; prereq sr or grad student, Soc 3101, Hist 3041 or §) Hindus
Social context of crime, justice, and punishment. 5131: Colonial morality prosecutions, witchcraft, convict servitude, urban violence, rise of the penitentiary, professional police. 5132: Changing patterns of crime, the criminal class, political justice, the politics of law and order. GrC

5201. POLICE AND COMMUNITY RELATIONS. (4 cr) Dwyer
Critical issues in the police and community relationship; nature of the relationship; assessment of the problem; evaluation of present programs; agenda for change. GrC

Course Descriptions—Major Sequences

- 5202. COMPARATIVE CRIMINAL JUSTICE ADMINISTRATION.** (4 cr) Murton
Application of comparative method to law enforcement administration; law enforcement activities in variety of governmental settings. GrC
- 5203. SEMINAR IN CORRECTIONAL ADMINISTRATION.** (4 cr; prereq Soc 5105 or #) Murton
Organization and decision making in correctional (probation, parole, and institutional) settings. How system is organized, how it functions; relation of administration to attainment of goals. GrC
- 5205. CRIMINAL PSYCHOPATHOLOGY.** (4 cr, \$Psy 5641; prereq sr or grad student) Malmquist
Psychiatric and psychological aspects of antisocial and criminal behavior as related to issues faced in the courts and criminal justice system. GrC
- 5207. CRIMINAL JUSTICE POLICY.** (4 cr; prereq Pol 1031 or PA 3101, Soc 3801 or #)
Formulation of criminal justice policies by courts and legislatures; role of community, interest groups, press, and commissions in criminal justice policy formulation; implementation of policy by criminal justice bureaucracies; theories and methods applied to policy evaluation in criminal justice. GrC
- 5970. DIRECTED STUDIES.** (1-15 cr per qtr; prereq #)
Guided individual reading or study.

Cross-Disciplinary Studies (CDS)

Director, Marcia M. Eaton, 106 Johnston Hall

CDS sponsors four kinds of interdisciplinary, interdepartmental programs:

1. Cross-disciplinary sequences that coordinate regular courses around a central topic.
2. Experimental courses that may be temporary and that are usually interdisciplinary; they may be offered under department auspices or under the designations Literature and Fine Arts (LFA), Natural Science and Technology (NSci), or Social Science (SSci).
3. Interdepartmental major programs in East Asian Studies, Latin American Studies, Religious Studies, Urban Studies, or Women's Studies (see these titles in this bulletin).
4. Individually designed interdepartmental majors (IDIM).

Information about sequences and experimental courses is available in 106 Johnston Hall (current *Class Schedules* list specific sequences and experimental courses). Information and advice on interdepartmental major programs is available in 114 Johnston Hall.

DANISH

See Scandinavian.

Design (Dsgn)

College of Home Economics

Staff—Chairman, Gertrude Esteros, 220 McNeal Hall

Professors: Esteros, Bagley, Larkin

Associate Professors: Abell, Amir-Fazli, Erickson, Coacher, Nagle, Ordos, Stoeckeler

Assistant Professors: Angell, Reece

Instructors and Lecturers: Blade, Burningham, Franklin, Ginthner, Lee (lecturer), Sheno

Design courses listed in this bulletin are open to CLA students. Many design courses are controlled in size; tally cards may be obtained at the CLA Class Reservations office, 12 Johnston Hall. To enter design courses not listed in this bulletin, permission of the CLA Scholastic Committee and the chairman of the subject area within the Department of Design is necessary.

- 1501. INTRODUCTION TO DESIGN.** (3 cr)
Design in the near environment. GrD
- 1521. COLOR AND DESIGN I.** (4 cr)
Color concepts and their application to design. GrD
- 1523. DRAWING AND DESIGN I.** (4 cr)
Basic skills in drawing for the designer.
- 1531. SURFACE FABRIC DESIGN I.** (4 cr)
Surface pattern and composition with varied media and materials: dyeing, resist batik, stencil, block printing, others.
- 1533. METALSMITHING: INTRODUCTION TO TECHNIQUES.** (4 cr)
Techniques in contemporary metalsmithing and jewelry making.
- 1541. COSTUME DESIGN I.** (3 cr; prereq 1521, 1523 or 1525, or #)
Problems in color, texture, design. Sketching. Folk and regional costume. GrD
- 1552. INTRODUCTION TO HOUSING AND INTERIOR DESIGN.** (3 cr, \$1551; prereq soph)
Locating, planning, and selecting a dwelling unit and its furnishings. Design and appraisal of individual and family needs.
- 1553. INTERIOR DESIGN I.** (4 cr; prereq 1521, 1552, AgEn 1010, or equiv)
Designing for living space needs. Evaluation of design quality of furnishing elements. Selection and coordination of fabrics, furniture, accessories in an interior design laboratory.
- 3531. SURFACE FABRIC DESIGN II.** (4 cr; prereq 1521, 1523, 1531, or #)
Printed and dyed techniques.
- 3533. METALSMITHING: FABRICATION.** (4 cr; prereq 1533)
Raising, forging, and other noncasting techniques to create useful objects.
- 3541. COSTUME DESIGN II.** (4 cr; prereq 1541, 1543)
Design of sportswear, day and evening wear, and children's garments.
- 3563. ART AND THE ENVIRONMENT.** (3 cr; prereq soph)
Art and design in housing; the individual's role and responsibility. Contemporary and historic examples of alternative approaches to design of the home environment.
- 5505. ART HISTORY.** (4 cr)
Art from Egyptian period to present. Painting, sculpture, architecture of the past; their influences on contemporary period. Field trips.
- 5512. HISTORY OF EUROPEAN FURNITURE AND INTERIORS.** (3-4 cr; prereq 5505 or equiv)
Furniture and interiors from ancient time through the 19th century.
- 5514. HISTORY OF AMERICAN FURNITURE AND INTERIORS.** (3-4 cr; prereq 5505 or equiv, 5512)
American interiors and furnishings from the 17th to the 20th centuries.
- 5565. HOMES OF THE WORLD.** (3-4 cr; prereq 1551 or 1553 or 3563 or equiv)
Home design in selected regions of the world.

DUTCH

See German.

East Asian Languages

Staff—Chairman, Richard B. Mather, 321a Folwell Hall

Professors: Copeland, Liu (on leave 1976-77), Mather, Shohara

Associate Professor: Loveless

Assistant Professors: Matsumoto, McCarthy

Instructor: Na

Course Descriptions—Major Sequences

The department offers courses at all levels aimed at developing competence in colloquial and literary languages of East Asia (primarily of China and Japan). Students may emphasize either literature (all periods) or linguistics, but opportunity is afforded for philologically based studies of broader cultural aspects of East Asian civilization.

Changes in the program may be made soon after this bulletin is published. Please consult the department office, 321 Folwell Hall, for information.

General Education—Courses especially appropriate for non-Chinese and non-Japanese majors include 1001, 1002; 1032; 3161, 3162; 3163, 3164.

CHINESE (Chn)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1011-1012-1013, 3021-3022-3023

Major Requirements—3031-3032-3033, 5041-5042-5043; 8 cr from courses numbered above Chn 52xx; 8 cr from courses numbered above EAL 31xx or from additional courses above Chn 52xx

- 1011f-1012w-1013s. FIRST-YEAR CHINESE.** (5 cr per qtr)
Speaking and reading modern standard Chinese through structured practice. GrA
- 3021f-3022w-3023s. SECOND-YEAR CHINESE.** (5 cr per qtr; prereq 1013)
Modern standard Chinese, expanded through conversation and reading. GrA
- 3031f-3032w-3033s. THIRD-YEAR CHINESE: CLASSICAL TEXTS.** (5 cr per qtr; prereq 3023)
Extensive training in reading literary Chinese texts. 3031: Biographies from *Shih-chi*. 3032: Mencius. 3033: T'ang poetry. GrA
- 3041, 3042, 3043. ADVANCED CHINESE.** (5 cr per qtr, §5041, 5042, 5043; prereq 3023 for 3041...3031 for 3042...3042 for 3043)
3041: Reading and analysis of 20th-century texts. 3042, 3043: Reading and analysis of vernacular texts. GrA
- 3051, 3052. ADVANCED CHINESE CONVERSATION AND COMPOSITION.** (4 cr per qtr, §5051, 5052; prereq 3023 or §)
Conversation and pronunciation. Exercises in composition and translation, English into Chinese. GrA
- 3090. HONORS TUTORIAL.** (1-4 cr per qtr; prereq Δ)
Individual projects.
- 3970. DIRECTED STUDIES.** (1-4 cr per qtr; prereq 3023 or §)
Guided individual reading or study.
- 5041, 5042, 5043. ADVANCED CHINESE.** (5 cr per qtr, §3041, 3042, 3043; prereq 3023 for 5041...3031 for 5042...3042 for 5043)
For description, see 3041, 3042, 3043; additional work required. GrA
- 5051, 5052. ADVANCED CHINESE CONVERSATION AND COMPOSITION.** (4 cr per qtr, §3051, 3052; prereq 3023 or §, grad standing)
For description, see 3051, 3052; additional work required. GrA
- 5251. STRUCTURE OF STANDARD CHINESE.** (4 cr; prereq 1013 and Ling 3001)
Phonological and syntactic structures of modern standard Chinese.
- 5252. HISTORY OF THE CHINESE LANGUAGE.** (4 cr; prereq 3031...Ling 3601 highly recommended)
Sources and methods in study of historical development of the Chinese language.
- 5261f, 5262w, 5263s. READINGS IN CHINESE LITERATURE.** (4 cr per qtr; prereq 3033)
Chinese literature; styles, ideas, historical background of the authors. GrD
- 5451, 5452. STUDIES IN CHINESE LINGUISTICS.** (4 cr per qtr; prereq 5251 or 5252)
Syntax of modern standard Chinese, Chinese dialectology, Chinese historical phonology, grammar of classical Chinese. GrA

- 5461. PROSEMINAR ON ANCIENT AND MEDIEVAL CHINESE TEXTS.** (4 cr; prereq 2 qtrs from 5261, 5262, 5263)
Poetic, expository, or narrative Chinese texts from 600 B.C. to 1000 A.D. Projects. GrD
- 5463s. CHINESE DOCUMENTS.** (4 cr; prereq 3032 or §)
Contemporary Chinese expository writing. Primary sources and major reference works. GrC
- 5471. RESEARCH METHODS.** (4 cr; prereq 3033)
Philological and textual research in the Chinese humanities. GrD
- 5472. CHINESE BIBLIOGRAPHY.** (4 cr; prereq 2 qtrs from 5261, 5262, 5263, or §)
Primary sources and reference materials for study of Chinese humanities; designed to prepare students for independent research. GrD
- 5970. DIRECTED STUDIES.** (1-4 cr per qtr; prereq 2 qtrs from 5261, 5262, 5263)
Guided individual reading or study.

JAPANESE (Jpn)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1011-1012-1013, 3021-3022-3023

Major Requirements—3031-3032-3033, 5041-5042-5043; 8 cr from courses numbered above Jpn 52xx; 8 cr from courses numbered above EAL 31xx or from additional courses above Jpn 52xx

- 1011f-1012w-1013s. FIRST-YEAR JAPANESE.** (5 cr per qtr)
Reading, writing, and speaking Japanese. GrA
- 3021f-3022w-3023s. SECOND-YEAR JAPANESE.** (5 cr per qtr; prereq 1013)
Foundation for reading knowledge of Japanese. Review and pattern drill. GrA
- 3031f-3032w-3033s. THIRD-YEAR JAPANESE: ADVANCED.** (5 cr per qtr; prereq 3023)
Hearing, speaking, reading, and writing Japanese. Development of reading proficiency in modern Japanese prose and poetry. Formal written Japanese. GrA
- 3051, 3052, 3053. ADVANCED JAPANESE CONVERSATION AND COMPOSITION.** (4 cr per qtr, §5051, 5052, 5053; prereq 3023 or §)
Verbal expression, oral and written; grammar review; idioms and nuances; short compositions, correspondence. GrA
- 3090. HONORS TUTORIAL.** (1-4 cr per qtr; prereq Δ)
Individual projects.
- 3970. DIRECTED STUDIES.** (1-4 cr per qtr; prereq 3023 or §)
Guided individual reading or study.
- 5041f-5042w-5043s. FOURTH-YEAR JAPANESE: CLASSICAL.** (5 cr per qtr; prereq 3033)
Classical Japanese; masterpieces of Japanese literature in classical language; grammatical construction. GrA
- 5051, 5052, 5053. ADVANCED JAPANESE CONVERSATION AND COMPOSITION.** (4 cr per qtr, §3051, 3052, 3053; prereq 3023 or §, grad standing)
For description, see 3051, 3052, 3053; additional work required. GrA
- 5251. HISTORY OF JAPANESE LANGUAGE.** (4 cr; prereq 3033, 5451, or §)
Development of Japanese grammar from classical to modern language. GrA
- 5261f, 5262w, 5263s. READINGS IN JAPANESE LITERATURE.** (4 cr per qtr; prereq 3033)
Style, ideas, and historical appreciation. Traditional Japanese literary criticism. GrD
- 5451f-5452w-5453s. STRUCTURE OF JAPANESE.** (4 cr per qtr; prereq 3023 and Ling 3001, or §)
Dealing with data of language itself in phonology, morphology, and syntax.
- 5461. PROSEMINAR IN JAPANESE LITERATURE.** (4 cr; prereq 2 qtrs from 5261, 5262, 5263)
Selected poetic, expository, narrative, and dramatic texts. GrD
- 5471. RESEARCH METHODS.** (4 cr; prereq 3033)
Philological and textual research in Japanese sources. GrD
- 5472. JAPANESE BIBLIOGRAPHY.** (4 cr; prereq 2 qtrs from 5261, 5262, 5263, or §)
Primary sources, secondary materials in the native research tradition. GrD
- 5970. DIRECTED STUDIES.** (1-4 cr per qtr; prereq 2 qtrs from 5261, 5262, 5263)
Guided individual reading or study.

Course Descriptions—Major Sequences

EAST ASIAN LANGUAGES (EAL)

- 1001, 1002. THE EAST ASIAN HERITAGE.** (4 cr per qtr, §EAS 1001, 1002)
Study of the cultures of East Asia through representative works of national expression. *1001*: Early period. *1002*: Modern period. GrC
- 1032. RELIGIONS OF EAST ASIA.** (4 cr, §RelS 1032, §EAS 1032)
Religious aspects of Confucianism, Taoism, Buddhism, and Shintoism as practiced in East Asia; Christian missions in East Asia. GrC
- 3053. CHINESE-JAPANESE CALLIGRAPHY.** (4 cr)
Chinese calligraphic styles; aesthetic analysis; demonstration and practice of techniques. GrD
- 3161, 3162. LITERATURE OF CHINA: THE LYRICAL TRADITION AND THE NARRATIVE TRADITION.** (4 cr per qtr, §EAS 3161, 3162; reading knowledge of Chinese not required)
Intellectual, social, and aesthetic traditions. *3161*: The lyrical tradition. *3162*: The narrative tradition. GrD
- 3163, 3164. LITERATURE OF JAPAN.** (4 cr per qtr, §EAS 3163, 3164; reading knowledge of Japanese not required)
Intellectual, social, and aesthetic traditions. GrD
- 5990. COLLOQUIUM ON EAST ASIA.** (1-4 cr per qtr; prereq jr, sr, or grad standing and #)
Student research and reports.

East Asian Studies (EAS)

Staff—*Chairman, Program Administrative Committee*, to be named

Adjunct Faculty—Professors: Clark (Sociology), Copeland (East Asian Languages), Hsu (Geography), Liu (East Asian Languages), Mather (East Asian Languages), Shohara (East Asian Languages), Spencer (Anthropology), Taylor (History), Tuan (Geography), Turner (Political Science), Wang (East Asian Languages)

Associate Professors: Benjamin (Political Science), Loveless (East Asian Languages), Marshall (History), Poor (Art History), Wong (East Asian Library)

Assistant Professors: Farmer (History), Kagan (Music), Matsumoto (East Asian Languages)

Instructor: Na (East Asian Languages)

East Asian Studies unites humanistic and social science disciplines in inquiry into the environment, historical experience, and societies and cultures of East Asia—especially China, Japan, Korea, and Vietnam. The undergraduate major combines language and area courses to provide a broad focus on East Asian civilization and to offer preparation for specialized graduate study.

Students may choose either a humanities or social science focus for their major programs.

B.A. MAJOR SEQUENCES

Required Preparatory Courses—Chn 1011-1012-1013 or Jpn 1011-1012-1013 or equiv; Geog 3211

For social science emphasis, 8 cr from two of these three groups: Hist 1451, 1461, 3451, 3461; 1452, 1462, 3452, 3462; 1453, 1463, 3453, 3463

For humanities emphasis, 8 cr from history courses listed above, or EAL 1001, 1002

Major Requirements (3xxx and above)—For social science emphasis, 12 cr in East Asian history; 12 cr in East Asian social science (nonhistory); 8 cr in East Asian humanities; 12 additional cr from the list of courses approved for the major

For humanities emphasis, 8 cr from EAL 3161, 3162, 3163, 3164, 5990; 8 additional cr from these courses or Chinese or Japanese courses numbered 3xxx or above; 8 cr from ArtH 3013, 5765, 5766, 5767, 5769, Mus 3808; 4 cr in East Asian history; 4 cr in East Asian social science courses (nonhistory); 12 additional cr from the list of courses approved for the major

Students plan their programs in consultation with advisers to suit individual interests and intellectual needs. Students planning graduate work should make appropriate preparation. All are urged to take additional language courses.

The list of courses approved for the major, additional information, and advising services are available in the program office, 114 Johnston Hall.

5300. PROSEMINAR: INTERDISCIPLINARY TOPICS IN EAST ASIAN STUDIES. (4 cr per qtr [12 cr max, 8 cr max toward major]; prereq three courses above 3xxx approved for EAS major, or *)

Taught by faculty from two or more disciplines.

Ecology and Behavioral Biology (EBB)

College of Biological Sciences

Staff—Head, Margaret B. Davis, 306 Biological Sciences Center; *Director of Undergraduate Studies,* Davis

Professors: Cushing, Davis, Gorham, McKinney, Parmelee, Phillips, Shapiro, Siniff, Tester, Tordoff, Wright

Associate Professors: Birney, Bright, Corbin, Megard, Regal

Assistant Professors: Hopkins, Pace, Taylor

Ecology is concerned with organism-environment interaction and the study of the structure and functioning of ecosystems.

General Education—Courses especially appropriate for nonmajors include Biol 1104, 1105, 1107 and EBB 3001, 3111.

Biol 1104w. ECOLOGY AND MAN. (4 cr; prereq Biol 1011) Pace

Basic concepts of ecology; man's increasing impact on and exploitation of the environment; stress on the biosphere's limits of energy, resources, and space. GrB

Biol 1105f. INTRODUCTION TO EVOLUTIONARY BIOLOGY. (4 cr; prereq Biol 1011 or 1101) Birney

History and basis of evolutionary thought; the history and future of man. GrB

Biol 1107w. INTRODUCTION TO BEHAVIORAL BIOLOGY. (4 cr; prereq Biol 1011) Hopkins

Central ideas in behavior; control of movement, ontogeny, hormone and sensory systems, behavioral evolution, social behavior. Behavior of primates. GrB

Biol 3041f,w,s,su. ECOLOGY. (5 cr, §EBB 5041; prereq biology major, Math 1231-or *, Δ) Staff

Interactions of plant and animal populations and their environments. Organization, functioning, and development of ecological systems; population growth and regulation. Modern man's impact on the biosphere. GrB

3001s. INTRODUCTION TO ECOLOGY. (4 cr, §Biol 1104; open to jrs and above but not to biology majors) Corbin

Basic concepts in ecology; the organization, development, and functioning of ecosystems; population growth and regulation. Man's impact on ecosystems. GrB

3004w. FUNDAMENTALS OF ECOLOGY. (4 cr; not open to biology majors; prereq Biol 1011, college algebra) Tester

Relationships between organisms and their environment; ecosystem structure and function emphasizing energy flow, biogeochemical cycling and succession; population dynamics; regional biotic communities. GrB

3101f,w. ECOLOGY FOR ENGINEERS AND PHYSICAL SCIENTISTS. (4 cr, §3001, §Biol 1104; not open to biology majors; prereq Math 1231) Megard, Bright

Spatial and temporal interactions between populations in ecosystems; processes affecting populations; transformations of energy and materials in the biosphere.

Course Descriptions—Major Sequences

- 3111s. VERTEBRATE BEHAVIOR.** (4 cr, \$AnSc 3111; prereq Biol 1106 or 3011, or §) Phillips
The nature and variety, development, motivation, and evolution of animal behavior; social interactions and communication. GrB
- 3990f. RESEARCH TOPICS IN ECOLOGY AND BEHAVIORAL BIOLOGY.** (1 cr; S-N only; prereq sr or 3rd-qr jr in CBS)
Current research in the department.
- 3990f,w,s. RESEARCH PROBLEMS.** (1-6 cr; prereq §)
Individual research for undergraduate majors.
- 5014f. ECOLOGY OF PLANT COMMUNITIES.** (5 cr; prereq 3004 or Biol 3041, 1 qtr of statistics or §) Cushing
Methods of describing, sampling, and classifying plant communities; theory of structure, development, and stability of the interactions among constituent populations. Field trips; analysis of quantitative data.
- 5015s. NUTRIENTS AND ENERGY IN TERRESTRIAL ECOSYSTEMS.** (6 cr; prereq Biol 3041, 4 cr of statistics, §)
Hydrological and biogeochemical cycling processes, flow of energy in natural ecosystems, effects of certain perturbations. Concepts of ecosystem modeling. Nutrient cycling in terrestrial plant communities. Laboratory may include greenhouse experiments, field trips, and student discussions of current literature.
- 5016s. ECOLOGICAL PLANT GEOGRAPHY.** (3 or 5 cr; prereq 3004 or Biol 3041, Bot 3201 or ¶Bot 3201 or §) Cushing
Vegetation regions of the world in general and North America in detail; ecological principles of plant distribution; regional and temporal patterns in the distribution of vegetation and taxonomic groups. Field trips to Minnesota floristic regions.
- 5017f. PREDATORS.** (3 cr; prereq Biol 3041 or §) Taylor
Energetics, ecology, and evolution of vertebrate and invertebrate predators and insect parasitoids.
- 5021f. PREDATION LABORATORY.** (2 cr; prereq 5017 or ¶5017 and §) Taylor
Individual projects in the behavior and population ecology of predators.
- 5022w. COMPARATIVE ETHOLOGY.** (4 cr; prereq §) McKinney
Evolution and adaptive significance of behavior, primarily in vertebrates; emphasis on comparative methods.
- 5029w. POPULATION ECOLOGY.** (4 cr; prereq 3004 or Biol 3041, one course in statistics) Siniff
Factors involved in the regulation, growth, and general dynamics of populations. Data needed to describe populations, population growth, population models, and regulatory mechanisms.
- 5031s. EVOLUTIONARY ECOLOGY.** (3 cr; prereq Biol 3041 or equiv, and §; offered 1977 and alt yrs) Corbin
Evolutionary concepts and theory applied to the study of populations, communities, and ecosystems.
- 5154w. BEHAVIORAL AND PHYSIOLOGICAL ECOLOGY.** (3 cr, \$Zool 5154; prereq advanced course work in physiology, behavior, or ecology) Regal
Ecological approach to behavioral and physiological control systems. Mechanisms by which animals regulate their positions in time and space and regulate the internal milieu. Orientation, learning and adaptation of behavior, heat and water regulation, bioenergetics, biological rhythms.
- 5155w,s. LABORATORY IN BEHAVIORAL AND PHYSIOLOGICAL ECOLOGY.** (3 cr, \$Zool 5155; prereq 5154, §) Regal
Individual directed projects.
- 5314w. NEUROETHOLOGY.** (3 cr, \$AnSc 5314; prereq Biol 3011 or AnSc 1300 or §; offered 1977 and alt yrs) Phillips
Neurological and neurochemical bases of animal behavior; reception, coding, transmission, and storage of information; levels of integration, central control of input and output; spontaneity development, learning.
- 5601f. LIMNOLOGY.** (4 cr, \$Geo 5601; prereq Chem 1005 or §) Shapiro
Events occurring in lakes, reservoirs, and ponds; their origins; their physics, chemistry, and biology. Interrelationships of these parameters; effects of civilization on lakes. GrB
- 5602f. CASE STUDIES IN LIMNOLOGY.** (3 cr; prereq 5601 or Geo 5601 and §; offered 1976 and alt yrs) Shapiro
Interactions between physical, chemical, and biological phenomena in lakes; relationships between lakes, watersheds, and human activities. GrB
- 5970f,w,s. DIRECTED STUDIES.** (Cr ar; prereq Δ)

Courses Offered at Lake Itasca Forestry and Biological Station

- 5812su. **AQUATIC ECOLOGY.** (5 cr; prereq 15 cr of biology, 5 cr of chemistry) GrB
- 5813su. **TOPICS IN LIMNOLOGY.** (5 cr; prereq introductory course in limnology [5812 or 5601 or equiv]...prior completion of Bot 5811 recommended)
- 5814su. **COMMUNITY STRUCTURE AND FUNCTIONING.** (5 cr; prereq course in ecology)
- 5815su. **FIELD ETHOLOGY.** (5 cr; prereq course in ornithology or ecology)
- 5816su. **ECOLOGY OF FRESHWATER ALGAE.** (5 cr; prereq 5813, Bot 5811)
- 5817su. **VERTEBRATE ECOLOGY.** (5 cr; prereq course in ecology)
- 5818su. **QUANTITATIVE ECOLOGY.** (5 cr; prereq 9 cr of ecology, 1 qtr of statistics or ‡; offered 1976 and alt yrs)
- 5819su. **SOILS AND THE ECOSYSTEM.** (5 cr; prereq course in ecology; offered 1976 and alt yrs)
- 5820su. **WETLAND ECOLOGY.** (5 cr; prereq 15 cr of biology, introductory chemistry, or ‡...Biol 3041 recommended; offered 1977 and alt yrs)
- 5821su. **QUATERNARY PALEOECOLOGY.** (5 cr; prereq 1 qtr of ecology or ‡; offered 1977)
- 5822su. **REGIONAL LIMNOLOGY.** (5 cr; prereq 15 cr of biology, 10 cr of chemistry) GrB

Economics (Econ)

Staff—Chairman, N. J. Simler, 1035 Business Administration Building; **Director of Undergraduate Studies,** Edward Coen (on leave 1976-77), 1035 Business Administration Building; Brownlee, Chipman, Clark, Danforth, Foster, Hause (on leave spring 1977), Heller, Henderson, Hildreth (on leave fall 1976), Holt, Hurwicz (on leave 1976-77), Jordan, Kareken, Koeune, Krueger, Lee, Mohring, Pitt, Richter, Sargent (on leave 1976-77), Sims, Smith, Swan (on leave 1976-77), Thomson, Turnbull, Wallace

Economics seeks to describe how the economy works, to define criteria for assessing its efficiency in providing goods and services, and to evaluate alternative techniques of social control intended to increase economic efficiency and equity.

A major in economics is useful for students contemplating careers in business, law, government, or teaching. It familiarizes them with the basic features of the economic environment. For senior work as economists in business or government, and for college teaching, graduate work is essential. Prospective public school teachers should consult the *College of Education Bulletin*.

General Education—All courses are open to nonmajors, but those with minimal prerequisites may be of special interest. Courses that require no prior course work in economics are 1001, 1001H, 1002, 1002H, 1004, 1005, 1014, 3001. Those that require only 1001 and 1002 are 3501, 3601, 3701, 3711, 3801, 3970, 5021, 5301, 5307, 5311, 5313, 5315, 5401, 5611, 5621, 5623.

B.A. and B.S. Majors—The B.A. sequence is relatively nonmathematical and nonquantitative. The B.S. sequence emphasizes mathematical and statistical methods in economics. Students contemplating graduate work in economics or careers as professional economists in business, government, or college teaching are advised to select the B.S. program, or to include in a B.A. major a program of courses approximating that required for the B.S. Advisers for majors and premajors are the director of undergraduate studies and his assistant.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1001 or 1001H or equiv; 1002 or 1002H or equiv; Math 1111 or 1131 or 1141 or equiv. (Students with good high school grades in economics or mathematics may consult the director of undergraduate studies about modification of this requirement.)

Course Descriptions—Major Sequences

Major Requirements—Minimum of 35 3xxx-5xxx cr, including 3101 or 3101H, 3102 or 3102H, and 3131 or 3131H. (These required courses should be taken as soon as possible. 3101 and 3102 may be taken in either order or simultaneously.)

A maximum of two statistics courses (selected from *one* of the following three groups) may count toward the 35-cr total: Stat 3091, 5101, 5021-5022, 5121-5122, 5131-5132, 5302; PubH 5450-5452-5454; QA 3053.

Two courses in the major may be taken S-N.

Departmental permission is required to apply more than 8 cr of directed studies (3970, 5970) toward the major.

Instructor's consent is required for admission to the following courses because of their difficulty: 5161-5162-5163, 5164-5165-5166, 5171-5172, 5181-5182, 5261-5262-5263, 5461-5462-5463, 5561-5562, 5661, 5671-5672-5673, 5861-5862-5863.

Courses 3001, 3002, 3501, 3601, 3701, 3711, 3801, 5301, 5307, 5311, 5401, 5701 are reserved for nonmajors.

B.S. MAJOR SEQUENCE

Required Preparatory Courses—1001 or 1001H or equiv; 1002 or 1002H or equiv; Math 1211-1221-1231 or 1311-1321-1331 or 1611-1621 or equiv

Major Requirements—Preferably 3101H, 3102H and 3131H (but non-honors sections of these courses are acceptable)

Math 3211 and 1 qtr linear algebra (3142 recommended)

Stat 5021-5022 or 5121-5122 or 5131-5132

Econ 5231 or Stat 5302 or Econ 5261

Two courses from 5113 (strongly recommended), 5161-5162-5163, 5164-5165-5166, 5171-5172, 5181-5182, 5261-5262-5263, 5461-5462-5463, 5561-5562, 5661, 5671-5672-5673, 5861-5862-5863. These courses are often difficult; an adviser's help in making selections is urged.

20 3xxx-5xxx cr in economics, or 16 such cr together with Stat 5101 or a mathematics course approved by an adviser

No courses in this major can be taken S-N.

1001f,w,s. PRINCIPLES OF MACROECONOMICS. (4 cr, \$1004, \$1014, \$3001, \$3002; prereq 3rd-qtr fr or CDS student)

National income; money and banking; business cycles; international trade. GrC

1001Hf,w,s. HONORS COURSE: PRINCIPLES OF MACROECONOMICS. (5 cr, \$1004, \$1014, \$3001, \$3002; prereq 3rd-qtr fr...B avg recommended) GrC

1002f,w,s. PRINCIPLES OF MICROECONOMICS. (4 cr, \$1005, \$1015, \$3001, \$3002; prereq 3rd-qtr fr)

Demand and supply; competition and monopoly; the distribution of income. GrC

1002Hf,w,s. HONORS COURSE: PRINCIPLES OF MICROECONOMICS. (5 cr, \$1005, \$1015, \$3001, \$3002; prereq 3rd-qtr fr...B avg recommended) GrC

1004f,w,s. PRINCIPLES OF MACROECONOMICS. (4 cr, \$1001; prereq 1 qtr calculus)

For description, see 1001. GrC

1005f,w,s. PRINCIPLES OF MICROECONOMICS. (4 cr, \$1002; prereq 1 qtr calculus)

For description, see 1002. GrC

1014w. SCOPE, METHODS, AND APPLICATIONS OF ECONOMICS. (5 cr, \$1001, \$1004, \$3001, \$3002)

Overview of economics. Professional economics specialists explain their fields. Types of problems for which study of economics is useful. GrC

1015s. INTRODUCTION TO ECONOMIC ANALYSIS. (4 cr, \$1002, \$1005, \$3001, \$3002; prereq 1014; may substitute for 1002 as prereq for 3xxx-5xxx courses in economics)

Elementary training in analytical approach; applications to production and market structures in American economy. GrC

- 3001f-3002w. ECONOMIC PROBLEMS OF AMERICAN ECONOMY.** (5 cr per qtr, \$1001, \$1002, \$1004, \$1005, \$1014, \$1015; not available to economics majors as 3xxx-level cr; offered alt yrs)
General education in economics for the average citizen. GrC
- 3021. SURVEY OF ECONOMIC IDEAS.** (3-5 cr; prereq 1001, 1002 or equiv)
Economic thought from Adam Smith to J. M. Keynes; impact of industrial revolution and business cycle on formation of theory. GrC
- 3041. CURRENT ISSUES WORKSHOP.** (4 cr; prereq 1001, 1002 or equiv)
Problems of current interest analyzed with the tools and viewpoint of economic theory. Discussion course, with active student participation. GrC
- 5021. ECONOMICS, ETHICS, AND ECONOMIC PHILOSOPHY.** (3-5 cr; prereq 1001, 1002 or equiv; offered when feasible)
Literature and issues it raises; relation of ethics to economic organization, practice, and policy. Economic philosophies; formulation of economic philosophy. GrC
- 5031, 5032, 5033. CURRENT ECONOMIC ISSUES.** (3-5 cr per qtr [may be repeated for cr with #]; prereq 3101, 3102 or equiv or #; offered when feasible)
Current controversies over economic policy and underlying problems. GrC

Economic Theory

- 3101f,w,s. MICROECONOMIC THEORY.** (4 cr; prereq 1001, 1002, Math 1111 or 1141 or 1131 or equiv)
Behavior of households, firms, and industries under competitive and monopolistic conditions; factors influencing production, price, and advertising decisions. GrC
- 3101H. HONORS COURSE: MICROECONOMIC THEORY.** (5 cr; prereq 1001, 1002, 1 qtr calculus...B avg recommended) GrC
- 3102f,w,s. MACROECONOMIC THEORY.** (4 cr; prereq 1001, 1002, Math 1111 or 1141 or 1131 or equiv)
Determinants of national income, employment, and price level; aggregate consumption, investment, and government demand; the money market; the labor market. GrC
- 3102H. HONORS COURSE: MACROECONOMIC THEORY.** (5 cr; prereq 3101 or 3101H or #, 1 qtr calculus...B avg recommended) GrC
- 3105. MANAGERIAL ECONOMICS.** (4 cr, \$3101; for business administration majors only; prereq 1001, 1002, 1 qtr calculus)
Theory of the firm; managerial decision problems. Demand theory. Production technology and cost concepts. Pricing and output decisions. Investment behavior.
- 3131f,w,s. WELFARE ECONOMICS.** (4 cr; prereq 3101 or 3101H or equiv)
Economic efficiency and the conditions necessary to sustain it. Conflicts between efficiency and income distribution goals. How market structure and public policies increase or decrease efficiency. GrC
- 3131H. HONORS COURSE: WELFARE ECONOMICS.** (5 cr; prereq 3101 or 3101H or #, 1 qtr calculus...B avg recommended) GrC
- 5111. FOUNDATIONS OF MATHEMATICS FOR SOCIAL SCIENTISTS.** (4 cr; prereq Math 1111 or equiv or #)
Sets. Relations. Partially ordered systems. Functional relations. Elements of logical calculus. Groups. Matrices. Applications mostly in economics, decision and game theory; some in statistics. GrC
- 5113. INTRODUCTORY TOPICS IN MATHEMATICAL ECONOMICS.** (4 cr; prereq 3101 or equiv, Math 3142, 3211, or #)
Development in mathematical terms of selected models of economic behavior. Topics selected to illustrate the advantages of a mathematical formulation.
- 5141. BUSINESS CYCLES.** (4 cr; prereq 3102, 3751 or equiv)
Ups and downs of business; causes and statistical data; relationship of cycles to economic growth. Methods of forecasting. Proposals for stabilization. GrC
- 5141H. HONORS COURSE: BUSINESS CYCLES.** (5 cr; prereq 3101, 3102, 3751 or equiv...B avg recommended) GrC
- 5151. ELEMENTS OF ECONOMIC ANALYSIS: FIRM AND HOUSEHOLD.** (3 cr, \$3101; prereq 1001, 1002, 1 qtr calculus, grad student or #)
Decision making by households and firms under conditions of competition, monopoly, and monopolistic competition. GrC

Course Descriptions—Major Sequences

- 5152. ELEMENTS OF ECONOMICS ANALYSIS: INCOME AND EMPLOYMENT.** (3 cr, §3102; prereq 1001, 1002, 1 qtr calculus, grad student or §)
Determinants of national income, employment, and price level; aggregate consumption, investment, and asset holding. GrC
- 5161-5162-5163. MICROECONOMIC THEORY.** (5 cr per qtr [no grad cr]; prereq 3131, Math 3211 or equiv, §...1 qtr linear algebra recommended)
Decision problems faced by the household and the firm; theories of choice under conditions of certainty and uncertainty. Partial equilibrium analysis of competition and monopoly. General equilibrium analysis. Welfare economics: economic efficiency of alternative market structures; social welfare functions. Dynamics: stability of markets; introduction to capital theory. GrC
- 5164-5165-5166. MACROECONOMIC THEORY.** (5 cr per qtr [no grad cr]; prereq 3102, 3131, Math 3211 or equiv, §...1 qtr linear algebra recommended)
General equilibrium models for determining output, employment, price level, and rate of interest. Components of demand for goods (especially consumption and investment demand) and for financial assets. Models of economic fluctuations and growth. GrC
- 5171-5172. HISTORY OF ECONOMIC THOUGHT.** (5 cr per qtr [no grad cr]; prereq 5161, 5164)
5171: Classical economists, Marx, beginnings of neoclassical economics. 5172: Development of neoclassical economics through 1930's. Origins of macro theory. GrC
- 5181-5182. DECISION MAKING AND OPERATIONAL ANALYSIS.** (5 cr per qtr [no grad cr]; prereq 3101 or 5151, 2 qtrs calculus, 1 qtr linear algebra, §)
5181: Linear models of economic activity; linear programming and input-output analysis. 5182: Nonlinear models of economic activity; nonlinear programming models. GrC

Econometrics

- 5231. INTRODUCTION TO ECONOMETRICS.** (4 cr, §3251; prereq QA 3053 or Stat 5022 or equiv or §)
Least-squares estimation in two- and three-variable linear models. Significance tests and confidence intervals. Autocorrelation and multicollinearity. Distributed lags. Simultaneous equation systems. Identification, least-squares bias. Two-stage least squares. Case studies. GrC
- 5261f-5262w-5263s. APPLIED ECONOMETRICS.** (5 cr per qtr [no grad cr]; prereq 3101, 3102, Stat 5122, 1 qtr linear algebra, §)
Conceptual basis of econometric theory (omitting many proofs of theorems); application to economic models. Laboratory. GrC
- 5271-5272. BAYESIAN DECISION MAKING.** (4 cr per qtr, §Stat 5271-5272; prereq Stat 5133 for 5271...3101 and 5271 for 5272)
5271: Axioms for personal probability and utility. Elements of statistical decision theory. Bayesian analysis of linear models. 5272: Expected utility models for economic decisions made under conditions of uncertainty. Applications to portfolio selection, forward and futures trading, betting, contingency markets, business planning.

Economic Development, Comparative Systems, Area Studies

- 5301. ECONOMIC DEVELOPMENT.** (4 cr, §5331; not open to economics majors; prereq 1001, 1002 or equiv)
Economic growth in low income countries. Theory of aggregate and per capita income growth. Population growth, productivity increases, and capital formation. Allocation of resources between consumption and investment and among sectors. International assistance and trade. GrC
- 5307. COMPARATIVE ECONOMIC SYSTEMS.** (4 cr, §5337; not open to economics majors; prereq 1001, 1002 or equiv)
Functions of economic systems; market economy, liberal socialism, centrally planned economy. American and Soviet economies. GrC
- 5311. ECONOMY OF LATIN AMERICA.** (4 cr, §5341; not open to economics majors; prereq 1001, 1002 or equiv)
Current economics problems: exchange controls, land reform, inflation, and fluctuation in prices on basic commodities. Evaluation of foreign aid programs. GrC
- 5313. ECONOMY OF U.S.S.R.** (4 cr; prereq 1001, 1002 or equiv)
Economic organization, planning and control of use of resources, and distribution of product. Performance of economy in agriculture and industry under 5-year plans. External economic policy. Public finance, income distribution, economic incentives. GrC

- 5315. ECONOMICS OF ASIA.** (4 cr; prereq 1001, 1002 or equiv)
Economic development following contact with Western civilization. Current problems; population growth, capital formation, international economic relations, choice between types of economic organization. GrC
- 5331. ECONOMIC DEVELOPMENT.** (4 cr, \$5301; prereq 3101, 3102 or equiv or #)
For description, see 5301. GrC
- 5337. COMPARATIVE ECONOMIC SYSTEMS.** (4 cr, \$5307; prereq 3101, 3102 or #)
For description, see 5307. GrC
- 5341. ECONOMY OF LATIN AMERICA.** (4 cr, \$5311; prereq 3101, 3102 or #)
For description, see 5311. GrC
- 5347, 5348. DEVELOPMENT OF AMERICAN ECONOMY.** (4 cr per qtr; prereq 3101, 3102 or equiv or #)
Applications of economic theory and empirical methods to topics in American economic development, particularly during the 19th-century period of accelerated growth and industrialization. GrC

International Economics

- 5401. INTERNATIONAL ECONOMICS.** (4 cr, \$5431; not open to economics majors; prereq 1001, 1002 or equiv)
The case for free trade. Effects of tariffs; protection of infant industries; common markets. Balancing international receipts and payments, the role of exchange rates, international monetary reform. GrC
- 5411. U.S. FOREIGN ECONOMIC POLICY.** (4 cr; prereq 5401 or equiv; offered alt yrs)
Development of 20th-century U.S. foreign economic policy; current issues. GrC
- 5421. THE PROSPECTIVE WORLD ECONOMY.** (4 cr, \$IntR 5802; prereq 5401 or 5431 or #) Smith
Alternative patterns for a future world economy; their implications for the economic welfare of nations. World institutions and their relation to growth and survival problems. GrC
- 5431. INTERNATIONAL ECONOMICS.** (4 cr, \$5401; prereq 3101, 3102 or equiv or #)
For description, see 5401. GrC
- 5461f-5462w-5463s. INTERNATIONAL TRADE AND PAYMENTS THEORY.** (5 cr per qtr [no grad cr]; prereq 3102, 3131, Math 3211 or equiv, #...1 qtr linear algebra recommended)
Gains from trade; effect of trade on factor prices; tariffs; customs unions. Relation of trade theory to growth and development. Balance of payments disequilibrium, exchange rates, capital movements, international liquidity. GrC

Labor Economics

- 3501. LABOR ECONOMICS.** (4 cr, \$3551, \$5531; not open to economics majors; prereq 1001, 1002)
Role of labor in economy; labor as a factor of production, population and the labor force; economics of labor markets; labor market institutions; theories of wages and employment; unions and collective bargaining; public policy. GrC
- 3511. ECONOMICS OF EDUCATION.** (4 cr; prereq 1001, 1002 or equiv)
Schooling as investment in human capital. Postschool investment in human capital. Relationship between education and income. Problems of estimation. Social versus private rates of return to education. Financing higher education. GrC
- 5531. LABOR ECONOMICS.** (4 cr, \$3501, \$3551; prereq 3101, 3102 or equiv)
For description, see 3501. GrC
- 5533. INCOME DISTRIBUTION: FACTS, THEORIES, ISSUES.** (4 cr; prereq 3101)
Measurement and interpretation of income inequalities. Hypotheses about the existing distribution of income. Policies or methods for changing the distribution of income. GrC
- 5534. ECONOMICS SECURITY.** (4 cr, \$Ins 3210; prereq 3501 or 5531 or #)
Public and private approaches to problems of economic insecurity. Economic and social implications of private and public programs. Emphasis on economics of income and employment stabilization rather than upon legal or administrative aspects. GrC
- 5537. LABOR MARKET BEHAVIOR AND REGULATIONS.** (4 cr; prereq 3501 or 5531 or #)
Public and private policies in regulation of employer-employee-union relations and labor market behavior. Settlement of disputes. Control of employer and union self-help techniques. Economic rather than legal or administrative aspects of policy. GrC

Course Descriptions—Major Sequences

- 5541. CONTEMPORARY LABOR ISSUES.** (4 cr; prereq 3501 or 5531 or §)
Important labor problem areas examined in light of economic, legal, political, and social implications. GrC
- 5561-5562. WAGES AND EMPLOYMENT.** (5 cr per qtr [no grad cr]; prereq 3102, 3131, 1 qtr calculus, §)
Economic analysis of labor markets and their operation under conditions of individual and collective bargaining. Implications of labor market operations for resource allocation, wage and price stability, income and employment growth. Wage structures and wage levels. Wage and employment theories and practices. Economic impact of the union. GrC

Industrial Organization, Technological Change, Environmental Control, Urban Problems

- 3601. INDUSTRIAL ORGANIZATION AND ANTITRUST POLICY.** (4 cr, §3651, 5631; not open to economics majors; prereq 1001, 1002 or equiv)
Economic aspects of antitrust and related policies. Relations between market structure and economic efficiency and welfare. Economic origins of monopoly and other restraints on competition. Purposes and effects of antitrust and related legislation. GrC
- 5611. ECONOMICS OF ENVIRONMENTAL CONTROL.** (4 cr; prereq 1001, 1002 or equiv)
Pollution as an external diseconomy; use of taxes and subsidies to reduce pollution. Replenishable resources; maximum sustainable yield; role of the discount rate; taxation to protect yields and minimize harvesting costs. Nonreplenishable resources; controlling rates of depletion. GrC
- 5621. ECONOMICS OF URBAN PROBLEMS.** (4 cr; prereq 1001, 1002 or equiv)
Unemployment and central city decay. Minimum guaranteed income proposals. Low income housing policies. Public policies toward health care. Financing public education. Fiscal problems of cities. Mass transit issues. GrC
- 5623. HOUSING MARKETS AND PUBLIC POLICY.** (4 cr; prereq 1001, 1002 or equiv)
Analysis of housing markets. Market failures, externalities and the case for government intervention. Relative efficiency of particular forms of intervention. GrC
- 5631. INDUSTRIAL ORGANIZATION AND ANTITRUST POLICY.** (4 cr, §3601, §3651; prereq 3101...3131 recommended)
For description, see 3601. GrC
- 5631H. HONORS COURSE: INDUSTRIAL ORGANIZATION AND ANTITRUST POLICY.** (5 cr, §3651H; prereq 3131 or equiv...B avg recommended) GrC
- 5661. ECONOMICS OF LOCATION.** (5 undergrad cr, 3 grad cr; prereq 3131, 1 qtr calculus and § for undergrads...5161 for grads)
Location of economic activity in relation to resources and markets. Effects of changes in transport costs. Problems of urban growth. GrC
- 5671f-5672w-5673s. INDUSTRIAL ORGANIZATION AND GOVERNMENT REGULATION.** (5 cr per qtr [no grad cr]; prereq 3131, Math 3211 or equiv, familiarity with regression analysis, §)
Profit maximization and other theories of business behavior; profits, assets, and barriers to entry; concentration and other aspects of industry structure; performance consequences of alternative industry structures: business pricing practices; determinants of invention and innovation; antitrust, conservation, and direct regulatory activities of federal, state, and local governments. GrC

Monetary Economics and Macroeconomic Policy

- 3701. MONEY AND BANKING.** (4 cr, §3751, §5701, §5721; not open to economics majors; prereq 1001, 1002 or equiv)
Historical development, present characteristics, and economic role of financial institutions. Commercial banking, the Federal Reserve system, and monetary policy. GrC
- 3711. MACROECONOMIC POLICY.** (4 cr, §3731, §5731; not open to economics majors; prereq 1001, 1002 or equiv)
Conflicts among policy objectives of full employment, price stability, desired rate of growth, balance of payments equilibrium, desired mix of public and private sector outputs. Policy instruments: fiscal policy, monetary policy, wage-price guidelines, exchange rate adjustment. GrC
- 5701. MONEY, BANKING, AND MONETARY POLICY.** (4 cr, §3701, §3751, §5721; not open to economics majors; prereq 1001, 1002 or equiv or §)
Economic role of financial institutions; commercial banks, the money supply, and monetary policy. GrC

- 5721. MONEY AND BANKING.** (4 cr, §3701, §3751, §5701; prereq 3102 or equiv)
For description, see 3701. GrC
- 5721H. HONORS COURSE: MONEY AND BANKING.** (5 cr, §3751H; prereq 3102 or equiv...B
avg recommended) GrC
- 5731. MACROECONOMIC POLICY.** (4 cr, §3711, §3731; prereq 3102)
For description, see 3711. GrC
- 5731H. HONORS COURSE: MACROECONOMIC POLICY.** (5 cr, §3731H; prereq 3102...B avg
recommended) GrC

Public Finance

- 3801. ELEMENTS OF PUBLIC FINANCE.** (4 cr, §3851, §5821; not open to economics majors;
prereq 1001, 1002 or equiv)
Tax and expenditure policies, primarily at federal level. Impact of tax structure on the
distribution of income. Evaluation of public programs. Optimal mix of public and private
sector output. GrC
- 5811. STATE AND LOCAL FINANCE.** (4 cr; prereq 3801 or 5821 or equiv)
Problems of state and local finance and proposed solutions; interstate comparisons and
coordination of practices and policies. GrC
- 5821. ELEMENTS OF PUBLIC FINANCE.** (4 cr, §3801, §3851; prereq 3101...3131 recom-
mended)
For description, see 3801. GrC
- 5821H. HONORS COURSE: ELEMENTS OF PUBLIC FINANCE.** (5 cr, §3851H; prereq 3101,
3131...B avg recommended) GrC
- 5831. COST-BENEFIT ANALYSIS.** (4 cr; prereq 3101 or equiv)
Principles for evaluation of benefits and costs of public projects or programs. Definition and
measurement of benefits and costs. Rate of return and rate of discount. Treatment of market
imperfections, risk, and uncertainty. GrC
- 5861f-5862w-5863s. PUBLIC FINANCE.** (5 cr per qtr [no grad cr]; prereq 3102, 3131, §)
Theory of economic policy. Economic effects of taxes, public debt, and public expenditure on
resource allocation, employment, and income distribution; techniques of cost-benefit analysis.
Current problems of fiscal policy and taxation. GrC

Directed Study

- 3960. TOPICS IN ECONOMICS.** (4 cr per qtr; prereq 1001, 1002 [others may be stated in
Class Schedule])
Specific topics listed in *Class Schedule*.
- 3970. DIRECTED STUDIES.** (Cr ar; prereq §)
Guided individual reading or study in areas not available in regular course offerings.
- 5970. DIRECTED STUDIES.** (Cr ar; prereq §)
See 3970.

College of Education

The B.A. degree is available in child psychology, and courses for credit, many of which may be applied toward distribution requirements, are offered in child psychology, physical education, and psychological foundations. See these departmental headings.

English (Engl)

Staff—*Chairman*, George T. Wright, 207 Lind Hall; *Assistant Chairman*, Calvin B. Kendall, 207 Lind Hall; *Director of Graduate Study*, J. Lawrence Mitchell, 205 Lind Hall; *Director of Undergraduate Study*, Arthur Geffen, 204 Lind Hall; *Undergraduate Adviser*, Beverly Atkinson, 204 Lind Hall; *Director of Composition*, Julie Carson, 209 Lind Hall

Course Descriptions—Major Sequences

Professors: Alkon, Anderson (on leave 1976-77), Bowron, Clayton, Firchow (on leave spring 1977), Hurrell, Kwiat, MacLeish, Madden, Moore, O'Brien, Rosendahl, Roth (on leave fall 1976, spring 1977), Steinmann, Stekert (on leave fall 1976), Unger, Wright

Associate Professors: Bales (on leave fall 1976), M. D. Browne, M. Durham (on leave 1976-77), Furia (on leave 1976-77), Garner, Geffen, Griffin, Haley (on leave fall 1976), Hancher, Hirsch, Jemie, Kendall, Leyasmeyer, McNally (on leave fall 1976), McNaron (on leave 1976-77), Mitchell, Reed, Ross, Solotaroff (on leave spring 1977)

Assistant Professors: R. Brown, Carson (on leave fall 1976), L. Durham (on leave 1976-77), Escure, Fergus, Gohlke, Karlow, Luke (on leave fall 1976, winter 1977), McClure, Nelson, Savin, Sugnet

Study of the English language and of British and American literature is both intrinsically and practically valuable. Language is our most distinctive possession. No other creature has man's sophisticated language ability, and the activities that set us apart from other creatures would be impossible without it. Language is our chief means of influencing one another and of understanding our world. The literature of a nation—its fiction, drama, and poetry—is its finest use of language.

B.A. MAJOR SEQUENCE

Required Preparatory Course—One course from 1011—1030

Major Requirements—Twelve courses in English or composition (3 may be on S-N grading), 11 of them at the 3xxx and 5xxx levels. They must include either 3241 or 3242 (A-N only) and one course in each of the following categories:

Study of a literary genre

Intensive study of one or two writers

Literary criticism or English language

Literature of the Middle Ages or the Renaissance

American or English literature of the 17th or 18th century

American or English literature since 1800

A list identifying the requirements that each course fulfills may be obtained in the Undergraduate Studies office, 204 Lind Hall.

Students are encouraged to concentrate the remaining 5 electives within one area of study: for example, in a literary period, a genre (such as poetry, drama, or the novel), criticism, language, composition, creative writing, American literature. With careful planning, these electives within the major can be valuable as preparation for a future career or advanced study. Prospective English majors should consult the departmental adviser, 204 Lind Hall.

The department recommends all kinds of correlative study, but particularly encourages courses in foreign language and literature, including Greek and Latin. The study of foreign literatures is best undertaken in the original languages. English majors, especially those who look forward to graduate study, should begin foreign-language study as soon as possible.

1005. FRESHMAN ENGLISH ELECTIVE STUDIES. (4 cr)

A variety of courses that encourage exploration of ideas in literature or language. Content varies from section to section; course descriptions available before registration in Freshman English office. S-N grading at the instructor's option. GrD

1005H. HONORS COURSE: FRESHMAN ENGLISH ELECTIVE STUDIES. (4 cr per qtr; prereq consent of English undergrad adviser and English honors adviser)

Readings in literary and humanistic topics. GrD

1011—1030. INTRODUCTORY COURSES IN BRITISH AND AMERICAN LITERATURE: SOME MAJOR FIGURES AND THEMES. (4 cr per qtr)

Critical discussion and writing of selected texts (not limited by the examples below); lists in 207 Lind Hall provide specific information about readings. English majors are required to take one of these courses, and may count two toward major requirements. GrD

- 1011. INTRODUCTION TO OLD AND MIDDLE ENGLISH LITERATURE: 650-1485**
Typical readings: *Beowulf*, Chaucer, ballads, *Gawain and the Green Knight*, *Everyman*.
- 1012. INTRODUCTION TO THE LITERATURE OF THE RENAISSANCE: 1485-1660**
Typical authors: More, Sidney, Spenser, Shakespeare, Donne, Milton.
- 1013. INTRODUCTION TO RESTORATION AND 18TH-CENTURY LITERATURE: 1660-1800**
Typical authors: Dryden, Pope, Swift, Johnson, Boswell, Fielding.
- 1014. INTRODUCTION TO ROMANTIC LITERATURE: 1789-1832**
Typical authors: Blake, Wordsworth, Coleridge, Byron, Shelley, Keats.
- 1015. INTRODUCTION TO VICTORIAN LITERATURE: 1832-1901**
Typical authors: Tennyson, Browning, Hopkins, Arnold, Dickens, the Brontës.
- 1016. INTRODUCTION TO AMERICAN LITERATURE**
Selected texts; critical discussion and writing.
- 1017. INTRODUCTION TO MODERN LITERATURE: POETRY**
Selected texts; critical discussion and writing.
- 1018. INTRODUCTION TO MODERN LITERATURE: PROSE FICTION**
Selected texts; critical discussion and writing.
- 1019. INTRODUCTION TO MODERN LITERATURE: DRAMA**
Selected texts; critical discussion and writing.
- 1020 or 1030. INTRODUCTION TO LITERATURE: TOPICS**
Topics specified in the *Class Schedule*.
- 1241. INTRODUCTION TO SHAKESPEARE. (4 cr)**
Lecture survey of Shakespeare's work, treating approximately 10 plays. For students in all colleges of the University. GrD
- 3060. THE JUNIOR-SENIOR SEMINAR. (4 cr per qtr; prereq consent of English undergrad adviser) GrD**
- 3060H. HONORS COURSE: THE JUNIOR-SENIOR SEMINAR. (4 cr per qtr; prereq consent of English undergrad adviser and English honors adviser) GrD**
- 3111, 3112, 3113. SURVEY OF ENGLISH LITERATURE. (4 cr per qtr)**
Historical survey of major figures, movements, and trends in English literature. *3111*: Chaucer to Marvell, including Spenser, Shakespeare, and Donne. *3112*: Milton to Johnson, including Dryden, Swift, and Pope. *3113*: Blake to Yeats, including Wordsworth, Coleridge, Keats, Tennyson, and Browning. GrD
- 3241, 3242. SHAKESPEARE. (4 cr per qtr)**
3241: Plays from Shakespeare's early and middle periods. All sections read *A Midsummer Night's Dream*, *Hamlet*, a history play, and three or four others. *3242*: Plays from the middle and late periods. All sections read *King Lear*, *Macbeth*, *The Tempest*, and three or four others. GrD
- 3247. SPENSER. (4 cr)**
Readings in *The Faerie Queene*, *The Shepheardes Calendar*, *Amoretti*, and other poems. GrD
- 3251, 3252. THE KING JAMES BIBLE AS LITERATURE. (4 cr per qtr)**
3251: The Old Testament and literary tradition. The historical narratives, prophets, psalms, and wisdom literature. *3252*: The Book of Daniel, The Apocrypha, The New Testament as documents in the history of literature. GrD
- 3258. METAPHYSICAL AND CAVALIER POETRY. (4 cr)**
Selected poems by John Donne, Ben Jonson, and their successors in the 17th century (e.g., Herbert and Marvell, Herrick and Suckling). GrD
- 3283. JONATHAN SWIFT. (4 cr) GrD**
- 3351. 20TH-CENTURY BRITISH POETRY. (4 cr) GrD**
- 3362. W. H. AUDEN AND DYLAN THOMAS. (4 cr) GrD**
- 3411, 3412, 3413. AMERICAN LITERATURE. (4 cr per qtr)**
Historical survey of important authors, intellectual currents, movements, conventions, genres, and themes. Lecture course, with wide reading. *3411*: Beginnings through Hawthorne. *3412*: Thoreau and Melville through James. *3413*: Stephen Crane through the 1930's. GrD

Course Descriptions—Major Sequences

- 3455. AMERICAN SHORT STORY.** (4 cr)
Readings from the 18th century to the present. GrD
- 3566. WILLIAM FAULKNER.** (4 cr) GrD
- 3631. SATIRE.** (4 cr)
The satiric tradition in English and American literature; the motives for and uses, techniques, varieties, and results of satire. GrD
- 3635. AUTOBIOGRAPHY.** (4 cr)
Authors such as Boswell, Rousseau, DeQuincey, Gide, Keats, Joyce, Orwell, Plath. GrD
- 3718. PRACTICAL CRITICISM.** (4 cr; prereq two courses in literature)
The practice of literary criticism; class discussion, writing critical papers on works of English and American literature; critical techniques, approaches, and terminology. GrD
- 3851. THE ENGLISH LANGUAGE.** (4 cr, \$5851)
Introduction to the English language including English grammars, phonetics and phonology, British and American dialects, and native-language acquisition. GrA
- 3910 or 3920. TOPICS IN ENGLISH AND AMERICAN LITERATURE.** (4 cr per qtr)
Topics specified in the *Class Schedule*. GrD
- 3910H or 3920H. HONORS COURSE: TOPICS IN ENGLISH AND AMERICAN LITERATURE.**
(4 cr per qtr; prereq consent of English undergrad adviser and English honors adviser)
Topics specified in the *Class Schedule* annually. GrD
- 3940 or 3950. FIGURES IN ENGLISH AND AMERICAN LITERATURE.** (4 cr per qtr)
Figures specified in the *Class Schedule*. GrD
- 3940H or 3950H. HONORS COURSE: FIGURES IN ENGLISH AND AMERICAN LITERATURE.**
(4 cr per qtr; prereq consent of English undergrad adviser and English honors adviser)
Figures specified in the *Class Schedule* annually. GrD
- 3963. HONORS THESIS.** (4 cr; prereq honors candidacy in English and consent of English honors adviser)
- 3970. DIRECTED STUDIES.** (1-15 cr ar; prereq #)
Guided individual reading or study.
- 3980. DIRECTED INSTRUCTION.** (Cr ar; prereq #)
- 5151. 18TH-CENTURY ENGLISH NOVEL.** (4 cr)
Novels by such authors as Defoe, Richardson, Fielding, Smollett, Sterne, and Jane Austen. GrD
- 5152. 19TH-CENTURY ENGLISH NOVEL.** (4 cr)
Novels by such authors as Scott, Dickens, the Brontës, Thackeray, Eliot, and Hardy. GrD
- 5153. 20TH-CENTURY ENGLISH NOVEL.** (4 cr)
Novels by such authors as Conrad, Ford, Joyce, Woolf, Lawrence, Forster, Cary, and Waugh. GrD
- 5171. MEDIEVAL, TUDOR, AND ELIZABETHAN DRAMA.** (4 cr; prereq 3241 or 3242)
Mystery plays, moralities, interludes, academic and court plays; plays of Kyd, Marlowe, Lyly, Greene, and Peele. GrD
- 5172. JACOBAN AND CAROLINE DRAMA.** (4 cr; prereq 3241 or 3242)
Plays of Jonson, Tourneur, Webster, Middleton, Ford, and others. GrD
- 5173. RESTORATION AND 18TH-CENTURY DRAMA.** (4 cr; prereq 3241 or 3242)
The heroic play, tragedy, the comedy of manners, sentimental comedy. GrD
- 5174. DRAMA FROM CA. 1880 TO CA. 1920.** (4 cr)
Beginnings of modern realism, naturalism, and expressionism in English and Continental drama. GrD
- 5175. DRAMA SINCE CA. 1920.** (4 cr)
Chief dramatists, English, American, and Continental. GrD
- 5211. OLD ENGLISH (ANGLO-SAXON).** (5 cr)
The language to 1150. Readings in prose and poetry. The culture of the Anglo-Saxons. GrA
- 5212. READINGS IN OLD ENGLISH PROSE AND VERSE.** (4 cr; prereq 5211)
Critical reading of texts; introduction to versification. GrD
- 5213. BEOWULF.** (4 cr; prereq 5211)
Reading of considerable portions of text. GrD

- 5215. MAJOR TYPES OF MIDDLE ENGLISH LITERATURE.** (4 cr; prereq 5221)
Middle English readings in romance, lyric, allegory, and devotional prose. GrD
- 5216. MAJOR 14TH-CENTURY POETS.** (4 cr; prereq 5221)
Readings in Gower, Langland, and the Pearl-poet. GrD
- 5221. CHAUCER I: THE CANTERBURY TALES.** (5 cr)
Reading *The Canterbury Tales*; Chaucer's language. The course is prerequisite to all others in Middle English literature (5215-5222). GrD
- 5222. CHAUCER II: TROILUS AND CRISEYDE.** (4 cr; prereq 5221 or equiv)
Troilus and selections from the shorter poems. GrD
- 5230. SPECIALIZED STUDIES IN RENAISSANCE LITERATURE AND CULTURE.** (4 cr per qtr)
Topics specified in the *Class Schedule*. GrD
- 5233. TUDOR AND ELIZABETHAN POETRY.** (4 cr)
Such 16th-century poets as Wyatt, Spenser, Sidney, Shakespeare, Greville. GrD
- 5243, 5244. ADVANCED SHAKESPEARE I AND II.** (4 cr per qtr; prereq 3241 and 3242)
Study of a few plays (not strictly sequential). GrD
- 5255, 5256. 17TH-CENTURY PROSE AND POETRY TO 1660.** (4 cr per qtr)
5255: Bacon and Jonson to Burton and Herrick. 5256: Herbert and Browne to Marvell and Felltham. GrD
- 5261. MILTON.** (4 cr)
Paradise Lost, *Samson Agonistes*, minor poems, *Areopagitica*, and often *Paradise Regained*. GrD
- 5280. MAJOR RESTORATION AND 18TH-CENTURY WRITERS.** (4 cr per qtr [12 cr max])
Authors vary, as specified in the *Class Schedule*. GrD
- 5311, 5312, 5313. ROMANTIC WRITERS.** (4 cr per qtr)
One, two, or three writers examined each quarter, as specified in the *Class Schedule*. GrD
- 5331, 5332, 5333. VICTORIAN WRITERS.** (4 cr per qtr)
One, two, or three writers examined each quarter, as specified in the *Class Schedule*. GrD
- 5361. W. B. YEATS.** (4 cr) GrD
- 5363, 5364. JAMES JOYCE.** (4 cr per qtr)
5363: Life and early works, particularly *Dubliners*, *A Portrait of the Artist as a Young Man*, and the first four episodes of *Ulysses*. 5364: *Ulysses* and *Finnegans Wake*. GrD
- 5414. CONTEMPORARY AMERICAN LITERATURE.** (4 cr)
Important authors, intellectual currents, movements, conventions, genres, and themes since 1940. GrD
- 5431, 5432. AMERICAN POETRY.** (4 cr per qtr)
Major figures; historical and intellectual background; poetic theory. 5431: Beginnings to 1890. Typical authors: Taylor, Poe, Whitman, Bryant, Dickinson. 5432: Since 1890. Typical authors: Frost, Stevens, Pound, Eliot, Moore, Williams. GrD
- 5451, 5452. AMERICAN NOVEL.** (4 cr per qtr)
5451: Through the 19th century. Typical authors: Cooper, Hawthorne, Melville, Stowe, Twain, James. 5452: Late 19th and 20th centuries. Typical authors: James, Dreiser, Cather, Hemingway, Fitzgerald, Faulkner. GrD
- 5471. AMERICAN DRAMA.** (4 cr)
American drama from 1914 to present; representative American plays of the 18th, 19th, and early 20th centuries. Emphasis on plays since 1914. GrD
- 5481, 5482, 5483. FOLKLORE.** (4 cr per qtr; prereq for 5482 or 5483 is 5481 or §)
5481: Genres of folklore and the history of folklore scholarship. 5482: Scholars' treatment of diverse folklore genres; literary and popular uses of folklore. 5483: Collection of folklore materials. GrD
- 5486-5487. FOLK SONG.** (4 cr per qtr; prereq for 5487 is 5486 or §)
5486: Basic folk song genres of the Anglo- and Afro-American traditions. 5487: Historical development of Anglo- and Afro-American folk song. GrD
- 5513, 5514. EARLY AMERICAN LITERATURE.** (4 cr per qtr)
5513: To the Revolutionary period. 5514: The Revolutionary period through the first third of the 19th century. GrD
- 5541. EMERSON AND THOREAU.** (4 cr) GrD

Course Descriptions—Major Sequences

- 5543. HAWTHORNE AND MELVILLE.** (4 cr) GrD
- 5545. WHITMAN AND MARK TWAIN.** (4 cr) GrD
- 5547. HENRY JAMES.** (4 cr) GrD
- 5561. T. S. ELIOT.** (4 cr) GrD
- 5591. AMERICAN NATURALISM.** (4 cr)
Origins and development. Typical authors: Howells, Crane, Dreiser, Norris, Wright, Farrell, Steinbeck. GrD
- 5593. BLACK WRITERS OF THE UNITED STATES.** (4 cr)
Prose, poetry, and drama, with emphasis on writers of the 20th century. GrD
- 5596. BLACK POETRY, 1746-1939.** (4 cr. \$Afro 5596)
Phyllis Wheatley, Jupiter Hammon, Frances Harper, Paul Laurence Dunbar, Claude McKay, Countee Cullen, Jean Toomer, James Weldon Johnson, Langston Hughes, and Sterling Brown. GrD
- 5597. CONTEMPORARY BLACK POETRY.** (4 cr. \$Afro 5597)
Afro-American poetry since 1939: Langston Hughes, Melvin Tolson, Robert Hayden, Gwendolyn Brooks, Amiri Baraka, Don Lee, Nikki Giovanni, Sonia Sanchez, and "The Last Poets." GrD
- 5610. 20TH-CENTURY WRITERS.** (4 cr per qtr)
Authors specified in the *Class Schedule*. GrD
- 5632. ROMANTIC TRADITION.** (4 cr)
Writers of the Romantic period and of the 18th or 20th centuries. The evolution of romanticism or its continuation into the 20th century. GrD
- 5651, 5652. TECHNIQUES OF POETRY.** (4 cr per qtr)
5651: Form and sound; meter, stanza, euphony, free verse. 5652: Figurative language, diction, syntax, imagery, metaphor. GrD
- 5671, 5672. THEORY OF THE NOVEL.** (4 cr per qtr)
The novel as a genre. GrD
- 5691, 5692, 5693. FORM AND IDEA IN DRAMATIC LITERATURE.** (4 cr per qtr; 3241 and 3242 recommended)
Dramatic types, in chronological sequence; analytical reading of representative plays. 5691: Tragic and religious drama (classical, medieval, Renaissance, and modern); theories of tragedy. 5692: Comedy (classical, Renaissance, and modern); theories of comedy. 5693: Experimental and nonrealistic drama. GrD
- 5711. CLASSICS OF LITERARY CRITICISM.** (4 cr)
Major works in the classic critical tradition. Aristotle and Coleridge and such authors as Plato, Horace, Longinus, Sidney, Dryden, Johnson, Hume, and Eliot. GrD
- 5712. LITERARY CRITICISM: PLATO TO DRYDEN.** (4 cr)
English translation of basic texts in Roman and Greek criticism; their original meanings and their influence on later tradition. Representative texts of English neoclassical criticism up to 1700. GrD
- 5713. LITERARY CRITICISM: POPE TO ELIOT.** (4 cr; prereq 5712)
English and American criticism from 1700 to the modern period. GrD
- 5714. MODERN AND CONTEMPORARY CRITICAL THEORY.** (4 cr)
Modern and "postmodern" literary criticism—contemporary movements, theory, and practice. GrD
- 5753. LITERATURE AND THE OTHER ARTS.** (4 cr)
Informal, tentative exploration of relationships of literature to drama, music, painting and sculpture, and architecture: how they influence one another and how their aesthetic and social roles are similar and different. Readings in English and American literature and in aesthetic theory; recordings; gallery visits. GrD
- 5815. HISTORY OF ENGLISH LANGUAGE.** (4 cr; prereq 5851 or §)
Development of the English language from Old to Early Modern English: phonology, morphology, and syntax. GrA
- 5821. OLD AND MIDDLE ENGLISH DIALECTS.** (4 cr; prereq 5851 or §)
Dialect differentiation in Old and/or Middle English, based on phonemic-graphemic theory with some attention to generative theory; close textual analysis of dialect examples. GrA
- 5831. AMERICAN ENGLISH.** (4 cr; prereq 5851 or §)
History of the English language in the United States; significant regional variation. GrA

- 5843. AMERICAN SOCIAL DIALECTS.** (4 cr; prereq 5851 or §)
Methods for and results of investigating social and class variation in American English; urban dialects. GrA
- 5851. STRUCTURE OF MODERN ENGLISH.** (4 cr, §3851)
Modern English grammar: phonology, syntax, and semantics; variations and change. GrA
- 5860. STUDIES IN THE ENGLISH LANGUAGE.** (4 cr per qtr; prereq 5851 or §)
Topic (English phonology, syntax, or semantics) specified in the *Class Schedule*. GrA
- 5871. THE LANGUAGE OF LITERATURE.** (4 cr; prereq 5851 or §)
The place of linguistic analysis in a theory of literary criticism; stylistic analysis in Europe and America since 1920; theories of linguistic description relevant to critical analysis; applications to texts in prose and poetry. GrA
- 5876. GRAMMAR AND RHETORIC.** (4 cr)
Relationship between competence in English (described by a grammar—a syntax and semantics—of English) and effective performance (described by a rhetoric of English). GrA
- 5910 or 5920. TOPICS IN ENGLISH AND AMERICAN LITERATURE.** (4 cr per qtr)
Topics specified in the *Class Schedule*. GrD
- 5940 or 5950. FIGURES IN ENGLISH AND AMERICAN LITERATURE.** (4 cr per qtr)
Figures specified in the *Class Schedule*. GrD

COMPOSITION—ENGLISH COMPOSITION (Comp)

Placement in Composition Courses—No student may register for any freshman course in composition or communication without presenting a Memorandum on Placement with assignment, on the basis of tests and other factors, to one of five categories:

Category 1—Students in this category are exempt from the composition or communication requirement for graduation, and they may take any course for which exemption from or completion of the requirement is a prerequisite. They may, if they like, take Comp 1001-1002 or Comm 1001-1002 or 1001-1003.

Categories 2, 3—Students in these categories must take Comp 1001 and an acceptable continuation course (1002, 1003, 1006, 1027, 3085) or Comm 1001-1002 or 1001-1003.

Category 4—Students in this category must take Comp 0001 and then Comp 1002.

Category 5—Students in this category must register for Comp 1001-1002 or Comm 1001-1002 or 1001-1003, pending receipt of information (results of a writing-placement test, for example) necessary to assign them to another category. They may be referred for testing.

Comp 1001-1002 and Comm 1001-1002—Comp 1001-1002 is an 8-credit, 2-quarter sequence offering guided practice in fundamental structural and stylistic features of exposition and argumentation. Comm 1001-1002 and 1001-1003 are 8-credit, 2-quarter sequences directed to speaking as well as to writing.

Concurrent Registration—Concurrent registration in introductory composition and in intermediate or advanced composition courses is not permitted.

Transfer Students—Transfer students with 39 or more credits who have not completed acceptable composition courses must take a writing-placement test before their third quarter at the University. They will then be assigned to one of the first four categories described above. Transfer students who have completed 2 terms of composition at another institution are exempt from the requirement. Students with 6 quarter credits and grades of "A" are also exempt.

Course Descriptions—Major Sequences

Transfer students exempt from the composition or communication requirement for graduation at another college should consult the Freshman English office, 209 Lind Hall, for evaluation.

Foreign Students—Special sections of composition for foreign students only are listed in the *Class Schedule* under English Composition as ESL only. Questions regarding English placement should be directed to the English as a Second Language program, 152 Klæber Court.

No-Credit Writing Laboratory—The Department of English offers a writing laboratory to anyone at the University without charge and without credit. Students wishing individual instruction for a specific writing problem are invited to attend the laboratory, and faculty members in any department may require students to do so. Further information is available in the Freshman English office, 209 Lind Hall.

Changes in the various composition requirements may be made subsequent to the publication of this bulletin. Consult the Freshman English office.

- 0001.** PREPARATORY COMPOSITION.** (No cr, §1001; prereq assignment to Category 4, see placement above...‡ after first day of class)
Remedial course in composition. Students remaining in the course until ready to enter Comp 1002 or Comm 1001 will receive 4 credits. GrA, if not used to meet English composition requirement.
- 1001-1002.** INTRODUCTORY COMPOSITION.** (4 cr per qtr; prereq assignment to Category 1, 2, 3, or 5...Δ for 1002w,s...‡ after first day of class)
Practice in the fundamental structural and stylistic features of exposition and argumentation. Not an introduction to literary studies or to humanities. GrA, if not used to meet English composition requirement.
- 1003.** WRITING PRACTICE.** (2 cr, §1002; prereq assignment to Category 1 or placement test score, Δ)
Writing expository prose; style and the use of evidence in research papers. GrA, if not used to meet English composition requirement.
- 1006, 1007, 1008.** FRESHMAN ENGLISH LITERATURE AND COMPOSITION.** (4 cr per qtr, §1002; prereq Comp 1001 or assignment to Category 1...‡ after first day of class)
Literature as the basis for discussion and writing. Writing expository prose. GrA, if not used to meet English composition requirement.
- 1027.** INTERMEDIATE COMPOSITION.** (4 cr; prereq ††...‡ after first day of class)
Writing under criticism. Mastery of expository forms (e.g., comparison, analysis, cause-effect, evaluation); strategies of tone and diction applied to clear, accurate style. GrA
- 1111—1114. INTRODUCTION TO CREATIVE WRITING**
Structured approach to creative writing for students who have done little writing. Development of techniques, definite assignments.
- 1111-1112. INTRODUCTION TO POETRY WRITING I AND II.** (4 cr per qtr; prereq †† for I...I for II)
Workshop for beginning students. Discussion of student poems, numerous assignments, formal experiments, reading list in second quarter. No manuscript prerequisite. GrD
- 1113-1114. INTRODUCTION TO FICTION WRITING I AND II.** (4 cr per qtr; prereq †† for I...I for II)
Principles of composition in the art of fiction. GrD
- 3030.** TOPICS IN ADVANCED COMPOSITION.** (4 cr per qtr [12 cr max but no topic can be repeated]; prereq ††...‡ after first day of class)
Nonfiction courses such as imaginative writing, description and narration, argumentation, elements of writing, and writer's control of tone. GrA
- 3085. CONFERENCE COURSE IN ADVANCED COMPOSITION.** (1-4 cr; prereq ††, Δ)
Writing conferences for individual students; lectures and discussion sessions in cooperation with students' major departments; special arrangements for IT and CLA students. GrA

**Any student absent the first day will lose her/his place in class.

††Must have fulfilled English composition requirement.

- 3090. SPECIAL PROJECTS IN ADVANCED COMPOSITION.** (2 cr per qtr [6 cr max]; S-N only; prereq ††, Δ)
Writing conferences for individual students, in cooperation with their major departments. GrA
- 3101. INTERMEDIATE FICTION WRITING.** (4 cr; prereq #)
For those with some experience in fiction writing. Discussion of students' works, and set texts, assignments, and experiments. GrD
- 3104. INTERMEDIATE POETRY WRITING.** (4 cr; prereq #)
For those with some experience in poetry writing. Discussion of students' works, and set texts, assignments, and experiments. GrD
- 5101, 5102, 5103. ADVANCED FICTION WRITING.** (4 cr per qtr; S-N only; prereq #)
For students with considerable experience in fiction writing. GrD
- 5104, 5105, 5106. ADVANCED POETRY WRITING.** (4 cr per qtr; S-N only; prereq # for 5104 and 5106)
For students with considerable experience in poetry writing. Winter quarter: study of contemporary poetry texts. GrD
- 5107, 5108. ADVANCED NONFICTION WRITING.** (4 cr per qtr; prereq #)
For students with considerable experience in nonfiction writing. GrA

ENGLISH AS A SECOND LANGUAGE

See Linguistics.

Family Social Science (FSOs)

College of Home Economics

Staff—Chairman, Richard Hey, 204 North Hall

Professors: Gage, Hey, Hill, Jordahl, Konopka, Lamison, Neubeck, D. Olson, Rosenblatt

Associate Professors: Baizerman, Hawkins, Latts

Assistant Professors: Berry, Briskin, Fowler, Henry, Maddock

Instructors and Lecturers: Anderson (lecturer), Dahl, Fuller

A major leading to the B.S. in family relationships is offered in the College of Home Economics. Courses dealing with the family are also available in the Sociology Department and the Institute of Child Development.

- 1001. DYNAMICS OF DATING, COURTSHIP, AND MARRIAGE.** (3 cr, §1002)
Application of principles from behavioral sciences to dating, courtship, mate selection, engagement, mixed marriages, roles of men and women, interaction of marital spouses, marital stability. GrC
- 1002. DYNAMICS OF DATING, COURTSHIP, AND MARRIAGE.** (3 cr, §1001)
See 1001. Designed for engaged or married students, though others may be admitted by special permission. GrC
- 1025. PARENTHOOD.** (4 cr)
Differing concepts of family roles—father, mother, son, daughter, sister, brother. Parent-child and sibling interaction. Effects of parenthood on husband-wife relations. GrC
- 3015. LIFE-STYLES OF EDUCATED AMERICAN WOMEN.** (4 cr; prereq #)
The roles and statuses of American women compared and contrasted with those of men. Women's education: types, influences, uses. Possibilities and needs for change in terms of future objectives. GrC
- 3260. HOME MANAGEMENT PRINCIPLES.** (3 cr; prereq AgEc 1030)
Development of a theoretical systems framework for analysis of family behavior; managerial aspects of behavior; goal setting, planning, and implementing in use of resources. GrC
- 5001. HUMAN SEXUAL BEHAVIOR.** (4 cr; prereq 15 cr in psychology or sociology)
Nature of sexual functioning; sexual development, ethics and attitudes, research problems. GrC

Course Descriptions—Major Sequences

FINNISH

See Scandinavian.

Food Science and Nutrition (FScN)

College of Home Economics
College of Agriculture

Staff—Chairman, Elwood F. Caldwell, 228 Food Science and Nutrition

Professors: Addis, Allen, Busta, Caldwell, Doyle, Gordon, Labuza, Morris, Morse, Packard, Pflug, Swan, Thomas, Zottola

Associate Professors: Breene, Csallany, Epley, Hegarty, McKay, Reineccius, Sander, Snyder, Jr., Tatini, Trammell, Verstraete

Assistant Professors: Billings, Brink, Carruth, Darling, Davis, Mullan, Jr., Thompson, Vickers, Wartheson

Instructors and Lecturers: Asp, Fruin, Goers, Harder (lecturer), Hanson, Hopwood, Johnson, May (lecturer), Meiske, Olson, Tighe, Wolf

Food science and nutrition span the broad range of activities centering around the processing, manufacture, and distribution of food, its preparation and serving in the home and in hotels, restaurants, or institutions, and its nutritional properties as related to health and disease.

1012. FOOD FOR THOUGHT—FOR FOOD. (4 cr)

Nutritional requirements of man. Basis of a balanced diet, effect of processing and storage on food quality and nutritional value, chemical additives and food safety, FDA, food fads, dieting, future world food production problems and answers. Individual 2-week dietary survey. GrB

1212. SCIENTIFIC PRINCIPLES OF FOOD PREPARATION I. (4 cr; prereq 2 qtrs inorganic chemistry)

Composition of foods; interaction and reaction of foods in food preparation procedures; evaluation of food products prepared in laboratory using quality standards; experimental study of foods. GrB

1213. SCIENTIFIC PRINCIPLES OF FOOD PREPARATION II. (3 cr; prereq 1212)

Continuation of 1212. Individual and group projects to illustrate work area layouts and the sequence of tasks related to food preparation. GrB

1600. SOCIOCULTURAL ASPECTS OF NUTRITION. (3 cr)

Food habits of man in historical, social, and cultural perspectives. Influence of food patterns on nutritional status. GrC

Foreign Study (FoSt)

INDIVIDUALIZED STUDY

Coordinator, Donald Myrvik, 201a Wesbrook Hall

Individualized study abroad may count toward a CLA degree as a continuous part of a University program when conducted with college approval (see 0900 and 0910 below). Foreign study may use programs of a foreign university, programs of United States universities abroad, individualized programs incorporating independent study and credit by examination, or combinations of these approaches. Counsel in planning foreign study may be obtained from faculty members and Office for Special Learning Opportunities (OSLO) advisers. A Checklist for Study Abroad is available at OSLO, 201a Wesbrook Hall. Programs should be planned well in advance.

0900. STUDY ABROAD. (No cr; prereq permission of OSLO)

This no-credit registration maintains a student's status in the college. See Foreign Study, Section I.

0910. STUDY ABROAD. (No cr; prereq permission of OSLO)

Same as 0900, except for limitation to part-time programs.

SPAN PROGRAM

Administrative Officer, Theofanis Stavrou, 652 Social Sciences Building; *Executive Secretary*, Karen Wendt, 103 Nolte Center

The Student Project for Amity Among Nations (SPAN) program involves intensive advance study of a foreign culture (including language), a summer abroad to gather information on an individual project, and preparation of a research paper upon return to the campus. Course 5960 is open only to those formally admitted to the program; 3001-3002-3003 is open to others, with permission. Students who have earned credit for both courses, upon evaluation of their language proficiency, may use them to meet the Route II language requirement.

3001-3002-3003. LANGUAGE, CULTURE, AND SOCIETY. (3 cr per qtr; prereq SPAN membership or §)

Intensive study of the language, culture, and society of countries to be visited by SPAN groups; a separate section for each country. For further information, call SPAN office, 103 Nolte Center (373-3793). GrC—6 cr only

5960. SEMINAR FOR FOREIGN STUDY. (12 cr; apply to Prof Stavrou or SPAN office, 103 Nolte Center, 373-3793, in spring 1 yr prior to summer abroad)

Directed field study (SPAN program) in selected foreign countries. Each student studies his or her host country and develops a research project during year preceding summer abroad, and writes comprehensive report upon return.

French and Italian

FRENCH (Fren)

Staff—Chairwoman, Marilyn Schneider, 200a Folwell Hall; *Director of Undergraduate Studies*, F. R. P. Akehurst, 204½ Folwell Hall; *Coordinator of Graduate Studies*, Armand A. Renaud, 224 Folwell Hall

Professors: Lock (on leave 1976-77), Pipa, Renaud, Waldauer

Associate Professors: Akehurst, Bauer (on leave 1976-77), Conley, Mantini, Robinson, Schneider

Assistant Professors: Antal, Caplan, Chastain, O'Donnell, Sivert

Instructor: Preckshot

The study of French embraces the French language, the culture and literature of French-speaking countries, and the interrelationships among these phenomena.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1101-1102-1103; 1104-1105

Major Requirements—Minimum of 45 cr in courses numbered 3001 and above, to include 3015, 3016, 3017, 3104, and three French literature courses numbered 3209 through 3305, one of which must be 3301, 3303, or 3305

D grades in major courses will be accepted if offset by an equivalent number of A or B grades in the major.

Course Descriptions—Major Sequences

Note—Courses 3599, 3601, 3602, 3603, 3604, 3605, 3606, and 3607 may not be used by French majors as part of the major. Majors may not take 3005.

For requirements for a teacher's certificate, see the *College of Education Bulletin*.

Accelerated Sections—Accelerated sections in the 1101-1102-1103 sequence allow qualified students to complete the background requirement and enter advanced courses more rapidly than the usual schedule. These sections, which may award up to 10 extra credits, are composed of students recruited from regular 1101 and 1102 sections.

General Education—3599, 3601, 3602, 3603, 3604, 3605, 3606, and 3607, open to all undergraduates, have no prerequisites and may be applied toward the Route II language requirement. 3005 is designed to enable students to acquire reading proficiency in French in 1 quarter.

1101-1102-1103f,w,s. BEGINNING FRENCH. (5 cr per qtr; students submitting 1 yr high school French may take 1102...those with 2 yrs may take 1103)

Speaking emphasis based on audiolingual approach. Students learn to understand and express ideas in French and to write anything they can say. (See Accelerated Sections above.) GrA

1104f,w,s. INTERMEDIATE FRENCH. (5 cr; prereq 1103 or 3 yrs high school French)

Increased comprehension and control of spoken French; extension of reading and writing skills. Oral discussion of audiovisual materials. GrA

1105f,w,s. INTERMEDIATE FRENCH. (5 cr; prereq 1104)

Cultural and literary readings; progressively less structured discussion leading to free expression of ideas. GrA

3005. READING FRENCH FOR RESEARCH. (5 cr [no cr allowed for students with previous college French; not applicable to CLA language requirement])

Designed to enable students to acquire reading proficiency in French in 1 quarter. GrA

3015. FRENCH CONVERSATION AND COMPOSITION. (5 cr; prereq 1105)

Combines conversational and composition courses. Orthoepic approach, seeking command of French in pronunciation and grammar. Pastiche work, free composition, translation from and into French. GrA

3016. ADVANCED FRENCH COMPOSITION AND CONVERSATION. (5 cr; prereq 3015 or §)

Continuation of 3015. GrA

3017. ADVANCED PROBLEMS IN TRANSLATION. (5 cr; prereq 3016, or superior achievement in 3015 and §)

Composition according to the traditional European method of "thème et version." GrA

3021. PHONETICS AND DICTION. (2 cr; prereq 3017 or §)

Theoretical background in phonetics as applied to French. GrA

3029. ADVANCED CONVERSATION. (2 cr; prereq 3015)

Seeks superior command of oral French. Present-day usage. GrA

3104. INTRODUCTION TO FRENCH LITERARY TEXTS. (5 cr; prereq 1105 or equiv)

Principal literary genres examined through stylistic analyses and literary explications. Critical terminology; literary problems and techniques. Some sections taught in French. GrD

3201. THE FRENCH LITERARY TRADITION. (5 cr; prereq 3104)

Tradition and innovation in French literature; masterpieces and theoretical works. Taught in French. GrD

3209. TOPICS IN MEDIEVAL FRENCH LITERATURE. (5 cr; prereq 3104)

Selected texts. Taught in French. GrD

3219. TOPICS IN 16TH-CENTURY FRENCH LITERATURE. (5 cr; prereq 3104)

Selected texts. Taught in French. GrD

3239. TOPICS IN 17TH-CENTURY FRENCH LITERATURE. (5 cr; prereq 3104)

Selected texts. Taught in French. GrD

3259. TOPICS IN 18TH-CENTURY FRENCH LITERATURE. (5 cr; prereq 3104)

Selected texts. Taught in French. GrD

3269. TOPICS IN 19TH-CENTURY FRENCH LITERATURE. (5 cr; prereq 3104)

Selected texts. Taught in French. GrD

- 3289. TOPICS IN 20TH-CENTURY FRENCH LITERATURE.** (5 cr; prereq 3104)
Selected texts. Taught in French. GrD
- 3301. FRENCH LYRIC POETRY.** (5 cr; prereq 3104)
Selected texts; development of notions of convention and genre. Taught in French. GrD
- 3303. FRENCH THEATRE.** (5 cr; prereq 3104)
Selected texts; development of notions of convention and genre. Taught in French. GrD
- 3305. FRENCH NOVEL.** (5 cr; prereq 3104)
Selected texts; development of notions of convention and genre. Taught in French. GrD
- 3501, 3502. FRENCH CIVILIZATION AND CULTURE.** (5 cr per qtr; prereq 1105)
Systematic study of development of French culture. Oral and written exercises. Taught in French. GrC
- 3503. CINÉMA ET CIVILISATION, 1895 TO PRESENT.** (5 cr; prereq 1105)
Film as center of cultural consciousness, from Lumière to Godard/Gorin. GrC
- 3599. THE CONTEMPORARY SCENE IN FRANCE.** (5 cr; knowledge of French helpful but not necessary)
Exploration of the term culture; French daily life; reduction of ethnocentrism; better understanding of American culture. GrC
- 3601, 3602. FRENCH LITERATURE IN ENGLISH TRANSLATION.** (5 cr per qtr; knowledge of French helpful but not necessary)
Representative works, from medieval times to present—movements, genres, themes. GrD
- 3603. 20TH-CENTURY FRENCH THEATRE IN TRANSLATION.** (5 cr; knowledge of French helpful but not necessary)
Plays of major 20th-century French dramatists: Apollinaire, Artaud, Cocteau, Giraudoux, Claudel, Anouilh, Sartre, Camus, Beckett, Genet, Ionesco, and others. GrD
- 3604. MODERN FRENCH CINEMA: ITS LITERARY AND CULTURAL IMPACT.** (5 cr; knowledge of French helpful but not necessary)
French cinema as an innovative art form; its effects on French arts and modern culture; use of a different aesthetic vocabulary linked with French literary creation, 1920 to 1970. GrC
- 3605. EXISTENTIALISM IN LITERATURE AND THE ARTS OF 20TH-CENTURY FRANCE.** (5 cr; knowledge of French helpful but not necessary)
The central role of the art object in the imagination of the existential writer; the art object in terms of existential aesthetics, as revealed in novels, plays, and essays by existential writers. GrD
- 3606. CLASSICAL DRAMA IN TRANSLATION, THROUGH MOLIÈRE-RACINE.** (5 cr; knowledge of French helpful but not necessary)
Selected plays of classical dramatists: Corneille, Molière, Racine. GrD
- 3607. CLASSICAL COMEDY: MOLIÈRE IN TRANSLATION.** (5 cr; knowledge of French helpful but not necessary)
Recurrent themes and techniques in Molière's works, literary and theatrical; doctrinal constraints of the period and the material conditions of the theatre. GrD
- 3701. THE DEVELOPMENT OF THE FRENCH LANGUAGE.** (5 cr; prereq 3015 or §)
Origins and development of the French language. Selected texts. Present stage and development. GrA
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq undergrad, Δ)
Guided individual reading or study.
- 3980. DIRECTED INSTRUCTION.** (1-5 cr per qtr; prereq 3015, § and Δ)
- 5012. STYLISTICS.** (5 cr; prereq 3017 or §) Antal and staff
Structural dimensions of literary works, principally as they relate to language. A variety of genres and periods. Taught in French. GrD
- 5013. INTRODUCTION TO FORMAL ANALYSIS.** (5 cr; prereq 3209 or above) Lock and staff
Literary texts from Middle Ages to 20th century. How language, themes, and structure analyzed as a whole, in depth, lead to appreciation of beauty and significance of literary texts. GrD
- 5017. COMPOSITION ET STYLISTIQUE.** (5 cr; prereq 3017 or §) Caplan
Translation, imitation, and composition of fiction and nonfiction, prose and poetry using English and French texts. GrA
- 5207. OLD FRENCH.** (5 cr; prereq 3209 or above or §) Akehurst
Preparation for reading medieval French texts in the original. GrA

Course Descriptions—Major Sequences

- 5219. HUMANISM AND ITALIANISM IN THE LITERATURE OF THE 16TH CENTURY.** (5 cr; prereq 3209 or above) Renaud, Pipa
Aspects of Italian civilization of the 14th-16th centuries that led to the French Renaissance and humanistic trends. Principally French and Italian literary works; some paraliterary works. GrD
- 5261. ROMANTIC POETRY.** (5 cr; prereq 3209 or above) Sivert
The great romantic poets. Their innovations and contributions to the evolution of modern poetry. GrD
- 5269. FRENCH ROMANTICISM.** (5 cr; prereq 3209 or above) Lock
Survey of principal theoretical and literary works. GrD
- 5271. PROSE POETRY OF THE 19TH CENTURY.** (5 cr; prereq 3209 or above) Robinson
Baudelaire, Rimbaud, and Lautréamont. GrD
- 5275. HUYSMANS AND VILLIERS DE L'ISLE-ADAM: THE REACTION.** (5 cr; prereq 3209 or above) Sivert
Late 19th-century literature: the reaction to realism and naturalism in the works of Huysmans, Villiers de l'Isle-Adam, and others. GrD
- 5281. EARLY 20TH-CENTURY POETRY: APOLLINAIRE, BRETON, ELUARD.** (5 cr; prereq 3209 or above) Preckshot
Poetry as it emerged out of the "experiments" undertaken at the end of the 19th century that led to Apollinaire's concept of poetry, and to the surrealist movement. GrD
- 5289. TOPICS IN AFRICAN LITERATURE.** (5 cr; prereq 3209 or above) Caplan, Renaud
African values and views of reality compared with "European" values and views, through the analysis of literary creations. Comparison with other arts. GrD
- 5301. MEDIEVAL LYRIC POETRY.** (5 cr; prereq 5207 or §) Akehurst
Origins, form, and content of lyric poetry from the "trouvères" to Villon. GrD
- 5303. MEDIEVAL FRENCH DRAMA.** (5 cr; prereq 5207 or §) Akehurst
Medieval French theatre from its origins to the Renaissance. GrD
- 5307. MEDIEVAL FRENCH ALLEGORY AND SATIRE.** (5 cr; prereq 5207 or §) Akehurst
Satire and allegory in the French *Fabliaux*, the *Roman de Renart*, and the *Roman de la rose*. GrD
- 5311. RENAISSANCE POETRY BEFORE THE PLEIÁDE.** (5 cr; prereq 3209 or above) Conley, Renaud
The "Grands Rhétoriciens," Lemaire, Marot, Saint-Gelays, Louise Labé, and others; elegy, emblem, "blason," and "art poétique." GrD
- 5312. PLEIÁDE AND BAROQUE.** (5 cr; prereq 3209 or above) Conley, Renaud
Ronsard, Du Bellay, and other poets of the Pleiade; the first baroque poets, including Sponde, Du Bartas, Desportes, Chassignet. GrD
- 5331. FRENCH POETRY FROM D'AUBIGNÉ TO LA FONTAINE.** (5 cr; prereq 3209 or above) Renaud
Movement from baroque to classicism, studied in the great verse creations of the 17th century. GrD
- 5335. THE NOVEL OF THE 17TH CENTURY.** (5 cr; prereq 3209 or above) Renaud GrD
- 5339. SHORT STORIES OF THE 16TH AND 17TH CENTURIES.** (5 cr; prereq 3209 or above) Renaud, Conley
Narrative techniques and variants of short stories in France in 16th and 17th centuries. GrD
- 5354. DRAMA OF THE 18TH CENTURY.** (5 cr; prereq 3209 or above) Waldauer, Caplan
Tragedy, drama, comedy (emphasis on comedy). GrD
- 5355. THE NOVEL OF THE 18TH CENTURY.** (5 cr; prereq 3209 or above) Waldauer
Emphasis on novels of Prévost, Marivaux, Rousseau, Diderot, and Laclos. GrD
- 5358. GNOMIC LITERATURE OF THE 17TH AND 18TH CENTURIES.** (5 cr; prereq 3209 or above)
Emergence of the genre in antiquity, the Middle Ages, and the Renaissance; great realizations such as those of La Rochefoucauld, La Bruyère, Chamfort, Vauvenargues. GrD
- 5359. VOYAGERS AND PHILOSOPHES IN THE 18TH CENTURY.** (5 cr; prereq 3209 or above) Caplan
The 18th-century view of "man" and its formation in voyage literature. GrD
- 5367. 19TH-CENTURY DRAMA: MUSSET.** (5 cr; prereq 3209 or above) Sivert and staff GrD

5368. **SHORT STORIES OF THE 19TH CENTURY.** (5 cr; prereq 3209 or above) Lock and staff
From Charles Nodier to Anatole France; particular attention to Daudet and Villiers de l'Isle-Adam. (See 5467 for Flaubert and Maupassant.) GrD
5380. **THE FRENCH NOVEL IN THE 20TH CENTURY.** (5 cr per qtr; prereq 3209 or above) Staff
Trends in the novel in France during the 20th century. GrD
5381. **CLAUDEL.** (5 cr; prereq 3209 or above)
The poetry of the great 20th-century Catholic poet. GrD
5382. **VALÉRY AND THE HERITAGE OF SYMBOLISM.** (5 cr; prereq 3209 or above) Preckshot
The poetry of Valéry; sources of his concept of poetry. GrD
5383. **20TH-CENTURY FRENCH DRAMA TO EXISTENTIALISM.** (5 cr; prereq 3209 or above)
Bauer, O'Donnell
Main trends, themes, and dramatic theories from symbolist and surrealist drama to existentialism. GrD
5384. **20TH-CENTURY FRENCH DRAMA: EXISTENTIALISM TO THE PRESENT.** (5 cr; prereq 3209 or above) Bauer
Anouilh, Sartre, Camus, Genet, Ionesco, Beckett, Arrabal, and less-recognized dramatists of the last decade. GrD
5385. **ART AND THE ARTIST IN THE CONTEMPORARY NOVEL.** (5 cr; prereq 3209 or above)
Bauer
The artist figure; role of the artist in the contemporary French novel. GrD
5391. **RECENT FRENCH POETRY.** (5 cr; prereq 3209 or above) Preckshot GrD
5396. **EXISTENTIAL NOVEL.** (5 cr; prereq 3209 or above) Bauer
Novelists since 1930 concerned with what Malraux calls the "human condition": Malraux, Céline, Sartre, Camus, Blanchot, and Beckett. GrD
5397. **LE NOUVEAU ROMAN.** (5 cr; prereq 3209 or above) O'Donnell
Last existentialist novels and innovations of Nathalie Sarraute, Alain Robbe-Grillet, Michel Butor, and others. GrD
5398. **FRENCH FICTION OF THE LAST DECADE.** (5 cr; prereq 3209 or above) O'Donnell GrD
5411. **SCEVE.** (5 cr; prereq 3209 or above) Renaud
Poetry as knowledge and communication. The quest for self and reality through the complex concept of love. GrD
5415. **RABELAIS.** (5 cr; prereq 3209 or above) Renaud, Conley
Gargantua and *Pantagruel* in original text. GrD
5418. **MONTAIGNE.** (5 cr; prereq 3209 or above) Conley, Renaud
The *Essais*, partially in the light of the *Journal de Voyage*. GrD
5434. **BAROQUE TRAGEDY: CORNEILLE.** (5 cr; prereq 3209 or above) Renaud
Plays as unique creations in the perspective of the aesthetics of the time. GrD
5438. **PASCAL.** (5 cr; prereq 3209 or above) Antal
The literary originality of the *Provinciales*; major attention to *Les Pensées*. GrD
5443. **CLASSICAL COMEDY: MOLIÈRE.** (5 cr; prereq 3209 or above) Renaud GrD
5444. **CLASSICAL TRAGEDY: RACINE.** (5 cr; prereq 3209 or above) Renaud GrD
5457. **ROUSSEAU.** (5 cr; prereq 3209 or above) Waldauer, Caplan GrD
5458. **VOLTAIRE.** (5 cr; prereq 3209 or above) Waldauer GrD
5459. **DIDEROT.** (5 cr; prereq 3209 or above) Waldauer GrD
5461. **BAUDELAIRE.** (5 cr; prereq 3209 or above) Robinson GrD
5462. **RIMBAUD.** (5 cr; prereq 3209 or above) Robinson GrD
5463. **HUGO.** (5 cr; prereq 3209 or above) Sivert GrD
5465. **STENDHAL.** (5 cr; prereq 3209 or above) Lock GrD
5466. **BALZAC.** (5 cr; prereq 3209 or above) Lock GrD
5467. **FLAUBERT, MAUPASSANT, AND NARRATIVE TECHNIQUES.** (5 cr; prereq 3209 or above) Lock GrD
5471. **MALLARMÉ.** (5 cr; prereq 3209 or above) Robinson GrD
5475. **ZOLA, GONCOURT, AND THE NATURALISTIC NOVEL.** (5 cr; prereq 3209 or above)
Lock GrD

Course Descriptions—Major Sequences

- 5486-5487. PROUST.** (5 cr per qtr; prereq 3209 or above) Lock GrD
- 5489. SARTRE.** (5 cr; prereq 3209 or above) Bauer
Creative works and critical essays. GrD
- 5509. ITALIAN AVATARS OF FRENCH MEDIEVAL EPICS: BOIARDO, ARIOSTO, TASSO.** (5 cr; prereq at least one literature course in either French or Italian) Akehurst, Schneider
Selected readings in French epics; Boiardo's *Orlando Innamorato*, Ariosto's *Orlando Furioso*, Tasso's *Gerusalemme Liberata*. Other works examined briefly. Taught in English. GrD
- 5511. IDEALISM IN THE POETRY OF ITALY AND FRANCE: DANTE TO D'AUBIGNÉ.** (5 cr; prereq at least one literature course from one of the countries being studied or *) Renaud and staff
From Dante's transmutation of "l'amour courtois" through Petrarch, Bembo, Tansillo, Scève, Ronsard, Du Bellay, Desportes, d'Aubigné, and others: poetic uses of love and the beloved; concepts of poetry and reality. Taught in English. GrD
- 5519. THE CONTINENTAL RENAISSANCE IN LITERATURE.** (5 cr; prereq at least one 3xxx or 5xxx course in Italian, Spanish, French, or Portuguese literature, *) Renaud and others
Origin and dissemination of ideas, attitudes, themes, and some literary genres in Italy, Spain, Portugal, and France. Taught in English. GrD
- 5523. INTERRELATION OF DRAMATIC LITERATURE OF FRANCE, ITALY, AND SPAIN IN THE 16TH AND 17TH CENTURIES.** (5 cr; prereq at least one course in the literature of one of the countries studied or *) Renaud and staff
Theatre of antiquity—revival and rejuvenation in Italy, spread to and from Spain and France, return to Italy and France. Taught in English. GrD
- 5531. THE BAROQUE IN EUROPEAN LITERATURE: FRANCE AND ITALY.** (5 cr; prereq at least one 3xxx or 5xxx course in the literature of France or Italy) Renaud and staff
The spread of the baroque in literature through Europe. Movement from Italy, changing but rooted in a particular view of the world. Taught in English. (See also Span 5533, The Baroque in European Literature: Spain.) GrD
- 5538. NOVELLES, NOVELAS, AND NOUVELLES: FROM BOCCACCIO TO CERVANTES AND MME. DE LA FAYETTE.** (5 cr; prereq at least one 3xxx or 5xxx course in French, Spanish, or Italian literature, *) Renaud and staff
Boccaccio's tales; evolution of narrative techniques in Italy, Spain, and France. The "first modern novel," *La Princesse de Cleves*, and elaboration of the realistic novel. Taught in English. GrD
- 5539. NARRATIVE TECHNIQUES AND THEMES IN LITERATURE OF FRANCE AND SPAIN FROM THE "LIBRO DE BUEN AMOR" TO "GIL BLAS DE SANTILLANE."** (5 cr; prereq at least one 3xxx or 5xxx course in French or Spanish literature, *) Renaud and staff
Realistic trends, including the picaresque, in literature of France and Spain between 14th and 18th centuries; special attention to 16th and 17th centuries. Taught in English. GrD
- 5561. 19TH-CENTURY POETIC THEORY.** (5 cr; prereq 3209 or above) Robinson
Poetic theory concerning language, versification, and aesthetics of the 19th century. GrD
- 5568. FRENCH SYMBOLISM AND ITALIAN HERMETICISM.** (5 cr; prereq at least one pertinent course either in French or Italian literature or *) Pipa, Robinson
Poetry of Rimbaud, Mallarmé, Valéry, Campana, Ungaretti, and Montale. GrD
- 5569. NATURALISM IN THE FRENCH AND ITALIAN NARRATIVE.** (5 cr; prereq at least one pertinent course either in French or Italian literature or *) Lock, Pipa
Flaubert, Maupassant, Zola, and other naturalist writers; Verga, Deledda, Fogazzaro, and others. GrD
- 5588. ASPECTS OF CONTEMPORARY CRITICISM.** (5 cr, §CLit 5588; prereq 3209 or above for French grad cr; students who do not read French must have reading knowledge of Russian, German, Italian, or Spanish) Bauer and staff
Major aspects of criticism in contemporary France. Taught in English. GrD
- 5591. DADA AND SURREALISM.** (5 cr; prereq 3209 or above) Bauer
Origins, activities, and literary accomplishments of French Dada and surrealism. GrD
- 5701-5702. STRUCTURE OF MODERN FRENCH: PHONOLOGY, MORPHOLOGY, SYNTAX.** (5 cr per qtr; prereq 3015 or *) Mantini
Application of linguistics to study of present-day French. GrA
- 5900. TOPICS IN FRENCH LITERATURE.** (3-5 cr per qtr [15 cr max]; prereq 3209 or above) GrD

ITALIAN (Ital)

Staff—*Chairwoman*, Marilyn Schneider, 200a Folwell Hall

Professor: Pipa

Associate Professors: Mantini, Schneider

Italian studies begin with the language of Italy and ultimately center on the country's literature, from the early love sonnets through Dante to Pirandello and contemporary works. A broad cultural framework is provided through courses on civilization, literary tradition, and cross-disciplinary studies.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1101-1102-1103; 1104-1105 or, if eligible, 3041

Major Requirements—Minimum of 45 cr in courses numbered 3001 and above (excluding 3041), to include 3015, 3031, 3045, and 30 cr of Italian literature and/or civilization

D grades in major courses will be accepted if offset by an equivalent number of A or B grades in the major.

Note—Courses 3304, 3555, 3606, 5559, 5601, 5602, 5603, and 5609 may not be used by Italian majors as part of the major.

Accelerated Sections—Accelerated sections in the 1102-1103-1104 sequence allow qualified students to complete part of the background requirement in 2 quarters and to enter advanced courses rapidly. These sections are composed of students from 1101 sections.

General Education—Nonspecialist students may profit from the group of literature and civilization courses in English (3304, 3555, 3606, 5559, 5601, 5602, 5603, and 5609), which may be applied toward the Route II language requirement. They may acquire basic linguistic proficiency either in 1101-1102-1103 or in a 1-quarter accelerated course, 3041.

1101-1102-1103. BEGINNING ITALIAN. (5 cr per qtr)

Speaking, reading, and cultural objectives based on audiolingual approach. Students learn to understand and express fundamental ideas, to write anything they can say, and to master fundamental structures of the language. Includes audiovisual aids. (See Accelerated Sections above.) GrA

1110. COMPUTERIZED BEGINNING ITALIAN. (5 cr per qtr [with \$, 15 cr max in minimum of 2 qtrs]; prereq prior language study, \$; may not be used toward CLA language requirement)

Structures of first-year Italian self-taught and self-drilled through use of computer. Meetings with instructor for testing. Language tapes provide oral practice. GrA

1104. INTERMEDIATE ITALIAN. (5 cr; prereq 1103 or equiv)

Consolidation of basic structures and development of oral fluency through readings and discussions. GrA

1105. INTERMEDIATE ITALIAN. (5 cr; prereq 1104)

Literary and cultural readings, leading to introductory knowledge of Italian literature and civilization. GrA

3015. INTERMEDIATE ITALIAN CONVERSATION AND COMPOSITION. (5 cr; prereq 1105, or 1104 with "A" and recommendation of instructor)

Practice in pronunciation and grammar. Structured and improvised conversation and discussions. GrA

3031. WRITING TECHNIQUES AND GRAMMAR REVIEW. (5 cr; prereq 3015 or \$)

Techniques of translation. Discussion in Italian of problems of expression and composition; review of grammar. GrA

Course Descriptions—Major Sequences

- 3041. INTENSIVE ITALIAN FOR ROMANCE LANGUAGE MAJORS AND MINORS.** (5 cr; prereq 2 yrs of Romance language study or *)
Material of first-year Italian covered through comparative study of French, Spanish, and Italian grammar; oral and reading practice. Completion of course with A or B satisfies Graduate School language requirement. GrA
- 3045. ADVANCED ITALIAN CONVERSATION AND COMPOSITION.** (5 cr; prereq 3015 or *)
Superior command of oral Italian; present-day usage; may include study and performance of a contemporary play. GrA
- 3104. ITALIAN STYLISTICS.** (5 cr; prereq 3015)
Principal literary genres examined through stylistic analyses and literary explications. Critical terminology; literary problems and techniques. Taught in Italian. GrD
- 3201. ITALIAN LITERARY TRADITION.** (5 cr; prereq 3015 or *)
Tradition and innovation in Italian literature; specific masterpieces and theoretical works. Taught in Italian. GrD
- 3209. MEDIEVAL ITALIAN LITERATURE.** (5 cr; prereq 3015)
Selected texts. Taught in Italian. GrD
- 3219. RENAISSANCE AND POST-RENAISSANCE ITALIAN LITERATURE.** (5 cr; prereq 3015)
Selected texts. Taught in Italian. GrD
- 3289. MODERN ITALIAN LITERATURE.** (5 cr; prereq 3015)
Selected texts. Taught in Italian. GrD
- 3301. ITALIAN LYRIC POETRY.** (5 cr; prereq 3015)
Selected texts; development of notions of convention and genre. Taught in Italian. GrD
- 3303. ITALIAN DRAMA.** (5 cr; prereq 3015)
Selected texts; development of notions of convention and genre. Taught in Italian. GrD
- 3304. MARINETTI AND FUTURISM.** (5 cr; knowledge of Italian helpful but not necessary)
Futurism in aspects of poetry, figurative arts, and music; impact on European culture during the first half of the 20th century. Taught in English. GrD
- 3305. ITALIAN NOVEL.** (5 cr; prereq 3015)
Selected texts; development of notions of convention and genre. Taught in Italian. GrD
- 3501. ITALIAN CIVILIZATION AND CULTURE.** (5 cr; prereq 1105)
Italian culture from the beginning to the Risorgimento. Taught in Italian. GrC
- 3502. MODERN ITALIAN CIVILIZATION AND CULTURE.** (5 cr; prereq 1105)
Taught in Italian. GrC
- 3555. ITALIAN CULTURE IN THE MIDDLE AGES AND THE RENAISSANCE.** (5 cr; knowledge of Italian helpful but not necessary)
Italian culture as it influenced Western civilization. Cultural aspects of politics, religion, philosophy, science, music, the arts. Taught in English. GrC
- 3606. STUDIES IN ITALIAN CINEMA.** (5 cr; prereq knowledge of Italian helpful but not necessary)
Taught in English. GrD
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq undergrad, Δ)
Guided individual reading or study.
- 5042. INTENSIVE READING OF MODERN ITALIAN NARRATIVE LITERATURE.** (5 cr; prereq 3015 or 3041 or *) Pipa, Schneider
Twentieth-century authors analyzed from linguistic and literary points of view, to achieve high level of reading competency and understanding of contemporary Italian literary scene. Taught in Italian. GrA
- 5321. CHIVALRIC POETRY: BOIARDO, ARIOSTO, TASSO.** (5 cr; prereq 3015) Staff GrD
- 5328. RENAISSANCE PROSE WRITERS: MACHIAVELLI, CASTIGLIONE.** (5 cr; prereq 3015)
Staff GrD
- 5331. MODERN POETRY.** (5 cr; prereq 3015) Pipa, Schneider
The Crepuscular and hermetic poets from Gozzano to Ungaretti, Montale, Saba, and Quasimodo. GrD
- 5337. MANZONI AND THE 19TH-CENTURY NOVEL.** (5 cr; prereq 3015) Pipa, Schneider
I promessi sposi and other novels. GrD
- 5384. MODERN DRAMA.** (5 cr; prereq 3015) Pipa, Schneider
Dramatists such as Pirandello, Ugo Betti, Diego Fabbrì, and Eduardo de Filippo; evolution of modern drama. GrD

- 5385. MODERN NARRATIVE.** (5 cr; prereq 3015) Pipa, Schneider
Twentieth-century authors such as Svevo, Moravia, Pavese, and Vittorini; evolution of the modern novel and novella. GrD
- 5401-5402-5403. DANTE.** (5 cr per qtr; prereq 3015) Pipa
The *Divina Commedia*; Dante's minor works. GrD
- 5411. PETRARCH.** (5 cr; prereq 3015) Staff GrD
- 5418. BOCCACCIO.** (5 cr; prereq 3015) Staff GrD
- 5461. LEOPARDI AND 19TH-CENTURY POETRY.** (5 cr; prereq 3015) Pipa, Schneider
Leopardi's poetry; Carducci, Pascoli, and D'Annunzio. GrD
- 5559. THEORIES OF LITERATURE AND CULTURE: VICO, CROCE, GRAMSCI.** (5 cr; prereq §) Pipa
Texts on theories of literature and culture by Vico, Croce, and Gramsci. Taught in English GrC
- 5568. FRENCH SYMBOLISM AND ITALIAN HERMETICISM.** (5 cr; prereq at least one pertinent course in French or Italian literature or §) Pipa, Robinson
Poetry of Rimbaud, Mallarmé, Valéry, Compagnon, Ungaretti, and Montale. GrD
- 5569. NATURALISM IN THE FRENCH AND ITALIAN NARRATIVE.** (5 cr; prereq at least one pertinent course in French or Italian literature or §) Pipa, Lock
Flaubert, Maupassant, Zola, and other naturalist writers; Verga, Deledda, Fogazzaro, and others. GrD
- 5583. MARXISM AND EXISTENTIALISM IN ITALIAN NARRATIVE AND DRAMA.** (5 cr; prereq 3015 or §) Pipa
Contemporary works hinging on the philosophies of Marxism and existentialism. GrD
- 5601, 5602, 5603. ITALIAN LITERATURE IN ENGLISH TRANSLATION.** (5 cr per qtr) Pipa, Schneider
Movements, genres, or themes of representative works from medieval times to present. GrD
- 5609. DANTE (IN ENGLISH).** (5 cr; prereq §) Staff GrD
- 5701-5702. ITALIAN LANGUAGE.** (5 cr per qtr; prereq §) Mantini GrA
- 5900. TOPICS IN ITALIAN LITERATURE.** (5 cr per qtr; prereq 3209 or above) Staff GrD

Genetics and Cell Biology (GCB)

College of Biological Sciences

Staff—Head, Frederick Forro, Jr., 248a BioScience Center; **Director of Undergraduate Studies,** Forro; **Director of Graduate Studies in Cell Biology,** Forro; **Director of Graduate Studies in Genetics,** D. Peter Snustad

Regents' Professor: Comstock

Professors: Anderson, Caldecott, Enfield, Forro, Herman, Hooper (on leave fall 1976), Reed, Rosenberg, Rubenstein, Snustad, Snyder, Woodward

Associate Professors: Cunningham, Desnick, Fan (on leave 1976-77), Sheppard

Assistant Professors: Deppe, Simmons

Genetics is the study of inheritance, including molecular mechanisms of gene action, human genetics, and the behavior of genes in populations of organisms.

Cell biology is the study of the structure, function, and replication of cells at the microscopic and molecular level.

General Education—Courses especially appropriate for nonmajors include Biol 1101, 5602; GCB 3002, 3022, 3201.

- 3002s. HUMAN GENETICS, SOCIAL AFFAIRS.** (3 cr [4 cr with term paper], §3022, §Biol 1101, §Biol 3032; for students in programs not directly related to biological sciences) Anderson, Reed
Human genetics; study of individuals, families, populations, and races with respect to differences in intelligence, behavior, disease, and other matters of social concern. GrB if 4 cr

Course Descriptions—Major Sequences

- 3022f,w,s, su. GENETICS.** (4 cr; primarily designed for students other than CBS majors and CLA biology majors; prereq Biol 1011)
Mechanisms of heredity, implications for biological populations, applications to practical problems. GrB
- 3201s. MOLECULAR BIOLOGY FOR ENGINEERS AND PHYSICAL SCIENTISTS.** (3 cr [4 cr with term paper]; not open to biology majors; prereq 2 qtrs chemistry, Math 1231 or 1331 or 1621 or §) Rubenstein
Modern molecular biology; principles of biological structures and mechanisms of function at the macromolecular and cellular levels of organization.
- 3960s. RESEARCH TOPICS.** (1 cr; S-N only; for biology majors; prereq Biol 3032)
Discussions of faculty research.
- 3970f,w,s, su. INDEPENDENT STUDY.** (Cr ar; prereq § and Δ)
Guided individual reading or study.
- 3990f,w,s, su. LABORATORY RESEARCH.** (Cr ar; prereq § and Δ)
Individual projects on selected topics or problems.
- 5022f,w,s, su. GENETICS.** (3 cr, §3022, §Biol 3032; not open to grad students in genetics)
Mechanisms of heredity, implications for biological populations; applications to practical problems.
- 5030f,w,s. LABORATORY: GENETICS.** (2 cr; prereq 3022 or 5022 or Biol 3032 or §)
Investigative approaches to analysis of genetic problems. Focus on a given organism or related group of organisms may differ from quarter to quarter.
- 5031f. INTERMEDIATE GENETICS I.** (3 cr; prereq 3022 or Biol 3032 and BioC 5002 or 5752 (formerly BioC 5742) or §)
Mechanics of inheritance. Comparative organization of genetic material in procaryotic and eucaryotic organisms. Mutation, complementation, and recombination as operational criteria for genetic analysis.
- 5032w. INTERMEDIATE GENETICS II.** (3 cr; prereq 5031)
Action of the gene in molecular, cellular, and organismal development. Mechanisms of storage of genetic information, modes of information transfer, and mechanisms of regulating these processes in various biological systems.
- 5033s. INTERMEDIATE GENETICS III.** (3 cr; prereq 3022 or Biol 3032, course in genetics, course in biometry or statistics, or §) Enfield
Genetic variation in quantitative traits, with special attention to fitness. Causes of change of equilibria in gene frequencies, heterosis and inbreeding depression, consequences of natural and artificial selection.
- 5042f. POPULATION, QUANTITATIVE GENETICS.** (3 cr; prereq 5033...Stat 5301 recommended) Comstock
Selection with reference to population changes in gene frequencies and means of quantitative characters. Information needed to predict effects of selection and related research. Logical analysis.
- 5043s. HUMAN GENETICS.** (3 cr; prereq 3022 or Biol 3032 or §) Anderson, Reed
Inherited characters in man, particularly in relation to medicine; relationships of genetics in marriage and social conditions.
- 5044w. METHODS IN HUMAN GENETICS.** (3 cr; prereq 5043, PubH 5450, and §) Anderson
Methods for research in human genetics. Importance of appropriate statistical techniques. Genetic concepts in exploring new problems. Individual study of current problems.
- 5045s. MOLECULAR PRINCIPLES OF BEHAVIOR.** (3 cr; prereq BioC 5002 or §) Sheppard
Relationships between biochemistry and behavior; diseases of human behavior—the psychoses, alcoholism, epilepsy. Simple biological systems used to study behavior. GrB
- 5046f. MOLECULAR BIOLOGY OF GENETIC DISEASES.** (3 cr; prereq 5031, 5043, BioC 5002 or equiv, Biol 3032 or equiv or §) Desnick
Basic genetic, biochemical, and pathologic principles of inherited human metabolic disorders. GrB
- 5051w. INTERMEDIATE CELL BIOLOGY.** (3 cr; prereq §...introductory biochemistry and molecular genetics recommended) Cunningham, Hooper, Johnson
Structure, replication, and function of general and specialized cell types at the microscopic and molecular level. Cell membranes, organelles, and macromolecular aggregates; cell division, secretion, regulation of macromolecule synthesis, cellular differentiation.
- 5052s. QUANTITATIVE TECHNIQUES, CELL BIOLOGY.** (4 cr; prereq §...calculus, introductory cellular or molecular biology, biochemistry recommended) Rosenberg, Rubenstein
Use and detection of radioisotopes; analytical and preparative ultracentrifugation, chromatography, spectroscopy, and electron microscopy; tissue culture and subcellular particle fractionation.

- 5063s. THEORETICAL POPULATION BIOLOGY.** (3 cr; prereq 5033 or ♯, familiarity with differential and integral calculus) Simmons
Genetic theory as related to problems of natural populations.
- 5082f. MEMBRANES AND INTERFACES.** (3 cr; prereq ♯) Rosenberg
Thermodynamics, statistical mechanics, electrical properties, and experimental systems for the study of interfaces. Isolation, dynamic properties, chemistry, and model systems of biological membranes, cell surface and contact relations.

Geography (Geog)

Staff—Chairman, Richard H. Skaggs, 414 Social Sciences Building; *Director of Undergraduate Studies,* Skaggs

Professors: J. Adams, Barrett, Borchert, Hart, Hsu, Lukermann, Mather, Porter, Schwartzberg, Tuan, Webb

Associate Professors: R. Adams, Brown, Rice, Skaggs

Assistant Professors: Barton, Gersmehl, Scott, Squires

Geography emphasizes the importance of relative location of place and event in the study of the character of regions, the relations between human activities and environment, and the processes through which social and physical changes occur. Its approach and methods are both scientific and humanistic.

Majors in geography may find professional careers in teaching, government service, planning, and industry. The department offers opportunities for applied specializations and concentrations in a variety of subfields for majors and nonmajors.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Two courses selected from 1301 or 1302, 1401, 3001

Major Requirements—Minimum of 32 cr with grades of C or better in courses numbered above 3001, to include: one regional 5xxx course, one topical course, one course in the history and philosophy of geography, and either 3511 or 3531

Majors are urged to take a field course such as 5376 or 5701. They may participate in undergraduate seminars (3950), the subjects of which vary.

Geography majors are strongly advised to meet regularly with their advisers to work out rational, coherent, and focused programs.

General Education—Courses 1301, 1302, and 1401 deal with world patterns of resources, population, and production. 3xxx and 5xxx survey courses concerned with particular countries, continents, or regions of the world offer knowledge of value to the nonspecialist.

Introductory Courses

1301f,w,s. HUMAN GEOGRAPHY—LECTURE AND RECITATION. (6 cr, §1302) Hart, Rice, Schwartzberg, Scott, Tuan, Webb
Geography of population and principal ways of life; capacity of earth for future population. GrC

1302f,w,s. HUMAN GEOGRAPHY. (4 cr, §1301)
For description, see 1301. GrC

1401f,w,s. PHYSICAL GEOGRAPHY. (5 cr) Barrett, Brown, Gersmehl, Skaggs, Squires
Distribution patterns of climate, relief, vegetation, and soils; regional differences in problems of physical development. GrC

1425f. INTRODUCTION TO METEOROLOGY. (4 cr, §Soil 1262) Baker, Skaggs
Nature of the atmosphere and its behavior. Atmospheric composition, structure, stability, and motion; precipitation processes, air masses, fronts, cyclones, and anticyclones; general weather patterns; meteorological instruments and observation; plotting and analysis of maps; forecasting. GrB

Course Descriptions—Major Sequences

- 1973. GEOGRAPHY OF THE TWIN CITIES.** (4 cr, §3973) Staff
Social and physical characteristics of the Twin Cities. Their place in the urban network of the United States. GrC
- 3001. INTRODUCTION TO GEOGRAPHIC INQUIRY.** (4 cr) Barton, Lukermann, Porter
Concepts of distance, direction, scale, location, hierarchy, flow, metrics, and space; analyses that these entail. GrC

Regional Studies

- 3101. GEOGRAPHY OF UNITED STATES AND CANADA.** (4 cr) Borchert, Hart, Mather
Interaction of the aspirations and abilities of different groups of people with the complexities of the natural environment to produce regional differentiation of the United States and Canada. GrC
- 3111f.s. GEOGRAPHY OF MINNESOTA.** (4 cr) Borchert, Rice
Physical resources, population, and commercial production. Field trips in eastern Minnesota. GrC
- 3121w. LATIN AMERICA.** (4 cr) Barrett, Mather
Physical and human geography of Latin America. GrC
- 3131w. MIDDLE AMERICA.** (4 cr) Barrett
Physical and human geography. Internal and external areal relationships. GrC
- 3141w. AFRICA.** (4 cr) Porter, Scott
Regional differentiation of human groups and environments; culture contact and problems of underdeveloped countries south of the Sahara. GrC
- 3161f. EUROPE.** (4 cr) Rice, Webb
Cultural-economic realms in Europe (excluding U.S.S.R.); areal organization of each realm. GrC
- 3181w. SOVIET UNION.** (4 cr) R Adams, Rice
Systematic appraisal by regions of physical resources, population, and economic geography; problems and planning in U.S.S.R. compared with the U.S. GrC
- 3211. EAST ASIA.** (4 cr, §5211) Hsu
Physical and human geography of China, Korea, and Japan; population pressure, economic development, and international relations. GrC
- 3212f. SOUTH ASIA.** (4 cr, §5212) Schwartzberg
Physical and human geography of India, Pakistan, Bangladesh, Sri Lanka, Afghanistan, and the Himalayan kingdoms; geographic aspects of social structure, population pressure, economic development, and international relations. GrC
- 3213. SOUTHEAST ASIA.** (4 cr) Schwartzberg
Physical and human geography of Burma, Thailand, Indochina, Malaysia, Indonesia, and the Philippines; geographic aspects of social structure, population pressure, economic development, and international relations. GrC
- 3221f. AUSTRALIA-NEW ZEALAND-OCEANIA.** (4 cr) Barrett
Physical and human geography of Australia, New Zealand, Polynesia, and Melanesia; modification of aboriginal use after European contact, current land use trends in non-European societies, and use and modification of environment by Europeans. GrC
- 5101. HISTORICAL GEOGRAPHY OF NORTH AMERICA.** (4 cr) Lukermann
Sequential analysis of settlement and economy in changing environment and resource pattern of North America in the period of frontier interaction, 1500 to 1900. GrC
- 5102. HISTORICAL GEOGRAPHY OF NORTH AMERICA.** (4 cr) Lukermann
Sequential analysis of settlement and economy in changing environment and resource pattern of North America in the period of sectional industrialization, rural to urban change, and national metropolitan dominance. GrC
- 5111f. SELECTED REGIONS OF THE EASTERN UNITED STATES.** (4 cr) Hart
Intensive analysis of regions east of the Great Plains. The regions selected vary from year to year. GrC
- 5112s. WESTERN UNITED STATES.** (4 cr) Mather
Physical and human resources of western United States. GrC
- 5113s. CANADA AND ALASKA.** (4 cr) Mather
Physical and human geography. International and external areal relationships. GrC
- 5131. COLONIAL MEXICO AND THE CARIBBEAN.** (4 cr) Barrett
Exploration, discovery, settlement, livelihood, and circulation to about 1800. GrC

- 5132f. SOUTH AMERICA.** (4 cr) Mather
Physical resources, population, agriculture, manufacturing, and transportation in countries of South America. GrC
- 5142. GEOGRAPHY OF EAST AFRICA.** (4 cr) Porter
Physical and human geography of Kenya, Tanzania, and Uganda. Environment as resource; historical geography of colonial and postcolonial eras; geographical organization of human activity; regional contrasts. GrC
- 5143. GEOGRAPHY OF WEST AFRICA.** (4 cr) Scott
West Africa from Senegal to Cameroon: social geography of resource use, population, settlement, economic development, and international relations. GrC
- 5171w. WESTERN EUROPE.** (4 cr; prereq 5 cr in geography or §) Rice, Webb
Physical and human geography as a whole; selected topics on British Isles, France, Low Countries, Rhine Basin. GrC
- 5172s. EASTERN EUROPE.** (4 cr) R Adams, Rice
Physical and human geography of the socialist realm of Eastern Europe with comparative analyses of individual countries; historical, economic, and political diversity. Case studies. GrC
- 5173w. NORDEN.** (4 cr) Rice
Cultural and political development of Scandinavia, Finland, and Iceland. Effects of changing resource appraisal upon patterns of economic activity and human occupancy. GrC
- 5181. U.S.S.R. REGIONS AND PLANNING.** (4 cr; prereq 3181 or §) R Adams
Regionalization, production specialization, and interchange within U.S.S.R.; effects of policies of centralization and regional autonomy; present trends, prognosis, and comparisons with United States. GrC
- 5191. AGRICULTURAL MARKETING IN AFRICA.** (4 cr) Scott
Cultural, ecological, and spatial analysis of structural change in rural Africa; the impact of commercialism on traditional socioeconomic institutions; the spatial behavior pattern of small landholders. GrC
- 5211. EAST ASIA: REGIONAL ANALYSIS.** (4 cr, §3211; prereq 5 cr in geography or §) Hsu
Aspects of East Asian life. The effects, within a traditional context, of population growth and modern technology on the transformation of society and reorganization of space. GrC
- 5212f. SOUTH ASIA.** (4 cr, §3212) Schwartzberg
For description, see 3212. GrC

Topical Studies

- 3321s. POLITICAL GEOGRAPHY.** (4 cr) Schwartzberg
Scope and methods; selected concepts, problems, and areas. GrC
- 3331. ECONOMIC GEOGRAPHY.** (4 cr) R Adams, Scott
World patterns of economic activity; levels of development; appraisal of resources, production, circulation, and consumption; principles, models, and planning of economic behavior. GrC
- 3341. INDUSTRIALIZATION AND WORLD TRADE.** (4 cr; prereq 3331 or §) R Adams
Historical and cultural geography of economic regions; socioeconomic structure and trade relations; topics such as industrialization, economic growth, world trade, underdeveloped nations. GrC
- 3343. LAND USE ECOLOGY.** (4 cr) Gersmehl, Squires
Study of man as an animal; ecological principles of man's existence and use of the earth. GrC
- 3344. THE LAND ETHIC IN THE UNITED STATES.** (4 cr) Squires
Philosophies and policies concerning land use in the 19th and 20th centuries. GrC
- 3345. ENERGY AND MINERALS.** (4 cr) R Adams
Sources, production, circulation, and consumption of power, metals, and nonmetallic minerals. Problems of exhaustion, substitution, pollution, costs, trade, and policy. National and local case studies. GrC
- 3351. GEOGRAPHY OF FOOD PRODUCTION.** (4 cr) Gersmehl
Environmental constraints on agriculture; world agricultural regions; geography of energy and materials inputs of food production; spatial patterns of producers, consumers, and middlepersons; agribusiness and communal alternatives. GrC
- 3355. ENVIRONMENTAL PROBLEMS.** (4 cr) Gersmehl, Skaggs, Squires
Environmental problems associated with human activities. GrC

Course Descriptions—Major Sequences

- 3361f. ENVIRONMENTAL EVALUATION AND ADAPTATION.** (4 cr) Tuan
The making of "worlds" out of "environments"; how different peoples evaluate and adapt to their natural surroundings; past and nonliterate cultures. GrC
- 3371f. URBAN GEOGRAPHY.** (4 cr) J Adams, Scott, Webb
Character, distribution, and development of cities in present-day world. Internal and external locational relationships. GrC
- 3378. MODERNIZATION AND THE THIRD WORLD.** (4 cr) Scott
Concepts and ideas of modernization in the Third World; historical trends and impact of changes on spatial organization. GrC
- 3381. POPULATION GEOGRAPHY.** (4 cr) Webb
Characteristics of human populations that relate to the nature of places and regions. Differential growth of populations with consideration of spatial variations in fertility, mortality, and migration. Regional variations in relationship of population and material welfare. GrC
- 3421f. CLIMATOLOGY.** (4 cr; prereq 1401 or *) Barrett, Gersmehl, Skaggs
World distribution of climatic elements; methods of arranging climatic data; climatic classifications and world distributions of climatic types; general circulation; climatic change and climatic fluctuations. GrC
- 3431. PLANT AND ANIMAL GEOGRAPHY.** (4 cr) Squires
World distribution of plants and animals; biological and ecological background; the geographical picture; the paleoecological record. GrB
- 3441f. LANDFORM GEOGRAPHY.** (4 cr) Brown, Gersmehl
Landform resources in regional setting with emphasis on North America. GrC
- 3973. GEOGRAPHY OF THE TWIN CITIES.** (4 cr, §1973) Staff
For description, see 1973. GrC
- 5322. POLITICAL GEOGRAPHY OF ASIA.** (4 cr; prereq 3321 or a regional course on any part of Asia or *) Schwartzberg
Geographical analysis of political development within particular countries of Asia and of problems of regional and interregional conflict and cooperation. GrC
- 5372-5373. METROPOLITAN ANALYSIS I, II.** (4 cr per qtr) J Adams
5372: Urban systems and metropolitan areas, structure, and growth; daily urban systems; simulated urban systems; metropolitan population dynamics; social area analysis; transportation systems; travel behavior; land use; retail structure, change. 5373: Neighborhood transition; conflicts in housing, location of facilities, and urban renewal. GrD
- 5375-5376. AMERICAN CITIES—LOCATION AND GEOGRAPHIC DESIGN.** (4 or 6 cr per qtr; prereq *) Borchert
5375: The spread of urbanization across the United States; differentiation of city sizes and functions within the nation's resource regions and circulation network; evolution of today's system of cities, its regional and national management problem. 5376: The internal development of the major metropolitan areas of the United States; evolution of land use patterns, activity systems, and metropolitan problems. GrC
- 5381. SERVICES AND LOCATION THEORY.** (4 cr; prereq 3331 or *) R Adams
Localization of economic activity; case studies of industries and services; location factors, models, and theory. GrC
- 5383s. TRANSPORTATION GEOGRAPHY.** (4 cr; prereq 3331 or *) R Adams
Principles and theory of spatial development of transport systems; interaction of resource use and network growth; commodity and passenger flows; case studies at national, regional, and local (urban) levels. GrC
- 5391s. RURAL GEOGRAPHY.** (4 cr) Mather
Geographic components and assemblages of rural settlement. World patterns and geographic problems of rural settlement on the American scene. GrC
- 5393. THE LOOK OF THE LAND.** (4 cr) Hart
Major components of landscapes; interaction between man-made structures and distinctive rural landscapes in North America and northwestern Europe. GrC
- 5423. ADVANCED CLIMATOLOGY.** (4 cr; prereq 3421 or *) Skaggs
Selected topics including energy balances, synoptic climatology, climate models. GrB
- 5424. QUATERNARY CLIMATES.** (4 cr; prereq *) Skaggs, Squires
The study of climatic variability during the Quaternary period; the evidence for and significance of such variability. GrC

5444. GEOGRAPHY OF WATER RESOURCES. (4 cr; prereq two courses in physical geography or §) Brown

Distributional aspects of the magnitude, quality, and dynamics of water resources. Aesthetic, recreational, and material production uses of water; consequences of human actions in the hydrosphere, especially in fresh water. GrC

5445. QUATERNARY PALEOGEOGRAPHY. (4 cr; prereq §) Brown, Squires

Evidence of past environments; special reference to the Quaternary period. GrB

History and Philosophy of Geography

3801. DEVELOPMENT OF GEOGRAPHIC THOUGHT. (4 cr, §5801; prereq 15 cr in geography) Lukermann

Concepts and methods of geography; differing schools of thought as expressed in contemporary geographic literature. GrC

5001-5002. GEOGRAPHICAL ANALYSIS I, II. (4 cr per qtr) J Adams, Barton

5001: Order, science, and geography; measurement, relationship, and classification; location and spatial interaction; spatial diffusion processes; spatial decision making. **5002:** Models of ecological conflict and equilibrium in man-environment relationships. GrC

5011. ELEMENTS OF GEOGRAPHIC EXPLANATION. (4 cr; prereq 15 cr in geography or §) Barton

The nature and logical structure of explanation in human geography; explanation in historical and theoretical geography; the nature of geographic space; geography among the sciences. GrA

5801. DEVELOPMENT OF GEOGRAPHIC THOUGHT. (4 cr, §3801; prereq sr, 15 cr in geography) Lukermann

For description, see 3801. GrC

5811. ENVIRONMENTALISM, ENVIRONMENT, AND THE QUALITY OF LIFE. (4 cr; prereq §) Tuan

Ideas about environmentalism; organization of the physical environment into human settings (rural and urban) as they affect life's ideals. GrC

5849. SPACE AND PLACE: A GEOGRAPHY OF EXPERIENCE. (4 cr) Tuan

How experience creates structure and meaning in space and environment. GrC

Geographical Techniques

3311f,w,s. MAPS AND MAP INTERPRETATION. (4 cr; prereq soph, 5 cr in geography or §) Brown, Hsu, Porter

Uses and abuses of maps. Interpretation of topographic and statistical maps. Map sources; the air photo as a map. Map analysis with minimum of drafting. GrA

3511f,w,s. INTRODUCTION TO CARTOGRAPHY. (4 cr; prereq 5 cr in geography or §) Brown, Hsu, Porter

Principles of map design, compilation, specification, and drafting. Map symbols. History of cartography. Projections—analysis of construction, properties, and uses. GrA

3531f. QUANTITATIVE METHODS. (4 cr) R Adams, Barton, Hart, Skaggs

Applications of quantitative techniques to problems of classification, measurement, area association and sampling, and comparative regional analysis. Statistical sources commonly used by geographers. GrA

3551w. INTRODUCTION TO REMOTE SENSING. (4 cr; prereq 10 cr in geography or §) Brown, Porter, Skaggs

Theory and applications of imaging remote sensors to environmental problems. Remote sensor images in geographic studies. GrA

5511. CARTOGRAPHIC ANALYSIS. (4 cr; prereq 3511, 3531, or §) Brown, Hsu, Porter
Cartographic-quantitative analysis and display of geographical data. Principles of classification and areal sampling. The scale problem, pattern recognition, and surface smoothing. GrA

5512s. CARTOGRAPHY: TOPICS. (4 cr; prereq 3511, 3531, or §) Brown, Hsu, Porter
Advanced statistical mapping techniques; visual perception, automation, spatial statistics, and history of cartography. GrA

5521. COMPUTER APPLICATIONS IN GEOGRAPHY. (4 cr; prereq basic knowledge of FORTRAN or §) Hsu

Geographic data structure, programming for analysis of spatial statistics and geographic models, design of geographic research. GrA

Course Descriptions—Major Sequences

- 5522. COMPUTER MAPPING.** (4 cr; prereq basic knowledge of FORTRAN and 3511 or §) Hsu
Digitization and geocoding of locational data, library programs and mapping systems, programming for mapping and cartographic analysis, mapping via line printer, plotter, and CRT. GrA
- 5531w. QUANTITATIVE RESEARCH DESIGN.** (4 cr; prereq 3531, Soc 3801, or §) R Adams, Barton, Skaggs
Formulation of quantitative problems for hypothesis testing, sampling, model building; applications to computer methods; literature and problem work. GrA

Directed and Special Studies

- 3950. UNDERGRADUATE SEMINAR.** (4 cr per qtr; prereq 10 cr in geography and §) Staff
Supervised investigation of selected topics.
- 3970. DIRECTED STUDIES.** (1-15 cr per qtr) Staff
Guided individual reading or study.
- 3990. DIRECTED RESEARCH.** (1-15 cr per qtr) Staff
- 5353. SEMINAR FOR IN-SERVICE TEACHERS.** (4 cr; available only to in-service teachers)
Gersmehl, Hart
The variety of materials, organizational approaches, and teaching strategies in geography available to secondary school teachers of geography and social studies. GrC
- 5701. FIELD RESEARCH (TWIN CITY METROPOLITAN AREA AND ENVIRONS).** (4 cr; prereq 12 cr in geography and §) Staff
Field investigation in physical, cultural, and economic geography; techniques of analysis and presentation; reconstruction of environments.
- 5900. TOPICS IN GEOGRAPHY.** (4 cr per qtr; prereq sr or grad student and Δ)
Special topics and regions. Course offered by visiting professors in their research fields.

Geology and Geophysics (Geo)

School of Earth Sciences

Institute of Technology

Staff—Head, V. Rama Murthy, 106 Pillsbury Hall; *Director of Graduate Studies,* Herbert E. Wright, Jr.; *Director of Undergraduate Studies,* F. J. Sawkins

Professors: Banerjee, Mooney, Murthy, Shapiro, Sloan, Swain, Walton, Wright, Zoltai

Associate Professors: Chase, Hooke, Hudleston, Parham, Pfannkuch, Sawkins, Stout (on leave winter 1977), Weiblen

Assistant Professors: Alexander, Johnson, Shaw

Geology is concerned with the physical, chemical, and biological processes that continuously restructure and redistribute the material on and within the earth, and the historical development of the earth through these shaping processes.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Chem 1004-1005, Math 1211-1221-1231 (sequences to be started fr yr); Comp 3085 (to be taken jr yr or no later than 1st-qr sr yr)

Major Requirements—Core courses: soph yr, 1111f, 3401w, 3102s; jr yr, 3101f, 3112w, 3103s, 5110 suI

At least 16 science cr chosen from Biol 1011, 1103, 1104, 1106; Chem 1006, 3100, 3301-3302-3303; CSci 3101; Math 3066, 3142; Phys 1271-1281-1291 with 1275-1285-1295

The department offers two B.S. degree options in the Institute of Technology, geology and geophysics. Students who contemplate scientific careers are urged to consult the department director of undergraduate studies about program choices.

- 1001f,w,s. PHYSICAL GEOLOGY.** (5 cr; 3 lect hrs, one 2-hr lab, 1 rec hr per wk) Staff
Scientific method and nature of the earth; main features of the world and the processes that have formed them. GrB
- 1001H. HONORS SECTION: PHYSICAL GEOLOGY.** (5 cr; for nonscience majors)
The world of geology. Taught by senior faculty. Lectures, field trips, laboratory problems. GrB
- 1002f,w,s. HISTORICAL GEOLOGY.** (4 cr; prereq 1001; 3 lect hrs, one 2-hr lab per wk) Sloan
Evolution of earth from its origin; succession of physical and biological events of past 600 million years. GrB
- 1007. ENVIRONMENTAL GEOLOGY.** (4 cr, §1008; prereq 1001)
Geological application in resource management, land use planning, etc. Geological evolution of the biosphere and the impact of man's activities on its resources. Geological hazards. The Twin Cities area as a geological environment. Lectures, laboratories, field trips. GrB
- 1008. GEOLOGY AND MAN.** (4 cr, §1001, §1007)
Man in his physical environment; the broad nature of earth science, geological hazards, natural resources, geological aspects of pollution and land use; soil composition as related to nutrition and disease. Lectures, laboratories, field trips. GrB
- 1011w. DRIFTING CONTINENTS.** (4 cr; 3 lect hrs, one 2-hr lab per wk) Sawkins, Chase
The revolution in recent geological thinking. Integration of diverse geological elements—volcanoes, earthquakes, mountain chains, wandering continents, earth resources. GrB
- 1012f. EARTH AS A PLANET.** (4 cr; 3 lect hrs, 1 lab hr per wk)
Survey course on origin and evolution of the earth; its structure and composition in relation to other planets; the cosmic abundances and mode of formation of elements in the solar system. GrB
- 1013f. ORIGIN AND EVOLUTION OF LIFE.** (4 cr)
Geological evidence of the origin and increasing complexity of living systems, including biogenesis, single-celled organisms, plants, animals, and ecosystems. Problems of extraterrestrial life. GrB
- 1014. OCEANS, LAKES, AND RIVERS.** (4 cr)
Natural history of the world's oceans, lakes, rivers, and subsurface waters as part of a dynamic system. Integrates the biology, chemistry, and geology of the aqueous environment. Man's effect on the environment. GrB
- 1111f. INTRODUCTORY PHYSICAL GEOLOGY.** (5 cr; for prospective majors and others desiring more intensive course; prereq high school or college chemistry or §; 3 lect hrs, 1 rec hr, and two 2-hr labs per wk) Stout, Chase GrB
- 1601. MARINE SCIENCES.** (4 cr; prereq high school physics...chemistry and biology recommended; 3 lect hrs and 1 rec hr per wk) Johnson
Survey of marine geology, marine biology, physical and chemical oceanography, resources of the sea, and man's interaction with the sea. GrB
- 3099f,w,s. PROBLEMS IN GEOLOGY AND GEOPHYSICS.** (1-6 cr; prereq § and Δ)
Research or problems selected on the basis of individual interests and background.
- 3101f. SURFICIAL GEOLOGIC PROCESSES.** (5 cr; prereq 3102 and 3401 or §) Hooke
Geologic processes at the surface of the earth. Geomorphology, limnology, groundwater geology, sedimentology. Field trips. GrB
- 3102s. PETROLOGY.** (5 cr; prereq 3401) Stout
The lithologic character and genesis of igneous and metamorphic rocks.
- 3103s. STRUCTURAL AND FIELD GEOLOGY.** (5 cr; prereq 3102 or §) Hudleston
Primary and secondary structures of rocks; mechanics and modes of deformation; field methods in geology. Field trips.
- 3112w. EARTH HISTORY.** (5 cr; for prospective majors and others desiring more intensive course than 1002, prereq 1111 or §, 3 lect hrs, 1 rec hr, and two 2-hr labs per wk) Swain GrB
- 3401w. INTRODUCTORY MINERALOGY.** (5 cr, §5004, §5404; prereq 1001 or 1111 or §, 1 term college chemistry, Math 1221; 3 lect and 6 lab hrs per wk) Zoltai, Stout
Crystallography, crystal chemistry, and crystal physics. Physical and chemical properties, crystal structures, and chemical equilibria of the major mineral groups. Laboratory includes crystallographic, polarizing microscope, X-ray powder diffraction exercises, hand specimen mineral identification. GrB
- 5002s. STRUCTURAL GEOLOGY.** (4 cr, §3103 or equiv; not open to geology, geophysics, geo-engineering, mineral resources engineering, and metallurgy-materials science majors; prereq 3401 or 5004 or §; 3 lect and 2 lab hrs per wk)
Primary and secondary structures of rocks, mechanics and modes of deformation, structural techniques. Laboratory exercises in three-dimensional representation and solution of selected structural problems.

Course Descriptions—Major Sequences

- 5004w. MINERALOGY.** (4 cr, \$3401; not open to geology, geophysics, and geological, mineral and metallurgical engineering majors...open to majors and grad students of other disciplines; prereq 1001 or §, 1 term college chemistry. Math 1221; 3 lect and 6 lab hrs per wk) Zoltai, Stout
See description of 3401. GrB
- 5099f,w,s. SENIOR THESIS.** (2 cr per qtr; prereq geology or geophysics major with 4th yr standing and §) Stout, staff
A nonstructured research course to enable senior-level majors to engage in independent research with faculty supervision. Problems selected according to individual interests by consultation with faculty committee. Thesis and oral defense.
- 5100. ADVANCED GENERAL GEOLOGY.** (2 cr per qtr; S-N only; prereq 1001 or 1111) Staff
Seminar course on geology of an area, followed by field trip to the location. Regions studied will vary from year to year.
- 5102. PHYSICAL STRATIGRAPHY.** (4 cr; prereq 3103) Swain
Modern literature and laboratory work in Paleozoic, Mesozoic, and Cenozoic stratigraphy; geosynclinal and shelf development, oceanic and lacustrine deposits.
- 5103. MARINE BIOSTRATIGRAPHY.** (3 cr; prereq 5102 and 5151)
Fundamentals of biostratigraphic analysis of fossil assemblages, with emphasis on Mesozoic and Cenozoic zonation.
- 5108. ADVANCED ENVIRONMENTAL GEOLOGY.** (4 cr; prereq geology core curriculum 1111 through 3103 or equiv)
Man's impact on the geological environment and the effect of geology/geologic processes on man. Land use planning, geologic hazards, geologic aspects of health and disease, mineral conservation, waste disposal, and geologic controls and limitations in developed versus underdeveloped countries.
- 5110. FIELD GEOLOGY.** (9 cr; restricted to students majoring in geology, geophysics, and geological engineering; prereq 3103 and §)
Measurement of stratigraphic sections; fossils and igneous, sedimentary, and metamorphic rocks. Geological surveying on aerial photographs and topographic maps. Geologic map preparation. Geologic setting of mineral deposits.
- 5151f. INTRODUCTION TO PALEONTOLOGY.** (5 cr; prereq 1002 or 3112 or §) Sloan
Morphology, classification, and ecology of selected groups of invertebrate fossils.
- 5154f. VERTEBRATE PALEONTOLOGY I.** (5 cr; prereq 5151 or Zool 5124) Sloan
Morphology, evolution, and stratigraphic distribution of fossil fish, amphibians, reptiles, and birds.
- 5155w. VERTEBRATE PALEONTOLOGY II.** (5 cr; prereq 5154 or Zool 5124) Sloan
Morphology, evolution, and stratigraphic distribution of fossil mammals.
- 5156. MARINE MICROPALAEONTOLOGY.** (3 cr; prereq 5151 or §)
Major groups of marine microfossils; morphology, classification, and geologic distribution.
- 5251s. GEOMORPHOLOGY.** (4 cr [5 cr with term project]; prereq 1001, Math 1111 or §; 3 lect, 2 lab hrs per wk...lab often used for field trips) Hooke
The origin, development, and continuing evolution of landforms in various environments. Weathering, slope and shore processes, fluvial erosion and deposition, wind action, tectonics, and impact phenomena.
- 5252f. PROBLEMS IN GEOMORPHOLOGY.** (3 cr; prereq 5251) Hooke
Selected geomorphic processes. Fluvial processes and arid region geomorphology.
- 5255. GLACIOLOGY.** (3 cr [4 cr with term project]; prereq Math 3221 or equiv or §) Hooke
Theories of glacier flow. Internal structures and heat flow in glaciers and ice sheets. Reading assignments and problems.
- 5261. GLACIAL GEOLOGY.** (4 cr [5 cr with term paper]; prereq 1002 or 3112)
Formation and characteristics of modern glaciers; erosional and depositional features of Pleistocene glaciers, history of Quaternary environmental changes in glaciated and nonglaciated areas. Field trips.
- 5301. CHEMICAL EQUILIBRIA IN THE EARTH.** (3 cr; prereq Chem 5501 or 5520 or ¶5501 or ¶5520)
Recitation/problems course dealing with the application of thermodynamics and kinetics to chemical systems in the earth sciences. Reactions in natural gases, solid-state mineral transformations, melting and solid-solution phenomena, rates of nucleation and mineral growth, and reactions in natural waters.

- 5302. NUCLEAR GEOLOGY.** (4 cr; prereq #)
Theory and practice of radioactive dating. K/Ar, Rb/Sr and U, Th/Pb method as applied to geologic problems. Use of isotopic tracer techniques in crust-mantle evolution, igneous processes, and the early history of the earth.
- 5351. METAL SULFIDE DEPOSITS.** (5 cr; prereq 3401 or 5404, 3103 or #) Sawkins
Nature and distribution of sulfide deposits and analysis of the processes by which metals are concentrated in magnetic, hydrothermal, and sedimentary environments.
- 5352. GEOLOGY OF FERROUS METALS AND NONMETALLIC DEPOSITS.** (4 cr; prereq 3401, 3103, or #) Sawkins
Environmental setting, mineralogy, and genesis of ferrous metal ore deposits and nonmetallic deposits.
- 5361. MINERAL FUEL DEPOSITS.** (3 cr; prereq 3101, 3103 or 5002 or #) Swain
Origin and distribution of petroleum and coal deposits; source materials, reservoir rocks and structures, stratigraphic distribution of important deposits.
- 5404f. MINERAL SYSTEMS I.** (4 cr, §3401, §5004; prereq 1 qtr chemistry) Zoltai, Stout
Crystallography: basic and compound symmetry operations, point and space groups, crystal forms and coordinate systems. Systematics of basic and derivative close-packed and coordination polyhedral structures of rockforming and ore minerals. Demonstrations of crystallographic and crystal structural concepts. GrB
- 5405w. MINERAL SYSTEMS II.** (4 cr; prereq 3401 or 5405, 1 qtr physics) Zoltai, Stout
Review of optical mineralogy. Bonding and relative sizes of atoms and ions. Chemical substitutions. Crystal growth and imperfections. X-ray powder diffraction. Thermal, electric, elastic, and magnetic properties of minerals. Absorption phenomena. Laboratory: optical mineralogy and crystal physics exercises. GrB
- 5406s. MINERAL SYSTEMS III.** (4 cr; prereq 5405 or #, 1 qtr physics and chemistry) Zoltai, Stout
Review of the theoretical foundation for mineral equilibria and applications to the petrogenesis of sedimentary, igneous, and metamorphic rocks. Survey of various instrumental techniques. Laboratory: selected petrographic studies and optical mineralogy. GrB
- 5452s. IGNEOUS AND METAMORPHIC PETROLOGY.** (4 cr; prereq 3102, Chem 5502 or 5521, Math 3211 or #)
Theoretical course that develops basic thermodynamic tools for interpreting the mineralogy of igneous and metamorphic rocks. Data of experimental petrology, field geology, and petrography integrated with a theoretical approach to clarify chemical processes in the earth's crust and mantle. Laboratory and term paper.
- 5505. PHYSICS AND CHEMISTRY OF THE EARTH I.** (4 cr; prereq 1111 and Phys 1295)
Mooney
Earthquake seismology; physical structure of the earth's crust and deep interior; gravity field of the earth.
- 5506. PHYSICS AND CHEMISTRY OF THE EARTH II.** (4 cr; prereq 5505 or #) Murthy
Origins and chemical evolution of the earth through geologic time.
- 5507. PHYSICS AND CHEMISTRY OF THE EARTH III.** (4 cr; prereq 5506 or #) Banerjee, Chase
Gravity and magnetic fields of the earth; paleomagnetism, thermal history of the earth.
- 5511f. PRINCIPLES OF GRAVITY AND MAGNETIC EXPLORATION.** (3 cr; prereq Phys 1291)
Chase
Instrumentation, surveying techniques, reduction of data, interpretation, case histories.
- 5512w. PRINCIPLES OF SEISMIC EXPLORATION.** (3 cr, §5522; prereq Phys 1291) Mooney
Reflection and refraction seismology; theory, interpretation, instruments.
- 5513. PRINCIPLES OF ELECTRICAL EXPLORATION.** (3 cr; prereq Phys 1291) Mooney
Resistivity, electromagnetic induced polarization, and other methods.
- 5522s. PRINCIPLES OF REFRACTION SEISMIC EXPLORATION.** (2 cr, §5512; principally for civil engineering and geo-engineering students; prereq Phys 1291)
Seismic wave theory, refraction seismology.
- 5523. PRINCIPLES OF ELECTRICAL EXPLORATION.** (2 cr, §5513; nonlaboratory version of 5513 for civil engineering and geo-engineering students)
- 5531. HIGH PRESSURE MINERALOGY WITH GEOPHYSICAL APPLICATIONS.** (3 cr; prereq 3401 or #) Shaw
Phase transformations in solids at high pressures and temperatures; silicates and silicate analogs, likely mineralogic constitution of the mantle, and detailed structure of the mantle. GrB
- 5541. GEOMAGNETISM.** (3 cr; prereq 1 qtr each geology, physics, mathematics)
Historical introduction; magnetic properties of rocks and minerals; polar wandering and continental drift.

Course Descriptions—Major Sequences

- 5551. FIELDWORK IN GEOPHYSICS.** (1-3 cr [can be repeated]; prereq §)
Short field problems using gravity, magnetic, seismic refraction, and/or electrical resistivity methods. CrB
- 5601f. LIMNOLOGY.** (4 cr, §EBB 5601; prereq Chem 1005 or equiv and §)
Events occurring in lakes, reservoirs, and ponds; their origins; their physics, chemistry, and biology. Interrelationships of these parameters; effects of civilization on lakes. Field trips.
- 5602. CASE STUDIES IN LIMNOLOGY.** (3 cr; prereq 5601 or EBB 5601 and §)
Detailed analyses of specific studies on lakes and problems of lakes throughout the world.
- 5611s. GROUNDWATER GEOLOGY.** (4 cr; prereq 1001 or 1111, Math 1231, 1 qtr physics and chemistry, or §)
Origin, occurrence, and movements of groundwater. Characteristics of major aquifers and aquitards. Exploratory investigations. Hydrogeologic units and boundaries. Principles and theoretical aspects of recharge. Quality of groundwater supplies.
- 5612. ANALYTICAL GEOHYDROLOGY.** (3 cr; prereq 5611, Math 3211 or 5601, CE 3400 or equiv or §) Pfannkuch
Microphysics of flow through porous media, geological factors in aquifer performance; equations for groundwater flow; analysis of pumping tests; potential theory in groundwater flow; computer and analog models of aquifers; groundwater basin analysis.
- 5652. SEDIMENTOLOGY.** (5 cr; prereq 3101, 3102, 1 qtr chemistry, 1 qtr physics; 3 lect and 6 lab hrs per wk) Johnson
Sedimentary rocks: their origin and diagenetic history, using knowledge of present-day depositional environments.

German (Ger)

Staff—Chairman, Thomas G. Plummer, 219 Folwell Hall; **Director of Undergraduate Studies,** Gary L. Alley, 215 Folwell Hall; **Language Coordinator,** Jonathan B. Conant, 303a Folwell Hall

Professors: Firchow, Hirschbach, Taraba, Weiss

Associate Professors: Conant (visitor 1976-77), Duroche, Liberman, Plummer

Assistant Professors: Alley, Formanek, Joeres, Lowry, Wakefield

German as a college-level discipline comprises the study of the spoken language and of German literature, philology, and culture.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1301 or 4 yrs of high school German or equiv

Major Requirements—Minimum of 44 cr in 3xxx or 5xxx courses, to include 3104, 3105; 4 cr each in early German literature (3401 or 3411); 18th-century German literature (3421, 3422, or 3423); 19th-century German literature (3431 or 3432); 20th-century German literature (3441, 3442, or 3443); civilization and culture (3501, 3511, 3512, or 3513); composition and conversation (3011, 3012, or 3013); philology (3701 or 3702); 8 elected cr

Courses taught in translation, except 3604, do not count toward the major.

For requirements for a teacher's certificate, see the *College of Education Bulletin*.

General Education—German literature courses in translation 3601, 3602, 3603, 3604, and 3610 have no prerequisites and offer a sound introduction to major trends of German literature and aspects of German culture.

GERMAN (Ger)

1001-1002-1003. BEGINNING GERMAN: MEDIA-AIDED. (5 cr per qtr, §1101-1102-1103, §1110; 3 class meetings and 1 lab per wk in 1st and 2nd qtrs, 4 class meetings and 1 lab per wk in 3rd) Staff

Writing, reading, understanding, and speaking skills, one emphasized each segment of the course. Use of audio and video tapes in the laboratory for comprehension, use of computer in homework for grammar. GrA

- 1101-1102-1103. BEGINNING GERMAN.** (5 cr per qtr, §1001-1002-1003, §1110; 5 class meetings per wk) Staff
Understanding, speaking, reading, and writing. Emphasis on reading. GrA
- 1110. INDIVIDUALIZED BASIC GERMAN.** (3-15 cr per qtr, §1001-1002-1003, §1101-1102-1103; prereq §...German placement exam or personal placement recommended for students with previous German instruction at other institutions; meetings scheduled as required) Staff
Individualized instruction covering material of 1001-1002-1003 or 1101-1102-1103. Students enter at level indicated by language proficiency and work at own speed. Credit awarded according to number of units completed. GrA
- 1301. INTERMEDIATE GERMAN.** (5 cr; prereq 1003 or 1103 or 15 cr of 1110 or 3 yrs high school German) Staff
Expansion of basic skills. GrA
- 1302. INTERMEDIATE GERMAN.** (4 cr; prereq 1301 or proficiency exam) Staff
For completion of language requirement or further preparation for composition and conversation. Not normally recommended for majors. GrA
- 3011-3012-3013. COMPOSITION AND CONVERSATION.** (4 cr per qtr; prereq 1301 or 4 yrs high school German) Staff
German grammar; colloquial usage and original compositions. Development of everyday vocabulary. GrA
- 3040. GERMAN PLAY.** (1-3 cr per qtr; prereq 1003 or 1103 or 1110)
Use of standard German through participation in dramatic productions.
- 3041, 3042, 3043. ORAL INTERPRETATION OF GERMAN DRAMA.** (2 cr per qtr; prereq 3013 or equiv, §)
Dramatic reading of German plays for pronunciation and preparation for German play production. GrD
- 3104, 3105. READING AND ANALYSIS OF LITERARY TEXTS.** (4 cr per qtr; prereq 1301 or 4 yrs high school German)
Reading fluency; appreciation of literary values through literary interpretation and familiarization with critical terminology. 3104: Prose. 3105: Drama and poetry. GrD
- 3301, 3302, 3303. LYRIC POETRY FROM GOETHE TO RILKE.** (4 cr per qtr; prereq 3104 and 3105, or §)
3301: Klopstock through Goethe. 3302: Novalis through Nietzsche. 3303: Liliencron to present. GrD
- 3310. STUDIES IN GERMAN AUTHORS.** (4 cr per qtr; prereq 3104 and 3105, or §)
Works of one author studied in depth (such authors as Kleist, Heine, Büchner, Hofmannsthal, and others). GrD
- 3311, 3312, 3313. GERMAN DRAMA FROM LESSING TO PRESENT.** (4 cr per qtr; prereq 3104 and 3105, or §)
Outstanding dramatic works. 3311: Classical period. 3312: 19th century. 3313: Naturalism, impressionism, expressionism. GrD
- 3331. GERMAN COMEDY.** (4 cr; prereq 3104 and 3105) GrD
- 3341-3342. PROSEMINAR IN GERMAN.** (4/2 cr; prereq §)
3341: Significant themes in German literature. 3342: Student papers supervised by professors of their choice. GrD
- 3401. MEDIEVAL LITERATURE.** (4 cr; prereq 3104 and 3105)
Political, social, and intellectual spheres of life in medieval Germany; major literary works. GrD
- 3411. RENAISSANCE AND BAROQUE.** (4 cr; prereq 3104 and 3105, or §)
Major literary developments in the period of the Renaissance and the Baroque; movements that shaped more recent German literature. GrD
- 3421. ENLIGHTENMENT.** (4 cr; prereq 3104 and 3105, or §)
The 18th-century "Aufklärung" in historical and cultural context. Philosophy, criticism, poetry, drama, and the novel. GrD
- 3422. STORM AND STRESS.** (4 cr; prereq 3104 and 3105, or §)
The "Sturm und Drang" period of the late 18th century. Literary criticism; literary works in historical and cultural context. GrD

Course Descriptions—Major Sequences

- 3423. CLASSICISM.** (4 cr; prereq 3104 and 3105, or §)
"Weimarer Hochklassik" of the late 18th and early 19th centuries. Literary works and aesthetic criticism in historical and cultural context. GrD
- 3424. FAUST.** (4 cr; prereq 3104 and 3105) GrD
- 3431. ROMANTICISM.** (4 cr; prereq 3104 and 3105)
German literature of the Romantic period; its intellectual and historical background. GrD
- 3432. 19TH-CENTURY LITERATURE: 1832-1890.** (4 cr; prereq 3104 and 3105)
German literature from late romanticism to naturalism. GrD
- 3441, 3442, 3443. 20TH-CENTURY LITERATURE.** (4 cr per qtr; prereq 3104 and 3105)
3441: From 1890 to 1918. **3442:** From 1918 to 1933. **3443:** From 1933 to the present. GrD
- 3450. SENIOR SEMINAR IN GERMAN LITERATURE.** (4 cr per qtr; prereq 3104 and 3105 plus two additional German literature courses, §)
Study of one author or a specific aspect of German literature. GrD
- 3501. CONTEMPORARY GERMANY.** (4 cr; prereq 1 yr of college German or 3 yrs high school German)
Culture and civilization of present-day Germany. GrC
- 3511, 3512, 3513. GERMAN CIVILIZATION AND CULTURE.** (4 cr per qtr; prereq 4 cr in literature courses 3104 and above)
Movements and personalities in art, music, science, religion, and education. Lectures in German. GrC
- 3590. DIRECTED STUDIES IN GERMAN-SPEAKING COUNTRIES.** (5 cr per qtr; prereq 3501, §)
Preparation for research abroad during quarter prior to departure; research completed while abroad. Written reports and oral examinations upon return.
- 3601, 3602, 3603. GERMAN LITERATURE IN TRANSLATION.** (4 cr per qtr; requires no knowledge of German)
Representative literary works from medieval to modern times, related to other literatures. GrD
- 3604. GERMAN LITERATURE IN TRANSLATION AND THE FILM.** (4 cr; requires no knowledge of German...may be taken for cr toward major by doing a portion of the reading in German)
Modern German culture seen through literature and the film. Representative works related to historical and intellectual developments in modern Germany. Novelistic and cinematic treatment of similar material. GrD
- 3610. MODERN GERMAN AUTHORS IN TRANSLATION.** (4 cr per qtr; requires no knowledge of German)
Study in depth of one author, such as Thomas Mann, Kafka, Hesse, Brecht, or Grass. Selection of authors varies. GrD
- 3701. HISTORY OF GERMAN LANGUAGE.** (4 cr; prereq 3104 and 3105) GrA
- 3702. BEGINNING MIDDLE HIGH GERMAN.** (4 cr; for jrs and srs; prereq 3104 and 3105)
Middle High German grammar. Selected literary texts. GrA
- Courses at the 5xxx level are open to seniors upon recommendation of advisers. Prerequisites: 3104 and 3105 plus three additional German literature courses, or equivalent, plus course prerequisites.*
- 5011. ADVANCED COMPOSITION AND CONVERSATION.** (4 cr; prereq 3013 or equiv) Staff
GrA
- 5291, 5292, 5293. GERMAN LITERATURE I, II, III.** (4 cr per qtr)
German literature from the beginning to the present. **5291:** From the beginning until the mid-18th century. **5292:** From 1750 to 1880. **5293:** Modern and contemporary literature. GrD
- 5331. CULTURAL ANALYSIS.** (4 cr; prereq 3511, 3512, or 3513, or equiv) Weiss
Techniques of cultural analysis (contrastive, anthropological, traditional) through examination of literary texts, newspapers, language usage, other sources; "cultural myths" and forms of humor. GrC
- 5371. THE RADIO PLAY AS LITERARY FORM.** (4 cr) Weiss
Radio plays by such authors as Dürrenmatt, Frisch, Eich, Jens, Böll, Grass, or others; unique features dictated by the medium. GrD
- 5471, 5472. HUGO VON HOFMANNSTHAL.** (4 cr per qtr) Plummer
5471: 1890-1900. Poetry, early drama, early prose. **5472:** 1900-1929. Comedy, tragedy, opera, prose. GrD

- 5601, 5602, 5603. DRAMA IN TRANSLATION.** (4 cr per qtr; prereq 8 cr in theatre arts or in literature above 3001; requires no knowledge of German) GrD
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr)
Guided individual reading or study.

DUTCH (Dut)

- 1110f,w,s. BEGINNING DUTCH: INDIVIDUALLY PACED.** (3-15 cr per qtr; meetings scheduled as required)
Basic language skills: writing, reading, oral comprehension, speaking. Students proceed at their own rates. Credits awarded as completed at the end of each quarter. GrA
- 1301s. INTERMEDIATE DUTCH.** (5 cr; prereq 15 cr in 1110)
Intermediate language skills in writing, reading, and conversation. GrA
- 3310. STUDIES IN DUTCH AUTHORS.** (4 cr per qtr; prereq 1301 or 2)
One author studied in depth (Vondel, Couperus, van het Reve, and others). GrD
- 3610. DUTCH AUTHORS IN TRANSLATION.** (4 cr per qtr; no knowledge of Dutch required)
One author studied in depth (Vondel, Multituli, Bomans, and others). GrD

YIDDISH (Ydsh)

- 1101-1102. BEGINNING YIDDISH.** (4 cr per qtr)
Speaking, reading, and writing. GrA

GREEK-LATIN

See Classics.

HEBREW

See Near and Middle Eastern Studies.

HINDI

See South Asian Studies.

History (Hist)

Staff—*Chairman*, Stuart B. Schwartz, 614a Social Sciences Building; *Assistant Chairman*, John Model, 614b Social Sciences Building; *Director of Graduate Studies*, James Tracy, 633 Social Sciences Building; *Director of Undergraduate Studies* and *Honors*, David S. Lelyveld, 668 Social Sciences Building

Regents' Professor: Jones

Professors: Altholz (on leave 1976-77), Bamford (on leave 1976-77), Berman, Brauer (on leave 1976-77), Chambers, Howe, Isaacman (on leave fall 1976), Kopf, Lehmborg, Murphy (on leave 1976-77), Noble, Pflanze, Schwartz, Stavrou, Taylor (on leave 1976-77), Thayer, Vecoli, Wright (on leave fall 1976, winter 1977)

Associate Professors: Farmer, Green (on leave spring 1977), Kaba, Kelly, Kieft, Marshall (on leave fall 1976), Modell, Munholland, Noonan, Rudolph, Samaha, Spear (on leave winter and spring 1977), Tracy

Assistant Professors: Buffalohead, Gold, Hindus (on leave 1976-77), Lelyveld, Menard, Phillips, Reyerson

Instructors: Arsenault, McCaa

Course Descriptions—Major Sequences

Course offerings in the Department of History cover the history of humankind to the present day.

General Education—History courses numbered below 5500 are designed to serve the needs of students from all areas of the University. For freshmen and sophomores, Ixxx-level courses provide good background as well as the basis for advanced work in history.

B.A. MAJOR SEQUENCE

Prospective history majors should consult with advisers in the Undergraduate Studies office, 668 Social Sciences Building, as early in the undergraduate career as possible. Junior and senior majors without previous work in history are advised to take courses numbered between 3001 and 3499 before taking more advanced courses.

Preparatory Courses—Four survey courses, usually Ixxx courses taken during the first 2 years of college. Juniors and seniors complete this requirement by taking 3xxx versions of the survey courses.

Advanced Courses—Minimum of eight 3xxx and 5xxx courses, to include:

Four courses (excluding survey courses) in an area of concentration, defined geographically or topically

3961 (major paper), taken during senior year

A history course work design that includes two modern courses, two premodern courses, and one course in each of three geographical areas

Language Requirement—The CLA requirement may be satisfied by Route I or Route II. Those who follow Route II must complete 3 quarters of a second foreign language, or three courses in another relevant skill (see *Description of the Undergraduate Major in History* for list of acceptable courses). Students planning graduate work in history should acquire, early in their undergraduate careers, a reading knowledge of one or more languages.

The *Description of the Undergraduate Major in History* brochure, with additional information, may be obtained from the Undergraduate Studies office, 668 Social Sciences Building (373-5844).

1001f, 1002w, 1003s. INTRODUCTION TO MODERN EUROPEAN HISTORY. (4 cr per qtr, \$3001, \$3002, \$3003, \$1001H, \$1002H, \$1003H; not open to jrs, srs) Staff
1001: Western European civilization to 1715. 1002: Revolution, liberalism, and nationalism to 1870. 1003: 1870 to recent times. GrC

1001Hf, 1002Hw, 1003Hs. HONORS COURSE: INTRODUCTION TO MODERN EUROPEAN HISTORY. (4 cr per qtr, \$1001, \$1002, \$1003, \$3001, \$3002, \$3003; not open to jrs, srs; prereq *) Staff
For description, see 1001, 1002, 1003. GrC

1051f, 1052w, 1053s. ANCIENT CIVILIZATION. (5 cr per qtr, \$3051, \$3052, \$3053) Jones, Kelly
1051: Near East to 500 B.C. 1052: Greek civilization, 750 to 323 B.C. 1053: Roman civilization to 305 A.D. Lectures and 2 discussion hours per week. GrC

1101f, 1102w, 1103s. INTRODUCTION TO MEDIEVAL AND RENAISSANCE HISTORY. (4 cr per qtr, \$1111, \$1112, \$1113, \$3101, \$3102, \$3103) Bachrach, Reyerson, Tracy
1101: Early Middle Ages, decline of Rome, the barbarian kingdoms, Carolingian empire. 1102: High Middle Ages, feudal Europe, medieval culture. 1103: Later Middle Ages and early Renaissance, rise of national monarchies, art, learning, and literature. GrC

1111f, 1112w, 1113s. MEDIEVAL AND RENAISSANCE HISTORY WITH BASIC READINGS. (6 cr per qtr; prereq *; offered when feasible) Bachrach, Reyerson, Tracy
Students attend lectures in 1101, 1102, 1103 and meet with lecturer 2 hours per week to discuss readings, problems in historiography, and research methods relative to medieval and Renaissance history. GrC

- 1121f, 1122w, 1123s. HONORS COURSE: MEDIEVAL AND RENAISSANCE HISTORY.** (1 cr per qtr; prereq §, concurrent registration in 1101, 1102, 1103 or 1111, 1112, 1113; offered when feasible) Bachrach, Reyerson, Tracy
For description, see 1111, 1112, 1113 (except that discussion section meets 1 hour per week). GrC
- 1151, 1152. ENGLISH HISTORY.** (4 cr per qtr, §3151, §3152) Altholz, Lehmborg
1151: To the crisis of the 17th century. 1152: From the 17th century to the present. GrC
- 1301, 1302. AMERICAN HISTORY.** (4 cr per qtr, §1301H, §1302H) Staff
- 1301H, 1302H. HONORS COURSE: AMERICAN HISTORY.** (4 cr per qtr, §1301, §1302; prereq §) Staff
For description, see 1301, 1302. GrC
- 1310. TOPICS IN AMERICAN HISTORY.** (4 cr per qtr; prereq soph) Staff GrC
- 1401, 1402, 1403. SURVEY OF LATIN AMERICAN HISTORY.** (4 cr per qtr, §3401, §3402, §3403) McCaa, Schwartz
1401: Colonial period to 1800. 1402: Independence and the growth of nations in the 19th century to 1896. 1403: Contemporary period. GrC
- 1421, 1422. THE WORLD AND THE WEST.** (4 cr per qtr, §3421, §3422) Staff
Political, economic, and cultural interaction between the peoples of Europe, Africa, America, and Asia. 1421: Era of European expansion, 1500-1850. 1422: Modern period of anti-Western nationalism, 1850 to present. GrC
- 1431, 1432, 1433. HISTORY OF AFRICA.** (4 cr per qtr, §3431, §3432, §3433) Isaacman, Kaba
1431: To 1500. Internal dynamics and genius of early African society. 1432: 1500-1800. Impact of Europeans, the slave trade, African resistance, the process of underdevelopment. 1433: 1880 to the present. Abuses of colonialism, nature of African opposition, and liberation struggles. GrC
- 1451, 1452, 1453. ASIAN CIVILIZATIONS.** (4 cr per qtr, §3451, §3452, §3453) Farmer, Kopf, Lelyveld, Marshall, Taylor
1451: Birth of civilization through ancient empires in East, South, and West Asia. 1452: The great religions, the Mongol conquest, early modern empires. 1453: Decline of empires, European domination, cultural renaissance and nationalism. GrC
- 1461. EAST ASIA: CLASSICAL FOUNDATIONS IN CHINA.** (4 cr, §3461) Farmer, Taylor
Origins of civilization in Eastern Asia: archaeology, first cities, monarchies, first Chinese empire (Han), interactions with Vietnamese, Korean, and inner Asian societies, literature and major schools of thought. GrC
- 1462. EAST ASIA: CULTURES OF CHINA AND JAPAN.** (4 cr, §3462) Marshall, Taylor
Breakup of Han empire, spread of Buddhism, distinctive and unified societies in China, Japan, Vietnam, and Korea. Mongol conquests, the empires and kingdoms of East Asia on the eve of confrontation with Europe. GrC
- 1463. EAST ASIA: CHINA AND JAPAN IN MODERN TIMES.** (4 cr, §3463) Farmer, Marshall
Decline of Asian empires, European and American imperialism, Asian responses: nationalism, social revolution, reintegration, modernization in China, Japan, Vietnam, Korea, retreat of European and American empires. GrC
- 1951f, 1952w, 1953s. WORLD MILITARY HISTORY: A SURVEY.** (2 cr per qtr, §Mil 1011, §Mil 1012, §Mil 1013; may not be used to satisfy requirements for major in history) Staff
1951: From ancient times to the Thirty Years War. 1952: From 1648 to the Crimean War. 1953: From the American Civil War to World War II. GrC
- 1954su. WORLD MILITARY HISTORY.** (5 cr)
Telescopes 1951, 1952, 1953 in a 5-week summer course. Mainly for ROTC students, but open to others. GrC
- 3001f, 3002w, 3003s. INTRODUCTION TO MODERN EUROPEAN HISTORY.** (4 cr per qtr, §1001, §1002, §1003, §1001H, §1002H, §1003H) Staff
For description, see 1001, 1002, 1003. GrC
- 3041. LAW AND ORDER IN ENGLISH HISTORY.** (4 cr; prereq § for fr and soph) Samaha
The Anglo-American system of criminal justice. Cultural values and the tension between individual and community that shaped the American system. GrC
- 3051f, 3052w, 3053s. ANCIENT CIVILIZATION.** (3 cr per qtr, §1051, §1052, §1053) Jones, Kelly
3051: Near East to 500 B.C. 3052: Greek civilization, 750 to 323 B.C. 3053: Roman civilization to 305 A.D. GrC
- 3101f, 3102w, 3103s. INTRODUCTION TO MEDIEVAL AND RENAISSANCE HISTORY.** (4 cr per qtr, §1101, §1102, §1103, §1111, §1112, §1113) Bachrach, Reyerson, Tracy
For description, see 1101, 1102, 1103. GrC

Course Descriptions—Major Sequences

- 3150. TOPICS IN ENGLISH HISTORY.** (4 cr per qtr) Altholz, Lehmborg
Seminar in the history of England.
- 3151, 3152. ENGLISH HISTORY.** (4 cr per qtr, §1151, §1152) Altholz, Lehmborg
For description, see 1151, 1152. GrC
- 3200. CONTEMPORARY PROBLEMS IN HISTORICAL PERSPECTIVE.** (4 cr per qtr) Staff
Comparative treatment of a contemporary problem (such as urbanization, social change, nationalism, intercultural conflict, revolution) in historical perspective. GrC
- 3271, 3272, 3273. HISTORY OF SCANDINAVIA.** (4 cr per qtr) Gold
3271: Medieval Scandinavia. 3272: 16th, 17th, 18th centuries. 3273: Modern Scandinavia—19th, 20th centuries. GrC
- 3347, 3348. WOMEN IN AMERICAN HISTORY.** (4 cr per qtr)
Economic, social, and political position of women over the course of American history. GrC
- 3357, 3358. AMERICAN SOCIAL HISTORY: 19TH CENTURY.** (4 cr per qtr)
Selected themes in social history of the United States in the 19th century. GrC
- 3401, 3402, 3403. SURVEY OF LATIN AMERICAN HISTORY.** (4 cr per qtr, §1401, §1402, §1403) McCaa, Schwartz
For description, see 1401, 1402, 1403. GrC
- 3421, 3422. THE WORLD AND THE WEST.** (4 cr per qtr, §1421, §1422) Staff
For description, see 1421, 1422. GrC
- 3431, 3432, 3433. HISTORY OF AFRICA.** (4 cr per qtr, §1431, §1432, §1433) Isaacman, Kaba
For description, see 1431, 1432, 1433. GrC
- 3434, 3435. ISLAM AND ISLAMIC CULTURE IN AFRICA.** (4 cr per qtr) Kaba
Processes, forms, and sociopolitical effects. Introduction and spread of Islam in Africa. The process and agents of Islamization and the rise of the Islamic ideology for political purposes. GrC
- 3451, 3452, 3453. ASIAN CIVILIZATIONS.** (4 cr per qtr, §1451, §1452, §1453) Farmer, Kopf, Lelyveld, Marshall, Taylor
For description, see 1451, 1452, 1453. GrC
- 3461. EAST ASIA: CLASSICAL FOUNDATIONS IN CHINA.** (4 cr, §1461) Farmer, Taylor
For description, see 1461. GrC
- 3462. EAST ASIA: CULTURES OF CHINA AND JAPAN.** (4 cr, §1462) Marshall, Taylor
For description, see 1462. GrC
- 3463. EAST ASIA: CHINA AND JAPAN IN MODERN TIMES.** (4 cr, §1463) Farmer, Marshall
For description, see 1463. GrC
- 3464. EARLY MODERN CHINA: THE MING AND EARLY CH'ING, 1350-1750.** (4 cr, §5464) Farmer
Political and social institutions in early Ming; 16th and 17th century social and cultural trends; Manchu conquest and early Western contacts. GrC
- 3465. CHINA'S RESPONSE TO THE WEST, 1750-1911.** (4 cr, §5465) Farmer
Decline of imperial system; Western impact, cultural crisis, and revolution. GrC
- 3467. REPUBLICAN CHINA: THE NATIONALIST REVOLUTION, 1900 TO PRESENT.** (4 cr, §5467) Farmer
Chinese nationalism, interventions of Soviet Union, Japan, and the United States, failure of Kuomintang. GrC
- 3468. PEOPLE'S REPUBLIC OF CHINA: THE COMMUNIST REVOLUTION, 1900 TO PRESENT.** (4 cr, §5468) Farmer
Introduction of Marxism to China; rise of Communist Party; restructuring Chinese society. GrC
- 3471. 20TH-CENTURY JAPAN.** (4 cr, §5471) Marshall
The modern transformation, 1870's to 1970's. GrC
- 3472. EARLY MODERN JAPAN.** (4 cr, §5472) Marshall
Tradition and change in Tokugawa society during the 17th, 18th, and 19th centuries. GrC
- 3480. TOPICS IN SOUTH ASIAN HISTORY.** (4 cr per qtr) Kopf, Lelyveld
Examination of the problem in South Asian history. GrC
- 3481, 3482, 3483. HISTORY OF SOUTH ASIA.** (4 cr per qtr, §5481, §5482, §5483)
History of South Asia from social, cultural, political, and economic perspectives. 3481: Ancient India, 2000 B.C. to 1200 A.D. 3482: India and Muslim dominance, 1200 through 18th century. 3483: Modern India. South Asia under British rule; the rise of independent nation states. GrC

- 3484. HISTORY OF SOUTHEAST ASIA.** (4 cr) Staff
Societies and states in Asian region bordered by cultures and political spheres of China and India. GrC
- 3500. HISTORIOGRAPHY AND HISTORICAL METHOD SEMINAR.** (4 cr per qtr; prereq two unrelated history courses 3501 or higher, or §) Staff
Introduction to source types, problems of method inherent in source materials, and main currents in the Western historiographical tradition. GrC
- ANEJ 3501f, 3502w. ANCIENT ISRAEL.** (4 cr per qtr) Paradise
History of Israel; development of its religion. Biblical literature in the cultural, historical, and religious milieu of its origin. No knowledge of Hebrew required. GrC
- 3509. MILITARY HISTORY OF THE ANCIENT WORLD.** (4 cr) Kelly
The conduct of war in the Ancient Near East, Greece, and Rome. The importance of warfare in the political, economic, and social development of ancient societies. GrC
- MidE 3541f-3542w-3543s. HISTORY OF THE ARABS.** (4 cr per qtr; prereq MidE 3001 or §) Chejne
3541: Pre-Islamic days to downfall of Umayyads of Damascus. 3542: Abbasids to fall of Baghdad in 1258. 3543: From Crusades to modern times. GrC
- 3609. MILITARY HISTORY OF MEDIEVAL WESTERN EUROPE.** (5 cr) Bachrach
Concept and conduct of war in Western Europe in the Middle Ages and the relation between military organization and society. GrC
- 3611, 3612. JEWISH-CHRISTIAN RELATIONS IN MEDIEVAL EUROPE.** (4 cr per qtr) Bachrach
History of the Jewish minority in medieval Western Europe; relations between Christians; Constantine to Luther, 300-1500 A.D. GrC
- 3621. RENAISSANCE ITALY, 1200-1530.** (4 cr) Tracy
Politics and culture in the city-states. GrC
- 3622. WANING OF THE MIDDLE AGES.** (4 cr) Tracy
France and the Low Countries, ca. 1300-1570. GrC
- 3623. THE REFORMATION IN GERMANY.** (4 cr) Tracy
The Lutheran movement and the beginnings of the Catholic Reformation. GrC
- 3624. REFORMATION AND REVOLT: FRANCE AND THE NETHERLANDS, 1550-1600.** (4 cr) Tracy
Monarchy and rebellion, conflict between Calvinism and the Counter-Reformation. GrC
- 3704, 3705. ECONOMY AND SOCIETY—EUROPE, 1348-1580 AND 1580-1750.** (4 cr per qtr) Phillips
Patterns of society and economy in Europe during the Renaissance, Reformation, Enlightenment. The Black Death and other diseases, population and family structure, urban growth, agriculture, industry, the discovery and exploitation of the Americas, commerce. GrC
- 3707, 3708. SOCIAL AND ECONOMIC HISTORY OF MODERN EUROPE.** (4 cr per qtr) Rudolph
Changes in population, economy and society and their interrelationship; industrialization and its impact; social and revolutionary movements; socialist and market systems. 3707: 1750 to 1900. 3708: 1900 to the present. GrC
- 3721, 3722. 20TH-CENTURY EUROPE.** (4 cr per qtr) Munholland
3721: Pre-1914 to 1939. 3722: Since 1939. GrC
- 3754, 3755, 3756. HISTORY OF ITALY.** (4 cr per qtr) Thayer
3754: From the late Middle Ages to the 17th century. 3755: From the late 17th century to 1870. 3756: From 1870 to the present. GrC
- 3801, 3802. COLONIAL PERIOD OF AMERICAN HISTORY.** (4 cr per qtr) Menard
3801: English background, colonization to 1689. 3802: Provincial America, 1689-1765. GrC
- 3804. ERA OF THE AMERICAN REVOLUTION.** (4 cr) Howe
Causes and consequences of the Revolution. GrC
- 3805. JACKSONIAN AMERICA.** (4 cr) Howe
The developing republic from the perspective of the Jacksonian era. GrC
- 3811, 3812. POLITICS AND SOCIETY IN 19TH-CENTURY AMERICA.** (4 cr per qtr) Arsenault
3811: U.S. political history, 1800-1860. Jefferson to Lincoln. Party systems, sectionalism, the coming of the Civil War. 3812: 1861-1900. Civil War and Reconstruction. Bossism and the Gilded Age. Populism and the "new South." GrC

Course Descriptions—Major Sequences

- 3821, 3822, 3823. UNITED STATES IN THE 20TH CENTURY.** (4 cr per qtr) Spear
Political, economic, intellectual, and social trends; development of a corporate society; American imperialism and the rise to globalism; reform movements from Populism to the New Left. 3821: 1890 to 1920. 3822: 1920 to 1945. 3823: 1945 to present. GrC
- 3834, 3835. HISTORY OF CIVIL LIBERTIES AND CIVIL RIGHTS IN THE UNITED STATES.**
(4 cr per qtr) Murphy
3834: Liberty, equality, and justice in preindustrial American society. 3835: Civil liberties and civil rights conflicts in industrial America. GrC
- 3839. GREAT FIGURES IN AMERICAN JURISPRUDENCE.** (4 cr) Murphy
The role of leading jurists and legal thinkers in shaping American public law. GrC
- 3841. AMERICAN BUSINESS HISTORY.** (5 cr) Green
The creative role of business leaders and of the development of business institutions; interaction of business with economic development, social values, and government economic policies. GrC
- 3861, 3862. HISTORY OF AMERICAN IMMIGRATION.** (4 cr per qtr) Vecoli
Transoceanic migrations; formation of ethnic communities; emergence of a pluralistic society. 3861: To 1880. 3862: Since 1880. GrC
- 3864, 3865. AFRO-AMERICAN HISTORY.** (4 cr per qtr)
3864: From 1619 through reconstruction. 3865: Since reconstruction. GrC
- 3881, 3882. HISTORY OF AMERICAN FOREIGN RELATIONS.** (4 cr per qtr) Brauer
3881: Foreign policy and diplomacy of American independence and territorial and commercial expansion, 1775 to 1900. 3882: America's commercial expansion, involvement in war, and role as a superpower in the 20th century. GrC
- 3901, 3902. AMERICAN URBAN HISTORY.** (4 cr per qtr) Modell
3901: Preindustrial America. 3902: Industrial America. GrC
- 3951-3952†. HONORS COURSE: HISTORY.** (4 cr per qtr; prereq candidacy for honors in history, §) GrC
- 3955. INTRODUCTION TO WRITING HISTORY.** (4 cr; prereq two courses in history or §) Staff
Practical course in writing history. Use of documents and different kinds of historical writing. Students read and discuss material representative of contrasting historical perspectives. Faculty guidance in sections limited to 15 students. GrC
- 3961f,w,s. MAJOR PAPER.** (5 cr; prereq Δ)
Required of history majors, usually taken in senior year. Research papers on topics students choose; work largely with original materials (printed documents, memoirs, literature). Students sign up in History Department office.
- 3970. DIRECTED STUDIES.** (1-15 cr per qtr; prereq §)
Guided individual reading or study. Open to qualified students for one or more quarters.
- 3990. DIRECTED RESEARCH.** (1-15 cr per qtr; prereq §)
Qualified students, with consent of instructor, work on a tutorial basis.
- 5011, 5012. QUANTITATIVE METHODS IN HISTORICAL RESEARCH.** (4 cr per qtr; prereq one postsurvey course in any social science) Staff
Statistical approaches to analysis of historical questions. Data collection considerations, analytical techniques, and quantitative reasoning. GrA
- 5021-5022. COMPARATIVE STUDY OF THE FAMILY IN HISTORY: INDIA AND AMERICA.**
(4 cr per qtr; prereq §) Lelyveld, Modell
Historical information on the family, employed to test hypotheses regarding change (e.g., the shift from agrarian to industrial society). GrC
- 5031, 5032. A SOCIAL HISTORY OF ANGLO-AMERICAN LAW.** (4 cr per qtr) Hindus, Samaha
Law as a social institution. The Anglo-American legal system from its inception as an unsophisticated attempt to settle disputes by self-help to a complex structure relying heavily on formal, professionalized judicial machinery supported by political power to enforce decisions. GrC
- 5051f, 5052w, 5053s. ANCIENT NEAR EAST.** (3 cr per qtr) Jones GrC
- 5061, 5062, 5063. GREECE TO 200 B.C.** (3 cr per qtr) Jones, Kelly GrC
- 5071, 5072, 5073. HISTORY OF ROME.** (3 cr per qtr) Jones, Kelly GrC
- 5100. SELECTED TOPICS IN EARLY MEDIEVAL EUROPE.** (5 cr per qtr; prereq 1101 or equiv or §) Bachrach, Reyerson
From the fall of the Roman Empire to the first feudal age and the rebirth of Western economy.

- 5111, 5112. EUROPE IN HIGH MIDDLE AGES.** (4 cr per qtr) Bachrach, Reyerson
 5111: The medieval revival, 900-1150. 5112: The crisis of medieval civilization, 1150-1350. GrC
- 5113, 5114. MEDIEVAL CITIES.** (4 cr per qtr; prereq one course in medieval history or §) Reyerson
 Western European cities from the fall of the Roman Empire to the Renaissance. 5113: 300-1200. 5114: 1200-1500. GrC
- 5115, 5116. MEDIEVAL LATIN HISTORIANS.** (4 cr per qtr; prereq good reading knowledge of Latin) Bachrach
 The writing of history in Western Europe during the Middle Ages. The philosophy and techniques of research by medieval historians and chroniclers; history as literature; the value of medieval histories to modern research scholars. All work will be done with original Latin texts. GrC
- 5131, 5132, 5133. BYZANTINE HISTORY.** (3 cr per qtr) Jones
 5131: Later Roman Empire to 565. 5132: Rise of Byzantium to 976. 5133: From Basil II to 1453. GrC
- 5134f, 5135w, 5136s. MEDIEVAL AND EARLY MODERN RUSSIAN HISTORY.** (4 cr per qtr) Noonan
 5134: Kievan Russia, 850-1240. 5135: Mongol conquest and rise of Muscovy, 1240-1530. 5136: From Ivan the Terrible to Peter the Great, 1530-1700. GrC
- 5141, 5142, 5143. ENGLISH CONSTITUTIONAL HISTORY.** (4 cr per qtr; prereq jr, sr, or grad student) Samaha
 Evolution of English Constitution from Norman conquest to today. Cultural values and the tension between individualism and community that shaped English public law; their importance as an element in the evolution of American constitutional development. GrC
- 5151, 5152, 5153. MODERN ENGLAND: TUDOR AND STUART PERIODS.** (4 cr per qtr) Lehman
 5151: Henry VIII and the English Reformation. 5152: The age of Elizabeth I, 1558-1625. 5153: The English Civil War and the Restoration, 1625-1689. GrC
- 5171f, 5172w, 5173s. MODERN ENGLAND: 1783 TO PRESENT.** (4 cr per qtr) Altholz
 5171: 1783 to 1846, the triumph of the middle class. 5172: 1846 to 1901, Victorian era. 5173: 1901 to 1951, war and social change. GrC
- 5201, 5202. EARLY MODERN EUROPE.** (4 cr per qtr; offered when feasible) Bamford
 5201: Reformation and religious wars to 1648. 5202: The age of absolutism. GrC
- 5211. FRANCE IN THE OLD RÉGIME.** (4 cr) Bamford
 From the origins of France to the Revolution of 1789. GrC
- 5212. FRENCH REVOLUTION AND NAPOLEON.** (4 cr) Bamford
 France and the Revolution, 1789-1799. GrC
- 5215. SPAIN UNDER THE HABSBURGS, 1516-1701.** (4 cr) Phillips
 The Golden Age of Spanish history. The Habsburg family, internal government. Spain in European politics, culture and society, the American empire, agriculture and commerce, Spain's decline. GrC
- 5216. SPAIN FROM 1700 TO THE PRESENT.** (4 cr) Phillips
 The beginning of the Bourbon dynasty; 18th-century Enlightenment; Napoleonic invasion; Carlist wars; Federal Republic; Bourbon Restoration of 19th century; Republic and Civil War; France régime; recent restoration of the Bourbons. Modern Spain. GrC
- 5231. MODERN FRANCE.** (5 cr) Munholland
 French society and politics since 1848. GrC
- 5241, 5242, 5243. HISTORY OF GERMANY.** (4 cr per qtr) Pflanze
 The development of Germany from the Middle Ages through the Weimar Republic. 5241: From 911 to 1648. 5242: From 1648 to 1815. 5243: From 1815 to 1933. GrC
- 5244, 5245. CENTRAL EUROPE.** (4 cr per qtr; prereq 1003 or equiv) Wright
 5244: To the Congress of Vienna. 5245: Since 1815. GrC
- 5247. HISTORY OF AUSTRIA.** (4 cr) Wright
 From the 16th century through the Second Republic. GrC
- 5251. WOMEN IN SCANDINAVIA.** (4 cr) Gold
 Women's position in Scandinavia from the 19th century to the present. GrC
- 5252. DEVELOPMENT OF THE SCANDINAVIAN WELFARE STATE.** (4 cr) Gold
 Internal developments since the mid-19th century that have led to the creation of modern welfare states. GrC

Course Descriptions—Major Sequences

- 5264. MODERN RUSSIA: 18TH-CENTURY BACKGROUND.** (4 cr) Stavrou
Foundation of the Russian Empire, modernization and expansion under Peter the Great and Catherine the Great. Russia's Europeanization. GrC
- 5265. MODERN RUSSIA: 19TH CENTURY.** (4 cr) Stavrou
Political, social, and cultural developments from Alexander I to the 1905 revolution. The revolutionary movement and the consequences of the emancipation of the serfs; Russian industrialization. GrC
- 5266. MODERN RUSSIA: THE 20TH CENTURY.** (4 cr) Stavrou
Fall of the Russian monarchy, revolutions, and Soviet regime. GrC
- 5274, 5275. MODERN NEAR EAST: OTTOMAN EMPIRE AND SUCCESSOR STATES.** (4 cr per qtr) Stavrou
5274: The 19th century; 18th-century background and Ottoman institutions. 5275: From the Congress of Berlin to the present; the rise of Near Eastern nationalism. GrC
- 5276. INTELLECTUAL AND CULTURAL HISTORY OF MODERN GREECE.** (5 cr) Stavrou
Literary and cultural contributions of modern Greece in national and European contexts. GrC
- 5279. RELIGIOUS HISTORY OF MODERN EUROPE.** (4 cr) Altholz
Churches and religious movements in Europe from 1648 to the early 20th century; issues of church and society and the impact of secular thought upon religion. GrC
- 5281, 5282, 5283. INTELLECTUAL AND CULTURAL HISTORY OF MODERN EUROPE.** (4 cr per qtr) Thayer
5281: Aesthetic, historical, and political thought from Vico to Arnold. 5282: Marxism and alternative contemporary critics of industrial and national Europe. 5283: The development of modern historicism and its critics—history and social sciences in the late 19th and 20th centuries. GrC
- 5284, 5285, 5286. DIPLOMATIC HISTORY OF EUROPE IN THE 19TH AND 20TH CENTURIES.** (4 cr per qtr) Kieft
5284: 1789-1871. French Revolution and Napoleonic wars, the Congress of Vienna, the 1848 revolutions, unification of Germany and Italy, the Eastern question (Middle East). 5285: 1871-1918. The Bismarck alliance system, the Eastern question, overseas imperialism, World War I. 5286: 1918 to present. Post-World War I, causes of World War II, the Cold War, and the Middle East. GrC
- 5287. DIPLOMATIC HISTORY OF EUROPE FROM 1648 TO 1789.** (4 cr) Kieft
The rise of European "great powers" from the Thirty Years War to the French Revolution; the careers of statesmen such as Louis XIV, Eugene of Savoy, Frederick the Great. GrC
- 5289. HISTORY OF EUROPEAN PENAL SYSTEMS.** (4 cr) Bamford
Comparative analysis of medieval, early modern, and 19th-century European systems. GrC
- 5294, 5295. SOCIAL AND ECONOMIC HISTORY OF RUSSIA AND EASTERN EUROPE.** (4 cr per qtr) Rudolph
5294: Pre-1917. The relationship between economic and social change; serfdom and its abolition; early industrialization and its impact. 5295: 1917 to the present. Economic and social structure and change; Soviet industrialization and modern socialist economies. GrC
- 5331, 5332. AMERICAN CONSTITUTIONAL HISTORY.** (4 cr per qtr) Murphy
5331: English and colonial background through the middle period. 5332: The politics of justice in modern America. GrC
- 5341, 5342. AMERICAN ECONOMIC HISTORY.** (4 cr per qtr) Green
5341: Colonial period to 1865. 5342: 1865 to present. GrC
- 5344, 5345. HISTORY OF AMERICAN LABOR.** (4 cr per qtr) Berman
5344: Preindustrial experience and early industrialization. 5345: Labor in the mature industrial society. GrC
- 5371, 5372. RECENT INTELLECTUAL HISTORY OF THE UNITED STATES.** (4 cr per qtr) Noble
Competing views about the nature of American cultural identity from the 1940's to the present. GrC
- 5379. PROBLEMS IN COLONIAL AMERICAN HISTORY.** (4 cr; prereq 3801 or 3802 or #) Menard
Specific problems in colonial intellectual and cultural history. GrC
- 5389. RUSSIAN-AMERICAN RELATIONS, 1917 TO PRESENT.** (4 cr) Brauer
Russian-American relations since the Russian Revolution; political, diplomatic, economic, and military problems and American foreign policy. GrC
- 5419. HISTORY OF ARGENTINA.** (4 cr) McCaa
Political, social, and economic history of Argentina since the late 18th century. GrC

- 5420. TOPICS IN LATIN AMERICAN HISTORY.** (4 cr per qtr; prereq §) McCaa, Schwartz
Historical themes common to the entire Latin American area. Course content changes from quarter to quarter. GrC
- 5421, 5422. HISTORY OF BRAZIL.** (4 cr per qtr) Schwartz
5421: Survey of colonial Brazilian development, 1500-1808. 5422: Modern Brazil, 1808 to present. GrC
- 5424, 5425. HISTORY OF MEXICO.** (4 cr per qtr) Schwartz
Political, social, and economic history of Mexico. 5424: Pre-Columbian period through independence. 5425: Development of the Mexican nation. GrC
- 5426. HISTORY OF THE ANDEAN REPUBLICS.** (4 cr) McCaa
Comparative treatment: Bolivia, Chile, and Peru since independence. GrC
- 5429. SLAVERY IN THE AMERICAS.** (4 cr, §SSci 3507) Isaacman, Schwartz, Spear
Slavery in the Americas, from African origins of slave trade to emancipation. GrC
- 5431. ISLAM AND NATIONALISM: WEST AFRICA AND SOUTH ASIA.** (4 cr; prereq previous course work relevant to Islam, West Africa, or South Asia, or §) Kaba, Lelyveld
Religious and political ideologies and movements in two regions of Islamic civilization during European colonial domination. GrC
- 5432, 5433. PROBLEMS IN CONTEMPORARY AFRICA.** (4 cr per qtr) Kaba
5432: Historical and social developments in Africa since the 1900's. 5433: Postindependence nation building and integration. GrC
- 5444, 5445. PROBLEMS IN CENTRAL AND SOUTHERN AFRICAN HISTORY.** (4 cr per qtr; open also to sophs who have passed 1431, 1432, 1433) Isaacman
The nature and process of change in precolonial, colonial, and independent central and southern Africa. GrC
- 5447. PROBLEMS IN EAST AFRICA.** (4 cr) Isaacman
Advanced course. Focus on specific themes and methodological problems. GrC
- 5454, 5455. MUSLIMS IN MODERN INDIAN HISTORY.** (4 cr per qtr) Lelyveld
5454: Decline of the Mughals and establishment of British rule, 1757-1857. 5455: Cultural and social change; political mobilization of Indian Muslims, 1857-1947. GrC
- 5458, 5459. MODERN SOUTH ASIA: SOCIAL HISTORY.** (4 cr per qtr) Kopf, Lelyveld
Selected problems. GrC
- 5461, 5462. CHINESE HISTORY TO A.D. 1368.** (4 cr per qtr) Taylor
5461: To 211 B.C. 5462: To 1368. GrC
- 5464. EARLY MODERN CHINA: THE MING AND EARLY CH'ING, 1350-1750.** (4 cr, §3464) Farmer
For description, see 3464. GrC
- 5465. CHINA'S RESPONSE TO THE WEST, 1750-1911.** (4 cr, §3465) Farmer
For description, see 3465. GrC
- 5467. REPUBLICAN CHINA: THE NATIONALIST REVOLUTION, 1900 TO PRESENT.** (4 cr, §3467) Farmer
For description, see 3467. GrC
- 5468. PEOPLE'S REPUBLIC OF CHINA: THE COMMUNIST REVOLUTION, 1900 TO PRESENT.** (4 cr, §3468) Farmer
For description, see 3468. GrC
- 5471. 20TH-CENTURY JAPAN.** (5 cr, §3471) Marshall
For description, see 3471. GrC
- 5472. EARLY MODERN JAPAN.** (5 cr, §3472) Marshall
For description, see 3472. GrC
- 5477. STATE AND SOCIETY IN TRADITIONAL JAPAN.** (4 cr; prereq 1451 or 3451, or 1452 or 3452, or 1461 or 3461, or 1462 or 3462, or §) Taylor
Social change in China from Chou Dynasty (ca. 1000 B.C.) to ca. 1400 A.D.; origin and adaptation of the state in the changing social context. GrC
- 5489. HISTORY OF HINDUSTANI CULTURE.** (4 cr, §Indc 5533) Lelyveld GrC
- 5491. HISTORY OF BANGLADESH.** (4 cr, §Indc 5491; prereq some course work in history of South Asia) Kopf
Classical accounts of the linguistic and cultural unit, Bengal, from the 4th century B.C. to the creation of the modern state of Bangladesh in 1972. GrC

Course Descriptions—Major Sequences

Proseminars

- 5501, 5502, 5503. HISTORY OF INDIA.** (4 cr per qtr; prereq §) Kopf, Lelyveld GrC
- 5510. TOPICS IN EAST ASIAN HISTORY.** (4 cr per qtr; prereq §) Farmer, Marshall, Taylor
Readings in Western languages on history of China, Japan, and associated areas such as Vietnam and Korea for graduate students, especially those from other departments or areas within history preparing secondary fields in East Asian history. GrC
- 5511, 5512. CHINESE HISTORY TO A.D. 1368.** (4 cr per qtr; prereq §) Taylor GrC
- 5514, 5515. MODERN CHINA.** (4 cr per qtr; prereq §) Farmer
Topics and issues in historical literature. GrC
- 5517, 5518. 20TH-CENTURY CHINESE HISTORY.** (3-5 cr per qtr; prereq §) Farmer
Topics, issues, and research strategies. GrC
- 5519. 20TH-CENTURY CHINESE HISTORY.** (5 cr; prereq §) Farmer
Political and intellectual change in the Chinese revolution. GrC
- 5521. MODERN JAPANESE HISTORY.** (5 cr; prereq §) Marshall GrC
- 5522. CURRENT INTERPRETATIONS AND TOPICS IN JAPANESE HISTORY.** (5 cr; prereq §)
Marshall GrC
- 5534. SOUTHEAST ASIAN HISTORY.** (4 cr; prereq §) GrC
- 5547. HISTORIOGRAPHY OF MODERN SOUTH ASIA.** (5 cr; prereq §) Kopf, Lelyveld
Historical literature of modern South Asia; the major problem facing students in the field. GrC
- 5551f-5552w-5553s†. ANCIENT HISTORY.** (3 cr per qtr; prereq §) Jones GrC
- 5561f-5562w-5563s†. ANCIENT HISTORY.** (3 cr per qtr; prereq §) Kelly GrC
- 5601f-5602w-5603s†. EARLY MEDIEVAL WESTERN EUROPE.** (3 cr per qtr; prereq 1101 or 3051 or equiv, reading knowledge of French or German, §) Bachrach, Reyerson GrC
- 5611f-5612w-5613s. MEDIEVAL HISTORY.** (3 cr per qtr; prereq 1 yr of medieval history or equiv, reading knowledge of French or German, §) Bachrach, Reyerson GrC
- 5621, 5622. EUROPE IN THE RENAISSANCE.** (3 cr per qtr; prereq §; offered alt yrs) Tracy
5621: Italian Renaissance. 5622: France, Germany, and the Low Countries. GrC
- 5625, 5626. EUROPE IN THE 16TH CENTURY.** (3 cr per qtr; prereq §; offered alt yrs) Tracy
5625: German Reformation. 5626: France and the Netherlands. GrC
- 5634, 5635. MEDIEVAL RUSSIAN HISTORY.** (3 cr per qtr; prereq 5134, 5135, 5136, reading knowledge of Russian, French, or German, §) Noonan GrC
- 5641f-5642w-5643s. MEDIEVAL ENGLISH HISTORY.** (3 cr per qtr; prereq 1 yr of medieval history or equiv, reading knowledge of French or German, §; offered when feasible) Bachrach, Reyerson GrC
- 5651f-5652w-5653s†. ENGLISH HISTORY: TUDOR AND STUART PERIODS.** (3 cr per qtr; prereq §) Lehmsberg GrC
- 5671f-5672w-5673s†. MODERN ENGLAND: 1783 TO THE PRESENT.** (3 cr per qtr; prereq §) Altholz GrC
- 5711f-5712w-5713s†. FRENCH REVOLUTION AND NAPOLEON.** (4 cr per qtr; prereq §) Bamford GrC
- 5721, 5722. EUROPE IN THE 20TH CENTURY.** (4 cr per qtr; prereq §) Munholland
5721: Impact of World War I and the Depression. 5722: World War II to the present. GrC
- 5731f-5732w-5733s†. 17TH-CENTURY FRANCE.** (4 cr per qtr; prereq reading knowledge of French, §) Bamford GrC
- 5741f-5742w†. GERMANY AND CENTRAL EUROPE IN 18TH CENTURY.** (3 cr per qtr; prereq §) Wright GrC
- 5744-5745-5746†. 19TH-CENTURY GERMANY.** (3 cr per qtr; prereq 5242, 5243, reading knowledge of German) Pflanze GrC
- 5761f-5762w-5763s. RUSSIAN HISTORY.** (4 cr per qtr; prereq 5136, reading knowledge of Russian, German, or French, §) Stavrou GrC
- 5772-5773†. SCANDINAVIAN HISTORY.** (4 cr per qtr; prereq §) Gold GrC
- 5774. READINGS IN THE MODERN NEAR EAST.** (4 cr; prereq 5274, 5275, §) Stavrou
Disruptive forces in the Ottoman Empire during its last 2 centuries. Role of and relations between Islamic and non-Islamic groups of the Empire. GrC

- 5777-5778†. HISTORY OF THE HAPSBURG MONARCHY.** (3 cr per qtr) Wright GrC
- 5781-5782†. MODERN EUROPEAN INTELLECTUAL HISTORY.** (3 cr per qtr; prereq #) Thayer GrC
- 5784, 5785†. DIPLOMATIC HISTORY OF 19TH- AND 20TH-CENTURY EUROPE.** (3 cr per qtr; prereq #) Kieft
5784: From 1815 to 1914. Historical literature on the Congress of Vienna, unification of Italy and Germany, Bismarck alliance system, other events. 5785: 1914 to present. World War I, Paris Peace Conference, origins of World War II, causes of the Cold War. GrC
- 5791f-5792w-5793s†. SOCIAL AND ECONOMIC HISTORY OF MODERN EUROPE SINCE 1750.** (3 cr per qtr; prereq #) Rudolph GrC
- 5794, 5795, 5796. HISTORY OF EUROPEAN COMMERCE.** (4 cr per qtr; prereq #) Bamford
5794: The Mediterranean region. 5795: The Atlantic and the Americas. 5796: Europe and the East. GrC
- 5797. METHODS OF HISTORICAL DEMOGRAPHY.** (4 cr; prereq #) Phillips, McCaa
Study and analysis of past population and its relation to other historical developments. Birth, marriage and the family, household structure, diseases, death, the impact of industrialization and urbanization in various areas and times. GrC
- 5801-5802†. 17TH- AND 18TH-CENTURY AMERICAN HISTORY.** (4 cr per qtr; prereq #) Menard GrC
- 5804-5805†. THE AMERICAN REVOLUTION.** (4 cr per qtr; prereq #) Howe
The American Revolution: its colonial and imperial background and its internal development through the federal Constitution. GrC
- 5806-5807†. JACKSONIAN AMERICA.** (4 cr per qtr; prereq #) Howe
The developing republic from the perspective of the Jacksonian era. GrC
- 5817-5818†. 19TH-CENTURY U.S. POLITICAL HISTORY.** (4 cr per qtr; prereq #) Arsenault GrC
- 5821-5822†. AMERICAN HISTORY IN 20TH CENTURY.** (4 cr per qtr; prereq #) Chambers GrC
- 5831, 5832. AMERICAN POLITICAL AND CONSTITUTIONAL HISTORY.** (4 cr per qtr; prereq #) Murphy GrC
- 5841-5842-5843. AMERICAN ECONOMIC HISTORY.** (4 cr per qtr; prereq #) Green GrC
- 5844f-5845w-5846s. AMERICAN LABOR HISTORY.** (4 cr per qtr; prereq #) Berman GrC
- 5854-5855†. AMERICAN URBAN HISTORY.** (4 cr per qtr; prereq #) Modell GrC
- 5861-5862†. HISTORY OF AMERICAN IMMIGRATION.** (4 cr per qtr; prereq #) Vecoli
Readings in historiography of immigration and ethnic groups. GrC
- 5864, 5865. AFRO-AMERICAN HISTORY.** (4 cr per qtr) GrC
- 5871f-5872w†. INTELLECTUAL HISTORY OF UNITED STATES IN 19TH, 20TH CENTURIES.** (4 cr per qtr; prereq #) Noble
Readings of current historians about ideas that express the paradigmatic conflicts in the interpretation of American culture. GrC
- 5881, 5882. AMERICAN FOREIGN RELATIONS.** (4 cr per qtr; prereq #) Brauer GrC
- 5901f-5902w-5903s†. LATIN AMERICAN HISTORY.** (5 cr per qtr; prereq reading knowledge of Spanish, #) McCaa, Schwartz GrC
- 5930. TOPICS IN COMPARATIVE THIRD WORLD HISTORY.** (5 cr per qtr; prereq #) Isaacman, Kaba, Kopf, Lelyveld, McCaa, Schwartz
Recurring themes in Third World history. GrC
- 5931. HISTORY OF AFRICA: SOCIAL GROUPING, CONFLICTS.** (4 cr; prereq 5431, 5432, #) Kaba
The rise of social differentiations in precolonial and contemporary African societies; how this process affects formation and development. GrC
- 5932. AFRICAN HISTORIOGRAPHY.** (4 cr; prereq #) Isaacman, Kaba
Written sources of African history, from antiquity to the present; critique of content and writing. GrC
- 5939. METHODOLOGY FOR THE STUDY OF AFRICAN HISTORY.** (4 cr; prereq #) Isaacman, Kaba
The process of historical reconstruction in nonliterate societies; collection and interpretation of oral traditions. GrC
- 5941, 5942, 5943. AFRICAN HISTORY.** (3 cr per qtr; prereq #) Kaba
Research training centering on West and North Africa. GrC

Course Descriptions—Major Sequences

- 5944, 5945, 5946. AFRICAN HISTORY.** (3 cr per qtr; prereq §) Isaacman
Research training centering on East, Central, and South Africa. GrC
- 5951-5952†. HISTORY OF HISTORICAL THOUGHT.** (4 cr per qtr; prereq §) Pflanze
Development of the idea of history, Vico to the present. GrC
- 5954, 5955. INTERDISCIPLINARY APPROACHES TO HISTORY.** (4 cr per qtr; prereq §) Staff
5954: Interdisciplinary approaches. 5955: Research methods. GrC
- 5957. SOCIAL HISTORY OF ANGLO-AMERICAN LAW.** (4 cr; prereq §) Samaha
Law as a cultural and social institution, rather than as a means to social control. Law in action as opposed to law in books; law and institutions in the legal order related to social, cultural, and economic developments. GrC
- 5960. RESEARCH IN QUANTITATIVE HISTORY.** (4 cr per qtr; prereq 5011 or 5012 or 5797, §)
Modell, McCaa
Proseminar to expand projects done in 5011, 5012, or 5797. GrC
- 5961-5962. EXPANSION OF EUROPE.** (4 cr per qtr; prereq §) Bamford, Parker, Urness GrC
- 5970. DIRECTED STUDIES.** (1-15 cr per qtr; prereq §)
Qualified senior and graduate students may register for work on tutorial basis. Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (1-15 cr per qtr; prereq §)
Qualified senior and graduate students may register for work on tutorial basis.

History of Medicine (HMed)

Medical School

Staff—Chairman, Leonard G. Wilson, 510 Diehl Hall; **Director of Undergraduate Studies,** Wilson

Professor: Wilson

Assistant Professor: Eyler

The history of medicine relates the development of medicine to science and culture and to diseases prevalent during various historical periods. It explores the influence of economic and social conditions on medicine and medical institutions.

- 5024f. MEDICINE IN ANTIQUITY AND THE MIDDLE AGES.** (4 cr) Eyler
Medical knowledge, practices, and institutions in primitive, ancient Middle Eastern, Greco-Roman, and medieval societies. GrC
- 5025w. MEDICINE IN EARLY MODERN TIMES, 1500-1800.** (4 cr) Eyler
Renaissance and Enlightenment; impact of major epidemics; advances in anatomy and physiology; changing concepts of psychopathology; the rise of surgery; transformations in the medical professions and medical education. GrC
- 5026s. MEDICINE SINCE 1800: EMPHASIS ON AMERICA.** (4 cr) Eyler
Colonial and early American medical professions; leadership and influence of European medicine; public health movement; the advent of major surgery; the germ theory of disease and the therapeutic revolution; psychiatry; health care insurance. GrC
- 5102s. MEDICINE AND SOCIETY IN THE ENLIGHTENMENT.** (3 cr; prereq §; limited to 15 students) Eyler
Seminar. Interrelations of medicine and society from the late 17th to the early 19th centuries. GrC
- 5120-5130. HISTORICAL TOPICS: MEDICINE AND THE MODERN STATE.** (4 cr per qtr [16 cr max]; prereq §) Eyler
Topics vary from year to year. Emphasis on mid-18th century to the present. GrC

History of Science and Technology (HSci)

Staff—Coordinator, Roger H. Stuewer, 428 Physics

Professors: Layton, Stuewer

Associate Professor: Shapiro

Assistant Professor: Kottler

The history of science and technology studies the origins and development of science and technology and their relations to the social, cultural, and philosophical currents of their time. Courses may be taken to support existing majors as well as to broaden knowledge of the nature and development of science and technology.

1711, 1712, 1713. TECHNOLOGY AND WESTERN CIVILIZATION. (4 cr per qtr, \$3711, \$3712, \$3713) Layton

History and sociocultural relations of Western technology. *1711*: The relations of technology to culture from the Bronze Age to the Middle Ages. *1712*: Technology and science in the Renaissance; technology and the Scientific Revolution; emergence of industrialism. *1713*: Diffusion of the Industrial Revolution; technological development and its impact on industry, government, and society of the 19th and 20th centuries. GrC

1811, 1812, 1813. INTRODUCTION TO HISTORY OF SCIENCE. (4 cr per qtr, \$3811, \$3812, \$3813) Shapiro

1811: Babylonian and Egyptian science; Greek natural philosophy, mathematics, astronomy, and biology; the Aristotelian world; decline and transmission of Greek science. *1812*: Medieval background; the Scientific Revolution; the "experimental philosophy": dissecting and describing nature; anatomy, circulation, and respiration; Copernican revolution; physical world of Kepler, Galileo, Descartes, and Newton; science and the popular imagination. *1813*: 19th and 20th centuries; Newtonian triumph, romantic reaction, and modern revolution; the aether, electrical and optical, to Einstein; history of the earth; evolution before and after Darwin; nuclear physics and nuclear weapons. GrC

3201, 3202, 3203. HISTORY OF BIOLOGY. (4 cr per qtr, \$5201, \$5202, \$5203)

3201: Antiquity to 1700. Biology, medicine, and natural history in antiquity: Hippocrates, Aristotle, Galen. Revival of biology in Renaissance and 17th century: Vesalius and anatomy, Harvey and circulation. *3202*: Physiology and cell theory since 1700. Conceptual development of the various branches of modern biology: physiology, chemistry, and the experimental method; embryology, descriptive and experimental; cytology and microscopy. *3203*: Evolution and genetics since 1700. Darwin and evolution; Mendel and genetics; biology and society, race and eugenics. GrC

3711, 3712, 3713. TECHNOLOGY AND WESTERN CIVILIZATION. (4 cr per qtr, \$1711, \$1712, \$1713)

See description of 1711, 1712, 1713. GrC

3811, 3812, 3813. INTRODUCTION TO HISTORY OF SCIENCE. (4 cr per qtr, \$1811, \$1812, \$1813)

See description of 1711, 1712, 1713. GrC

3825. PHYSICS AND SOCIETY IN 20TH-CENTURY AMERICA. (4 cr, \$3835, \$5325)

Nineteenth-century heritage; 20th-century discoveries and physical theories; growth of physics in America after World War I: the intellectual migration of the 1930's; nuclear physics, the Manhattan project, and the atomic bomb; McCarthyism and Oppenheimer; current and past contributions of Minnesota physicists. GrC

3835. THE ATOMIC AGE. (4 cr, \$3825, \$5825)

Development of nuclear energy in the 20th century; construction and use of the bomb; postwar military and political impact. GrC

5111f. PHYSICAL SCIENCES IN ANTIQUITY. (4 cr) Shapiro

Mathematics and astronomy in Babylonia; Greek mathematics, Euclid and Archimedes; Aristotle's physics and cosmology; the emergence of mathematical and experimental natural science in Greece; Ptolemaic astronomy. GrC

5201, 5202, 5203. HISTORY OF BIOLOGY. (4 cr per qtr, \$3201, \$3202, \$3203)

See description of 3201, 3202, 3203. GrC

5242. EVOLUTION BEFORE AND AFTER DARWIN. (4 cr; prereq Biol 1011 or 1101 or #) Kottler

Philosophical conceptions of species; natural theology, design, and providential creation of species; Lamarck and evolution before Darwin; catastrophist and uniformitarian geology; Darwin and the background of the *Origin*; Darwin's early critics; evolutionary theory, 1882 to modern synthesis; social Darwinism. GrC

5760. SELECTED TOPICS. (1-5 cr per qtr; prereq #)

5825. PHYSICS AND SOCIETY IN 20TH-CENTURY AMERICA. (4 cr, \$3825, \$3835) Stuewer
See description of 3825. GrC

5924. HISTORY OF 19TH-CENTURY PHYSICS. (4 cr, \$Phys 5924; prereq general physics or #) Stuewer

Course Descriptions—Major Sequences

Internal conceptual developments in physics in 19th century (Young, Fresnel, Oersted, Ampere, Faraday, MacCullagh, Maxwell, Hertz, Lorentz, Lavoisier, Rumford, Dalton, Mayer, Joule, Helmholtz, Carnot, Clausius, Kelvin, Boltzmann, Mach, others). Relationships to social, philosophical, and theological influences. GrC

5925. HISTORY OF 20TH-CENTURY PHYSICS. (4 cr, §Phys 5925; prereq general physics or §) Stuewer

Internal conceptual developments in relativity (Michelson, Lorentz, Poincaré, Einstein, others), quantum mechanics (Planck, Einstein, Rutherford, Bohr, Sommerfeld, Ehrenfest, Pauli, Millikan, Compton, Heisenberg, de Broglie, Schrödinger, Born, others), and nuclear physics (Chadwick, Gamow, Fermi, others). Relationships to social, philosophical, and theological influences. GrC

5970. DIRECTED STUDIES. (1-15 cr per qtr; prereq §)
Guided individual reading or study.

5990. DIRECTED RESEARCH. (1-15 cr per qtr; prereq §)

College of Home Economics

Courses carrying CLA credit, a number of which may be applied toward distribution requirements, are offered in design, family social science, food science and nutrition, and textiles and clothing. See these departmental headings. Permission to earn CLA credit in other courses is sometimes granted by the CLA Scholastic Committee and the departments concerned. Class reservations are necessary for many courses.

Honors Program

The CLA Honors program is described fully in Section I of this bulletin. Honors sections of many courses and other special honors courses offer advanced study opportunities at all undergraduate levels to students of high motivation and ability. The honors seminars for Honors program juniors and seniors and the honors colloquia, open to all freshmen and sophomores, explore topics—a large number of them of an interdisciplinary nature—not offered in regular CLA courses. Departmental honors activities and graduation with honors are included.

The Honors office, 115 Johnston Hall, provides advising and full information about current seminar and colloquium topics and other opportunities for Honors program students.

0010. HONORS COLLOQUIUM. (No cr; prereq fr or soph)

Humanities (Hum)

Staff—Chairman, Paul D'Andrea, 310 Ford Hall; **Director of Undergraduate Studies,** Gary Thomas, 364 Ford Hall

Professors: Ames, Bryan, Kwiat, Roshwald, Tapp

Associate Professors: Bauer, D'Andrea, Hershbell

Assistant Professors: Klinger, Leppert, Lincoln, Thomas

Instructor: Yu

Humanities offers integrated cross-cultural study of eras of civilization and major humanistic problems, drawing on literature, philosophy, history, the arts, and relevant aspects of the social and natural sciences. This breadth of perspective provides understanding about men and women not only as verbal or economic beings but also as heirs to and creators of civilization, concerned with values and the development of the whole person.

B.A. MAJOR SEQUENCE

Major Requirements—25 humanities cr, at least 5 in European Heritage courses and 15 in European Heritage or Modern World (no more than 10 at the 1xxx level), and 5 in any 3xxx or 5xxx humanities course except the proseminars

9 cr in humanities proseminars

45 3xxx-5xxx cr, distributed thus: 18 to 21 cr from anthropology, geography, history, linguistics, philosophy, political science, psychology, sociology; 24 to 27 cr in literature (any language, ancient or modern), history of art, history of music, history of theatre, studio arts, studio music, theatre, or oral interpretation

1001. HUMANITIES IN THE MODERN WORLD I. (5 cr, §3001, §Rhet 1301)

Old Régime, French Revolution and Napoleonic era, neoclassicism, and romanticism; Pope, Voltaire, Rousseau, Burke, Goethe, and Tolstoy. GrC,D

1002. HUMANITIES IN THE MODERN WORLD II. (5 cr, §3002, §Rhet 1302; prereq 1001)

Industrial Revolution, liberalism and socialism, individualism; Smith, Malthus, Carlyle, Marx, Ibsen, Mill, Zola, Flaubert, Tolstoy, and Dostoevski. GrC,D

1003. HUMANITIES IN THE MODERN WORLD III. (5 cr, §3003, §Rhet 1303; prereq 1002)

Impact of science and theory of evolution; religion and morals in changing world; Darwin and evolutionists, Nietzsche, Kierkegaard, Chekhov, Turgenev, Mann. GrC,D

1004. HUMANITIES IN THE MODERN WORLD IV. (5 cr, §3004, §Rhet 3381; prereq 1001 or 1002 or 1003)

Humanities between the two world wars. Communism, fascism, Freudianism, modern art and philosophy, existentialism. Lenin, Freud, Joyce, T. S. Eliot, Kafka, and others. GrC,D

1009. INTRODUCTION TO SCIENCE AND HUMANITIES. (5 cr)

The relation between science and the humanities. GrC,D

1011, 1012, 1112, 1013. EUROPEAN HERITAGE. (5 cr per qtr, §corresponding qtr of 3011, 3012, 3112, 3013...§Rhet 3321 for 1011...§Rhet 3322 for 1012 and 1112...§Rhet 3323 for 1013)

Masterpieces of European civilization from Homer to Cervantes. Literature, philosophy, theology, arts of Greece, Rome, Middle Ages, and Renaissance. Ideals and forces of continuing importance to modern world. 1011: Greek heritage. 1012: Roman heritage. 1112: Medieval heritage. 1013: Renaissance and Reformation. GrC,D

1101. THE LIFE OF THE MIND: INTRODUCTION TO METHODS IN THE HUMANITIES. (5 cr)

Ways of reading and appreciating poetry, sculpture, history, philosophy, painting, rhetoric, music, and film; works by creative figures such as Stevens, Einstein, Henry Moore, Bach, Lincoln, Plato, Genet, Euclid, Joyce, Fellini. GrA

3001, 3002, 3003. HUMANITIES IN THE MODERN WORLD. (5 cr per qtr, §corresponding qtr of 1001, 1002, 1003...§Rhet 1301 for 3001...§Rhet 1302 for 3002...§Rhet 1303 for 3003; prereq jr or sr)

Similar to 1001, 1002, 1003; more reading, papers. GrC,D

3004. HUMANITIES IN THE MODERN WORLD. (5 cr, §1004, §Rhet 3381; prereq jr or sr)

Similar to 1004; more reading, papers. GrC,D

3005. HUMANITIES IN THE MODERN WORLD V. (5 cr; prereq 1004 or 3004)

Intellectual climate of Western world since World War II. Existentialism and "the absurd," alienation, irrationalism, antihero in literature, new theology, Zen. GrC,D

3006. CREATIVE IMAGINATION IN THE 20TH CENTURY. (5 cr)

Creativity in the 20th century as seen in painters, sculptors, musicians, and writers such as Marcel Duchamp, Pablo Picasso, John Cage, and André Gide. GrC,D

3009. MAN BEFORE HISTORY. (5 cr) Ames

Search for meaning in the myth of a lost terrestrial paradise: the plain of Eden or technological mastery? Scientific evidence of the cultural advances of prehistoric man. Correlations with literature, folklore, and certain anomalies of archaeology, geography, and psychology. Readings in Campbell, Fairservis, Gordon, Milton, de Santillana. GrC

3011, 3012, 3112, 3013. EUROPEAN HERITAGE. (5 cr per qtr, §corresponding qtr of 1011, 1012, 1112, 1013...§Rhet 3321 for 3011...§Rhet 3322 for 3012 and 3112...§Rhet 3323 for 3013; prereq jr or sr)

Similar to 1011, 1012, 1112, 1013; more reading, papers. GrC,D

Course Descriptions—Major Sequences

- 3014. EUROPEAN HERITAGE: AGE OF THE BAROQUE.** (5 cr) Thomas
Seventeenth-century European culture. Relationships between philosophy, literature, art, and music. Works by Bernini, Monteverdi, Calderon, Rembrandt, Kepler, Descartes, Molière, Grimmelshausen, Handel, Bach. GrD
- 3038. THE POLITICAL NOVEL.** (5 cr; prereq jr, sr, or §)
Major authors from Stendhal to the present; theories of human nature; relationship of the individual and society; philosophy of history and political action; experience and ideology; the political novel as a genre. GrC,D
- 3044. HONORS THESIS.** (3 cr; prereq sr, candidate for magna or summa honors in humanities, Δ)
- 3045. RACIAL THOUGHT: A CONCEPTUAL SURVEY, 19TH AND 20TH CENTURIES.** (5 cr; prereq jr, sr, or §)
"Racial" thought as historically and conceptually diverse philosophic and cultural ideologies; divergent "racial" outlooks against the background of particular philosophic, scientific, and religious aspirations. Gobineau, Disraeli, Renan, Taine, Chamberlain, Putnam, Benedict, Montague, others. GrC,D
- 3049. SCIENCE AND HUMANITIES.** (5 cr; prereq jr, sr, or §)
"Warfare" between scientific and humanistic cultures; documents from Ficino and Vives to Polanyi, Koestler, Bronowski, and A. Huxley. Humanistic scholarship and methodological character of sciences; creativity in arts and sciences; science and human values. GrC,D
- 3055. THE CONCEPT OF CLASSICISM.** (5 cr; prereq jr, sr, or §)
Changing views of classicism in Europe from the 17th century to the present, studied in literary texts, aesthetic criticism, music, art, and architecture. GrD
- 3061. COUNTER-FAITHS IN CONTEMPORARY NOVELS.** (5 cr; prereq 1004 or 3004) Tapp
Camus, Clarke, Heinlein, Hesse, Huxley, Kazantzakis, Sartre, Skinner, Vonnegut as embodiments of alternative faith perspectives and sensibilities that have emerged in alienation from the Western past. GrC
- 3071. SELF-REALIZATION IN 20TH-CENTURY LITERATURE.** (5 cr; prereq jr, sr, or §) Klinger
Quest for meaning and the process of individuation in works of 20th-century literature. GrD
- 3099. THEORIES OF CULTURE.** (5 cr; prereq jr, sr, or §)
Systematic "theories of culture" from Plato to Eliot and Marcuse from the standpoint of conflicting ideologic perspectives concerning man and society. Aristotle, Augustine, Vico, Hegel, Arnold, Dilthey, Croce, Cassirer, others. GrC
- 3101, 3102, 3103. MEANING OF HUMANITY, SOCIETY AND TECHNOLOGY, COMMUNITY.** (4 cr per qtr) Roshwald
3101: The essence of man and the factors determining man's course; theories such as those of Marx, Freud, Plato. *3102:* Impact of technology on human conditions; the attitude of man toward technology, examined philosophically and sociologically. *3103:* Meaning of man as a social being in groups in which humans participate. GrC,D
- 3104, 3105, 3106. LIBERTY: A CONCEPTUAL AND INSTITUTIONAL ANALYSIS.** (3 cr per qtr; prereq 3104 for 3105...3105 for 3106 or §) Roshwald
3104: Meaning of liberty, in theory and practice. Individual and collective liberty. Liberty and civilization. Conflict among different values of liberty. *3105:* Liberty and the comparative study of civilizations. How different civilizations deal with varieties of liberties. *3106:* Colloquium based on the implications of 3104 and 3105. GrC,D
- 3204. THE MODERN GREEK EXPERIENCE.** (5 cr)
Modern Greek literary and cultural contributions as symbols of national frustrations, aspirations, and accomplishments. GrC
- 3301. A TIME TO LAUGH: A STUDY OF THE COMIC SPIRIT.** (5 cr) D'Andrea
Interdisciplinary survey of comedy through time and across world cultures in literature, drama, folk ritual and tale, social convention, language, sport, film. GrC,D
- 3501, 3502, 3503. COMPARATIVE SOTERIOMORPHISM.** (4 cr per qtr; prereq 3501 or 3502 for 3503) Tapp
"Saviors" of the past: the insights they afford into the creation, maintenance, and changing of humankind's values. Traditions surrounding them as literary and philosophical imagination, as art history, and as mirrors of psychosocial structures. *3501:* Krishna through the ages. *3502:* Buddha through the ages. *3503:* Jesus through the ages. GrC
- 3755. ART AND IDEOLOGY IN FILM.** (5 cr)
Art and ideology in the medium of the film. Russia after 1918, Germany, France, and America in the 1920's and 1930's, wartime Germany and Japan, postwar recovery, the search for a modern ideology. GrD
- 3910. TOPICS IN THE HUMANITIES.** (4 cr per qtr; prereq jr, sr or §)
Topics specified in the *Class Schedule*.

- 3910H. HONORS COURSE: TOPICS IN THE HUMANITIES.** (4 cr per qtr; prereq jr, sr, or #)
Topics specified in the *Class Schedule*.
- 3920. TOPICS IN THE HUMANITIES.** (4 cr per qtr; prereq jr, sr, or #)
Topics specified in the *Class Schedule*.
- 3970. DIRECTED STUDIES.** (Cr ar; prereq #)
Guided individual reading or study.
- 3980. DIRECTED INSTRUCTION.** (1-3 cr per qtr; prereq student must have previously taken course to be taught for cr)
- 5023. ART AND POLITICS OF THE NORTHERN RENAISSANCE.** (4 cr; prereq introductory work in one of the following: humanities, history, philosophy, political science, art history, music history, and French, Italian, Dutch, or English literature)
The relationship between politics and culture in 16th-century England, France, and the Low Countries. Focus on political and religious crises and their effects on art, music, philosophy and literature. GrC
- 5030. HUMANITIES PROSEMINAR.** (3 cr per qtr; prereq sr; limited to 15 students)
Integrated review of humanities materials: arts, sciences, and civilization.
- 5030H. HONORS COURSE: HUMANITIES PROSEMINAR.** (3 cr per qtr; for honors candidates in humanities and others with overall grade average of B or better; prereq sr and #; limited to 15 students)
See 5030.
- 5063. POLITICAL THEORY AND UTOPIA.** (4 cr, §Pol 5663; prereq Pol 1001 or 9 cr social science or #)
Great utopias from viewpoint of political theorist; idea of planning in ideal states; achievement of utopia; stability and change in great utopias; problem of authority and law; anarchist, socialist, and conservative utopias. GrD
- 5910. TOPICS IN THE HUMANITIES.** (3-5 cr per qtr [15 cr max]; prereq jr, sr, or grad student)
Topics specified in the *Class Schedule*.

INDIC

See South Asian Studies.

Individually Designed Interdepartmental Majors (IDIM)

Staff—*Program Advisers*, Judith Green and Michael Sweet, 114 Johnston Hall

This program is planned for students who wish to put together an interdisciplinary major that combines three or more subject areas. IDIM advisers and faculty members assist in designing coherent programs. Because this major embraces several subject areas, it involves a large credit total. For this reason it is desirable to start course planning in the sophomore or even freshman year.

B.A. MAJOR REQUIREMENTS

80 cr (60 of them at 3xxx or 5xxx level) approved by an IDIM adviser and three faculty members as an integrated program

Senior project (3 cr)—a “product” such as a written report or an artistic work submitted for adviser-faculty evaluation

The “30 cr outside the major” requirement does not apply.

Interdepartmental Study (ID)

Interdepartmental directed study registration provides opportunity for individual students to plan and carry out study and research in topics that do not fall within

Course Descriptions—Major Sequences

the scope of an existing department or program. These opportunities, especially appropriate for interdepartmental majors, are available to all CLA students.

A student in an interdepartmental course works with an adviser in the Office for Special Learning Opportunities (OSLO), 201a Wesbrook Hall, and with two or more instructors. The course outline, which must receive OSLO approval, should identify objectives, the subject matter to be studied, proposed study methods, means of evaluation, and indicate the consent of instructors involved. Further information is available at OSLO.

Similar opportunities are available under LFA 3970, NSci 3970, and SSci 3970.

3970. DIRECTED STUDIES. (3-15 cr per qtr; prereq permission of OSLO staff)
Individual readings and research on topics that cross departmental lines.

International Relations (IntR)

Staff—Director, to be named

Adjunct Faculty—Professors: Brauer (History), Browne (Speech-Communication), Carter (Journalism), Chipman (Economics), Coen (Economics), Ellenbogen (Sociology), Floripe (Spanish and Portuguese), Holt (Political Science), Howell (Speech-Communication), Kopf (History), Lindsay (Journalism), McLaughlin (Political Science), Rogers (World Affairs Center), Schwartzberg (Geography), Smith (Economics), Swanson (Agricultural Education)

Associate Professors: Benjamin (Political Science), Blue (Political Science), Hopmann (Political Science), Kennedy (Sociology), Kieft (History), Munholland (History), Wynia (Political Science)

Assistant Professors: Job (Political Science), Nimtz (Political Science), Schoettle (Political Science), Walcott (Political Science)

International relations is concerned with human activities that connect and cross the boundaries between nations and cultural areas.

The program offers multidisciplinary curricula to acquaint students with methodological and substantive approaches to international relations. The curricula include courses from the social sciences and humanities and, in some concentrations, from professional schools and colleges.

The three major curricula are general international relations, international development, and international and cross-cultural communication. Each includes a core of required courses from at least four subject areas, electives to satisfy individual interests and objectives, and opportunity to select among the program's interdisciplinary proseminars, designed to integrate the diverse approaches to which students will be exposed. Students without equivalent proficiency are required to complete specified 3xxx-5xxx courses in one modern foreign language.

The diversity of the requirements necessitates an early start in planning the major program. Students are urged to complete preparatory work, including the foreign language requirement, in the freshman and sophomore years.

The booklet *Programs in International Relations*, detailing requirements, may be obtained from the Harold Scott Quigley Center of International Studies, 1246 Social Sciences Building.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Requirements vary according to the major chosen. See *Programs in International Relations*.

Major Requirements—At least 48 cr in one area of concentration, approved by major advisers. Satisfaction of second language requirement. See *Programs in International Relations*.

- 3091f,w,s. HONORS COURSE: SUPERVISED RESEARCH PAPER.** (3 cr; prereq sr honors candidate in international relations, Δ)
- 5801. INTERNATIONAL PEACE AND VIOLENCE.** (4 cr, \$Pol 5885; prereq Pol 1025 or 1026 or 3825 or 3826...5884 recommended) Hopmann, Job
Normative issues surrounding international violence; causes of violence and mechanisms for creating international peace; alternative structures of the international system related to limitation of violence and attainment of peace. GrC
- 5802. THE PROSPECTIVE WORLD ECONOMY.** (4 cr, \$Econ 5421; prereq Econ 5401 or 5431 or \$) Smith
Alternative patterns for a future world economy, implications for economic welfare of nations. World institutions and their relation to growth and survival problems in a world economy. GrC
- 5803. THE STEADY STATE EARTH.** (4 cr) Blackshear
Constraints imposed by physical factors on the options available. GrC
- 5804. MODERNIZATION, EQUALITY, AND SOCIAL JUSTICE.** (4 cr; prereq 12 cr in social sciences) Ellenbogen, Henry
Effects of modernization on distribution of scarce resources and civil rights. Forms of intervention to modify the opportunity structure; policy alternatives; comparative approach between and within nations. GrC
- 5811. INTERNATIONAL DIPLOMACY, BARGAINING, AND NEGOTIATION.** (4 cr, \$Pol 5886; prereq Pol 1025 or 1026 or 3825 or 3826...5884 recommended) Hopmann, Walcott
Strategies and processes of international diplomacy, bargaining, and negotiation to resolve contemporary international disputes, on such topics as international security, arms limitation, and disarmament. GrC
- 5812. REGIONAL AND FUNCTIONAL INTERNATIONAL ORGANIZATIONS.** (4 cr, \$Pol 5888; prereq Pol 1025 or 3825 or \$)
Global and regional organization for economic, social, cultural, and humanitarian cooperation; comparison of functional and political organizations; economic and political integration; empirical and practical approaches to future world order problems. GrC
- 5831. ANALYSIS OF WORLD FUTURES MODELS.** (4 cr; prereq \$) Job, Starr
Continued growth and depletion of global resources; "quantitative models" to analyze large social systems; world futures models; projections of future world states; alternatives and limitations.
- 5901. APPROACHES TO INTERNATIONAL RELATIONS.** (4 cr; prereq major in international relations)
Proseminar. Synthesis of approaches of different academic disciplines to study of major problems of international relations. Topics vary yearly.
- 5902. DECISION MAKING IN INTERNATIONAL RELATIONS.** (4 cr; prereq major in international relations)
Proseminar. Synthesis of approaches to international relations through student participation in decision-making roles in experimental, simulated situations.
- 5903. ANALYSIS OF INTERNATIONAL POLICY PROBLEMS.** (4 cr; prereq major in international relations)
Proseminar. Synthesis of analytic approaches to international policy problems. Topics vary yearly.
- PA 5301. THE MULTINATIONAL CORPORATION.** (4 cr; prereq Econ 1001, 1002 or equiv) Kudrle
Economic, political, social, and legal significance of the multinational corporation. Major policy options open to individual governments and international bodies. GrC
- Pol 5774. COMPARATIVE POLITICAL PARTICIPATION.** (4 cr; prereq 1051 or \$; offered alt yrs) Blue, Nimitz, Shively
Comparative study of the relationship of mass political behavior to governmental activity. GrC

ISLAMIC

See Near and Middle Eastern Studies.

Course Descriptions—Major Requirements

ITALIAN

See French and Italian.

JAPANESE

See East Asian Languages.

JEWISH STUDIES

See Near and Middle Eastern Studies.

Journalism and Mass Communication (Jour)

Staff—*Director*, Robert L. Jones, 112 Murphy Hall; *Head*, News-Editorial Sequence, George S. Hage; *Head*, Advertising Sequence, Willard L. Thompson; *Head*, Broadcasting Sequence, Irving E. Fang; *Head*, Photographic Communication Sequence, R. Smith Schuneman

Professors: Carter, Emery, Fang, Gillmor, Hage, Jones, Lindsay, Schuneman, Sim, Thompson, Tichenor, Wilson

Associate Professors: Brovald, Dennis, Harris, Wackman, Ward

Assistant Professor: Ismach

Instructors: Brown, Freund, Mark (lecturer)

Study in the School of Journalism and Mass Communication concerns the theories and practices of mass communication media, historical and contemporary, and the development of skills and techniques necessary for successful practice of written, oral, and visual mass communication.

Preparation for careers in these fields rests on a broad liberal education, a knowledge of the social and professional responsibilities of the journalist, and beginning competence in journalistic procedures. About three-fourths of the work of a journalism major is in social science and humanities courses and other areas of liberal education, and the remainder in journalism courses (many of which have liberal education emphases).

The school offers B.A. programs in four professional areas, M.A. programs in professional and research program areas, and Ph.D. programs in mass communication. The school encourages qualified students to consider coordination of B.A. with prospective M.A. work, through careful planning with advisers in the junior year. Such a program yields expanded specialized preparation for professional or research activities. It may involve a double or an interdepartmental major.

Admission—The school enrolls a limited number of undergraduate majors annually. Applications are made after prejournalism courses 1001, 1005, and 1101 or 1201 or 1301 and the Minnesota English Test (MET) are completed. Applicants should not have completed more than 12 journalism credits. Applications are to be filed during the first 2 weeks of the quarter in which an applicant will complete 75 credits. Information about application should be obtained from the school's director of admissions well in advance of application. (This admissions plan does not apply to students who completed 39 CLA credits before September 1, 1976, and who were enrolled at the University of Minnesota in 1975-1976.)

B.A. MAJOR SEQUENCES

All courses for the major except those identified with a double asterisk (**) must be taken on the A-N basis. No B.A. program may include more than 48 journalism credits.

Required Preparatory Courses—All sequences—1001, 1005, Econ 1001-1002** or 1014-1015** or 3001-3002**, Pol 1001**, Hist 1301-1302** or 3822-3823**, news-editorial sequence—1101, Comp 1027**, advertising sequence—1201, Comp 1027**, Psy 1001**; broadcast journalism sequence—1101, Spch 1101 or 1102; photographic communication sequence—1101, 1301. Typewriting skill expected of all students.

Major Requirements—*News-Editorial Sequence*—3121, 3155, 3776, 5131 or 5133, 5501, 5601; one course from 5141, 5143, 5144, 5171, 3173; 8 additional 3xxx or 5xxx journalism cr for minimum of 32

Advertising Sequence—3231, 3241, 5251, 5501, 5261, 5274; Mktg 3000; advertising management emphasis: 5263 and 4 additional 3xxx or 5xxx journalism cr; creative emphasis: 5272 and 4 additional 3xxx or 5xxx journalism cr (5221, 5233, 5252 recommended)

Broadcast Journalism Sequence—3121, 3401, 3451, 3776, 5402 or 5444, 5442, 5611; one or more courses chosen from 5501, 5615, 5721; 4 additional 3xxx or 5xxx journalism cr (3421, 3486, 5444 recommended); Spch 3201, 3203 or 3204 (3211, 5202, 5204, 5231, 5232 recommended)

Photographic Communication Sequence—3776, 5353 or 3401, 5376 or 5402, 3121 or 3486, 5615, 5501 or 5721; 8 additional 3xxx or 5xxx journalism cr for minimum of 30. Spch 3201, 3204, ArtS 3704, 3705 or 5701, 5702 recommended

Specialized Professional Emphases—Programs reinforcing professional directions, often comprising 5 years of study, may be planned in consultation with advisers. The wide range of career opportunities to which the programs identified above may lead is described in the *School of Journalism Bulletin* (available in 111 Murphy Hall). Among the special majors that may be arranged, with adviser consultation, are broadcast advertising, creative graphic arts, magazine and freelance journalism, media management, public relations, and (in collaboration with the College of Agriculture) agricultural journalism.

Students expecting to specialize at the graduate level in advertising or mass communication research should elect 5531 and work in statistics chosen in consultation with graduate advisers.

General Education—1011 and 3021 are planned especially for nonmajors. 1001 and 1005 are open without prerequisites. Courses dealing primarily with social aspects of mass communication, open to nonprofessional students, are 5171, 5251, 5252, 5501, 5531, 5549, 5601, 5603, 5606, 5611, 5615, 5721, 5777, 5801, 5825.

1001f,w,s. INTRODUCTION TO MASS COMMUNICATIONS. (2 cr; English composition or communication recommended) Brovald

Nature, functions, and responsibilities of communication media and agencies from professional point of view. News, opinion, entertainment, and persuasion functions; specialized communication; aspects of advertising. GrA

1005w,s. VISUAL COMMUNICATION. (3 cr; prereq 3rd-qr fr) Schuneman, Brown

Visual communication in news and advertising, print and electronic media. Evaluation of current typography, photography. Lectures (CCTV), recitations.

1011f,w,s. JOURNALISTIC TECHNIQUES FOR NONMAJORS. (5 cr, \$AgJo 1011; prereq English composition or equiv, C avg) Sim

General view of printed mass media. Forms of news and feature stories; mass communication law. Publication editing, headlines, makeup for business publications. Laboratory. GrA

1101f,s. REPORTING. (5 cr; prereq C or better in 1001, 1005 or grad student...type 25 wpm, Δ) Fang, Hage, Ismach, Sim, Ward

Fact gathering and journalistic writing. Problems in judgment and handling of news and features. GrA

Course Descriptions—Major Requirements

- 1201f,w,s. PRINCIPLES OF ADVERTISING.** (4 cr; 1001 recommended for journalism majors)
 Freund, Thompson, Mark
 Theory, principles, and functions of advertising; its role in economic, social, and marketing structure. Newspapers, magazines, radio, television as advertising media.
- 1301f,w,s. BEGINNING PHOTOJOURNALISM.** (4 cr; prereq soph with C or better in 1001, 1005, Δ) Schuneman, Brown
 Photography as creative communication. Fundamentals of photography; use of news cameras; darkroom processes. Laboratory.

Courses at 3xxx and 5xxx levels are open to students with fewer than 84 cr only by permission of the Scholastic Committee.

Survey Courses

- 3021s. MASS COMMUNICATION AND THE NEWS.** (4 cr; not open to journalism majors) Fang, Lindsay, Sim
 The mass media in contemporary society: structure, organization, professional norms, audience composition. Press and broadcasting; role of media in news dissemination. GrC
- 3051. SURVEY OF JOURNALISM TECHNIQUES.** (5 cr; open only to grad or adult special students without undergrad majors or minors; offered when feasible)
 Concentrated survey of and practice in principal journalistic techniques. Fundamentals of fact gathering and writing, editing for news media. Laboratory.

News-Editorial

- 3121f,w,s. PUBLIC AFFAIRS REPORTING.** (4 cr; prereq 2.50 avg in 1001, 1005, and 1101...Comp 1027 and 40 wpm typing skill where sequence requires...Δ) Hage, Ismach, Dennis
 Reporting and editing news of courts and municipal, county, state, and federal administrative and legislative agencies.
- 3155f,w,s. PUBLICATIONS EDITING.** (4 cr; prereq 3121, Δ) Sim, Brovald
 Selection and editing of news-editorial content of newspapers, brochures, magazines. Newspaper makeup, magazine format. Press association teletype service. Laboratory.
- 3173f,w. MAGAZINE WRITING.** (4 cr; prereq 3121, Δ) Hage
 Writing feature articles for general, class, and trade publications; market free-lance methods.
- 3176w. BUSINESS AND INDUSTRIAL JOURNALISM.** (4 cr; prereq 3173, §) Wilson
 Content, staff, design, and production of business and company publications. Gathering material and writing for the business and company press.
- 3182s. SUPERVISION OF SCHOOL PUBLICATIONS.** (4 cr; for those who plan to advise high school or college newspapers, yearbooks, magazines; prereq 1011 or 3121) Sim
 Editorial content, staff organization, editing, typography, makeup, business management.
- 3193s. COMMUNITY NEWSPAPER.** (5 cr; prereq 1101 or 1011 or §, Δ) Brovald
 The community newspaper (weekly and small daily): editorial and business aspects. News, opinion, advertising, production. Role of the editor in the community.
- 3776f. MASS COMMUNICATIONS LAW.** (4 cr; prereq 1001 or 1011, 1101 or §) Gillmor
 Origins and background of press law. The press and the First Amendment. Libel and its defenses. Confidentiality of sources. Pornography, free press, and fair trial. Freedom of information, the public's right to know. Access to the media. Privacy. Advertising law, lobbying, antitrust. Regulation of advertising. GrC
- 5131f,w,s. INTERPRETIVE REPORTING.** (4 cr; prereq sr, 3121, Δ) Carter, Ward
 Advanced problems in reporting about government, politics, social problems, and the arts.
- 5133w. SPECIALIZED REPORTING: SOCIAL AND PHYSICAL SCIENCES.** (4 cr; prereq 3121 or 3176 or §) Tichenor
 Role of journalistic communication in science; scientist-journalist relationships; communicating results of scientific investigations to public, specialized audiences, industry.
- 5141f,w. OPINION WRITING IN AMERICA.** (4 cr; prereq sr, journalism major, Δ) Carter, Emery
 Oral and written analysis of major political, economic, and social developments. Persuasive communication in newspapers and magazines; columnists; commentators.
- 5142. INTERPRETATION OF CONTEMPORARY AFFAIRS.** (4 cr; prereq sr, journalism major; offered when feasible)
 Major economic developments, their social and political impacts; interpretation in editorial and interpretive articles.

Journalism and Mass Communication

- 5143s. INTERPRETATION OF SCIENCE AND TECHNOLOGY.** (4 cr; prereq 5133, 5501 or §) Tichenor
Reporting of scientific research and technological development in mass and specialized media; science content in media; audience impact.
- 5144f. URBAN JOURNALISM I: THEORY AND PRACTICE.** (4 cr; prereq 3121, 5131, or grad student or professional experience, §, Δ) Ismach
The role and performance of mass media in reporting urban problems; urban media policy and news gathering techniques; analysis of media content; projects.
- 5171s. CRITICAL WRITING.** (4 cr; prereq a 3xxx or 5xxx writing course and §; offered 1976 and alt yrs) Hage
Book, theatre, and motion picture reviews. Analysis of leading critics and critical periodicals. Weekly reviews. GrD
- 5174w. MAGAZINE EDITING AND PRODUCTION.** (4 cr; prereq 3173 or 5376 or 5221, §, Δ) Wilson, Schuneman, Hage
Writing, editing, illustration, design, layout, photocomposition of a single-issue magazine.

Advertising

- 3231f,s. ADVERTISING GRAPHICS.** (4 cr; prereq 2.50 avg in 1001, 1005, 1201...Comp 1027 where required by sequence...type 25 wpm, Δ) Wilson
Design and layout; preparation of copy for print and film; uses of type; type legibility; illustration; printing processes.
- 3241f,s. ADVERTISING COPYWRITING.** (4 cr; prereq 2.50 avg in 1001, 1005, 1201...Comp 1027 where required by sequence...type 25 wpm, Δ) Harris
Advertising appeals and strategy; advertising for print and broadcast. Individual and group projects.
- 5221f,w. PUBLICATION GRAPHICS.** (4 cr; prereq 3121 or 3231 or 8 cr in 3xxx or 5xxx courses in art or design, Δ) Wilson
Printing processes. Technique and production of illustration. Significant developments in graphic arts technology. GrD
- 5233s. GRAPHIC DESIGN ANALYSIS.** (4 cr; prereq 3155 or 3231, 5221, or §, Δ) Wilson
Publication formats for design and efficiency; historical and current trends; field projects; creative problems.
- 5251f,w. PSYCHOLOGY OF ADVERTISING.** (4 cr. \$Psy 5751; prereq Psy 1001) Jones
Psychological principles, research techniques, and applications in advertising and selling. Consumer attitudes and behavior. Psychological mechanisms upon which advertising effectiveness depends.
- 5252s. PSYCHOLOGY OF CREATIVITY IN ADVERTISING.** (4 cr; prereq 5251 or Psy 5751; offered when feasible)
The theories, mechanisms, and correlates of creativity. Theoretical, experimental, and pragmatically derived "explanations" and examples. Supervised practicum sessions. GrC
- 5261f,w. ADVERTISING: MEDIA ANALYSIS.** (4 cr; prereq 2.50 avg in 1001, 1005, and 1201...Comp 1027 where required by sequence...Mktg 3000, type 25 wpm, Δ) Fruend
Print and electronic media, their role in advertising; selection and scheduling; rate structures and policies; evaluation and use of media and market measurements and data.
- 5263s. ADVERTISING CAMPAIGN PLANNING AND MEDIA STRATEGY.** (4 cr; prereq 3241, 5261, or §, Δ)
Relation of campaign strategy to media measurement, evaluation, and planning. Coordination of advertising campaigns; media scheduling and purchasing.
- 5272w. ADVERTISING COPY-GRAPHICS.** (4 cr; prereq sr advertising major, 3231, 3241, 5251, or §, Δ) Wilson, Harris
Copy and graphics design for print and television advertising. Preparation of ads and commercials for consumer, business, industrial, corporate, and public service advertisers.
- 5274f,w,s. CURRENT ADVERTISING DEVELOPMENTS AND PROBLEMS.** (4 cr; prereq sr advertising major or §, Δ) Thompson
Creative, management, research, media, and technical developments in advertising. Case studies.

Photographic Communication

- 5353w. PHOTOGRAPHIC COMMUNICATION.** (4 cr; prereq 1005, 1101, 3121 or §3121 or 3241 Δ) Schuneman
Photographic communication in the mass media. Multichannel communication theories, communicative overtones. Visual sources, layout, objectivity in editing. Experimental creative projects.

Course Descriptions—Major Requirements

- 5376f.w. ADVANCED PHOTOJOURNALISM.** (5 cr; prereq 1005, 1301, 3121 or ¶3121, §, Δ)
Schuneman, Brown
Materials and processes for visual reporting in newspapers and magazines. Thematic visual series. Dynamics of visual content; pattern, texture, movement. Use of miniature camera, light, and lighting. Color photography.
- 5377s. DOCUMENTARY PHOTOGRAPHY.** (4 cr; prereq 5353, 5376, Δ) Schuneman
Definition, scope, and approaches of the documentary picture story for magazines, picture books, and multimedia presentations. Series, sequences, essays. Photographic markets.

Broadcast Journalism

- 3401f.w. BASIC CINEMATOGRAPHY.** (4 cr; prereq 2.50 avg in 1001, 1005, 1101 or 1201 or 1301, Δ) Brown
Practice and theory in film communication. Creative and technical applications in television news, documentaries, advertising films.
- 3421w. RADIO AND TELEVISION STATION ADMINISTRATION.** (4 cr; prereq 5611, Δ) Mark
The broadcasting station in American life. Station operation; frequency and channel allocations, cross-channel affiliations.
- 3451f. TELEVISION AND RADIO NEWS.** (5 cr; prereq 2.50 avg in 1001, 1005, and 1101, Spch 1101 and 3201, Δ; 2 lect, 3 lab, 3 news production hrs per wk) Fang
Writing, interviewing, delivery, audiotape editing, graphics preparation. Production of radio newscasts and a radio documentary.
- 3486w. RADIO AND TELEVISION SCRIPT WRITING.** (4 cr; prereq 3121 or 3241 and § for journalism majors...1001 and § for speech-radio majors...Δ) Harris
Planning and writing scripts for broadcast in variety of program areas.
- 5402s. FILM PRODUCTION.** (5 cr; prereq 3401 and 1101 or 3486 or Spch 3201, Δ) Brown
Planning, shooting, and editing silent and sound film. Creative production. Laboratory, field experience.
- 5442w. ADVANCED TELEVISION NEWS.** (5 cr; prereq 3451, Δ; 2 lect, 3 lab, 3 news production hrs per wk) Fang
Newsfilm editing; preparation and delivery of television newscasts. Current problems; legal and ethical considerations.
- 5444s. TELEVISION AND RADIO DOCUMENTARY.** (4 cr; prereq 5442, Δ; 2 hrs lect, field and lab hrs as needed) Fang
Scope and techniques. Production of television or radio news documentaries of broadcast quality.

Theory and Methodology

- 5501f.s. COMMUNICATION AND PUBLIC OPINION I.** (4 cr, §Soc 5355; prereq 15 cr in social science depts) Carter, Tichenor, Wackman
Theories of the communication process and of persuasion and attitude change. Interpersonal and mediated communication in diffusion of information and in opinion formation. GrC
- 5515. COMMUNICATIONS ANALYSIS: PRECISION JOURNALISM.** (4 cr; prereq 3121 or grad student or professional experience, §, Δ; offered when feasible) Ismach
Quantitative methods of investigation and interpretation for the mass media.
- 5531w. COMMUNICATION AND PUBLIC OPINION II.** (5 cr; prereq 5501 or Soc 5355) Carter, Tichenor, Wackman
Theories and research findings on opinion formation, persuasion, diffusion of information. Social science contributions to studies of the process and effects of mass communication.
- 5549f. PUBLIC RELATIONS.** (4 cr; prereq 15 cr in social science depts...§ for nonmajors) Lindsay
Public relations practice and principles. Process and applications in institutional settings. Critique of public relations efforts in contemporary society.
- 5559w. CASE STUDIES IN PUBLIC RELATIONS.** (4 cr; prereq 1101, 5549, Δ) Thompson
Application of public relations principles to the solution of problems in business, government, education, and community. Perceptions, insights, judgments concerning practical and ethical questions. GrC

History of Journalism

- 5601f.s. HISTORY OF JOURNALISM.** (4 cr) Emery, Schuneman, Dennis
American newspapers and periodicals, from sources in Europe to present day; rise of radio and television; relation of communication developments to political, economic, and social trends. GrC

- 5603s. TOPICS IN HISTORY OF JOURNALISM.** (4 cr; prereq 5601) Emery
Significant individuals, newspapers, and periodicals in the United States, 1865-1920. Individual research. GrC
- 5606s. LITERARY ASPECTS OF JOURNALISM.** (4 cr; prereq #; offered 1977 and alt yrs) Hage
Literary aspects of journalism as exemplified in, and influenced by, English and American writers, past and present. Weekly papers. GrD
- 5611s. DEVELOPMENT OF AMERICAN BROADCASTING.** (4 cr) Lindsay, Paulu
Historical and economic development of radio and television in United States; government regulation, industry self-regulation, forms of social control; issues in contemporary broadcasting. GrC
- 5615w. DEVELOPMENT OF PHOTOJOURNALISM AND DOCUMENTARY FILM.** (5 cr)
Schuneman
Visual communication and its utilization by the mass media. Principal contributors, visual styles, and changing criteria, 1839 to present. Important films, photographs. Individual research. GrC

Social Institutions

- 5721w,s. MASS MEDIA IN A DYNAMIC SOCIETY.** (4 cr; prereq 1201 or 3121 for journalism majors...# for others) Dennis, Gillmor, Ismach, Ward
Economic, political, and social determinants of character and content of mass communications. Patterns of operations, effect on content, and relative social utility. Theory of mass society. GrC
- 5731s. CURRENT COMMUNICATIONS PROBLEMS.** (4 cr; prereq journalism sr and #) Dennis
Individual projects. Current communications problems in light of social, economic, and technological environment.
- 5731Hs. HONORS COURSE: CURRENT COMMUNICATIONS PROBLEMS**
See 5731.
- 5777f. CONTEMPORARY PROBLEMS IN FREEDOM OF SPEECH AND PRESS.** (4 cr; prereq 15 cr in social science depts) Gillmor
Anglo-American concept of freedom and responsibility, constitutional development in United States, present areas of tension. Bill of Rights and journalism today.

International Communication

- 5801f. INTERNATIONAL COMMUNICATION.** (4 cr; prereq 15 cr in social science depts) Carter, Lindsay
Global telecommunications, channels, artifacts of international mass communication. Problems in free flow of information. Roles of international organizations, journalism. Mass communication in social, political, educational, economic development. GrC
- 5825w. WORLD COMMUNICATION SYSTEMS.** (4 cr; prereq 15 cr in social science depts)
Lindsay
Divergencies and congruences in the world's mass communication systems. Putative issues raised by novel additions to the global telecommunications grid. Effects and import of near- and deep-future communications. GrC

Project Courses

- 5970f,w,s. ADVANCED PROJECTS IN JOURNALISM.** (1-4 cr per qtr [8 cr max]; prereq journalism major, B avg, #)
- 5970Hf,w,s. HONORS COURSE: ADVANCED PROJECTS IN JOURNALISM**
See 5970.

LATIN

See Classics.

Latin American Studies (LAS)

Staff—*Chairman*, Peter T. Johnson, 180c Wilson Library; *Administrative Assistant*, Helen McNulty, 114 Johnston Hall

Course Descriptions—Major Sequences

Adjunct Faculty—Professors: Barrett (Geography), Brownlee (Economics), Carter (Journalism), Coen (Economics), Ellenbogen (Sociology), Floripe (Spanish), Hamilton (Portuguese), Mather (Geography), Miller (Anthropology), Narvaez (Spanish), Riedel (Music), Schwartz (History), Southall (Afro-American Studies), Torbert (Art History), Vidal (Spanish), Zahareas (Spanish, on leave fall 1976, winter 1977)

Associate Professors: Gudeman (Anthropology), Ingham (Anthropology), Madrid (Spanish), Ramos-Gascon (Spanish), Sousa (Portuguese, on leave fall 1976, winter 1977), Wynia (Political Science)

Assistant Professors: Grimes (Spanish), Hendricks (Student Life Studies), Johnson (Library), Menanteau (Sociology), Phillips (History), Puleston (Anthropology)

This program, through a combination of area and language courses, is designed to prepare specialists in aspects of Latin American knowledge and activities.

Its integrated multidisciplinary curriculum leads to a B.A. degree. Students may select from a wide range of courses and facilities on the Twin Cities Campus and in foreign study programs. Opportunities for graduates of this program include teaching, research, government service, work in mass communication, and graduate study.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Completion of Span 1105 or Port 1105 (use of proficiency exams encouraged); Hist 1401 or 3401, 1402 or 3402 (preferably in sequence)

Major Requirements—16 approved cr in Afro-American studies, anthropology, economics, geography, Latin American studies, political science, sociology, or speech courses

8 approved cr in art history, Latin American studies, music, Portuguese, or Spanish courses

12 additional cr in above or history courses

Additional approved cr to bring major total to 48

A current list of courses approved to meet the major requirements is available in the adviser's office, 114 Johnston Hall. Up to 10 cr may be taken S-N; up to 15, with adviser approval, as independent study or directed research. The adviser determines assignment of credits to categories.

Field experience in Latin America is encouraged, and credit for it may be arranged. Students are urged to use on-campus opportunities for cross-cultural experience prior to fieldwork.

Degree candidates must arrange integrated programs in consultation with advisers. The program adviser is located in 114 Johnston Hall.

3131. INTRODUCTION TO LATIN AMERICAN STUDIES. (4 cr) Staff

Contributions by various disciplines to the study of the culture and political and economic systems of Latin America.

5101. METHODS AND SOURCES FOR LATIN AMERICAN STUDIES. (5 cr; prereq reading knowledge of Spanish or Portuguese or *)

Research sources, particularly bibliographic; reference materials and principal works. Prepares students for discipline-centered research. GrC

5710. PROSEMINAR: INTERDISCIPLINARY TOPICS IN LATIN AMERICAN STUDIES. (4 cr per qtr; prereq *...reading knowledge of Spanish or Portuguese usually required)

Interdisciplinary approach to specialized topics. Team taught by teachers from two or more disciplines, with community resource people.

5970. DIRECTED STUDIES. (Cr ar; prereq *)

Guided individual reading or study.

Library School (Lib)

Staff—*Director*, Wesley Simonton, 419 Walter Library; *Director of Undergraduate Studies*, Joan Leigh, 419 Walter Library

Professors: Berninghausen, McDiarmid, Simonton, Stanford

Associate Professors: McClaskey, Olson

Assistant Professors: Brekhus, Leigh, Rohde

Instructor: Maack

The Library School, a graduate professional school, offers a Master's degree program as the minimum preparation for careers in library and information service. Admission requirements may be found in the *Library School Bulletin* and the *Graduate School Bulletin*.

Lib 5101, 5221, and 5401 are available as electives for juniors and seniors in the College of Liberal Arts, particularly those who wish to determine vocational interest in the field.

Undergraduates planning careers in library and information service are invited to visit the Library School office for advice.

5101. INTRODUCTION TO LIBRARIES AND LIBRIANSHIP. (5 cr) Berninghausen, McClaskey, McDiarmid

Librarianship as a profession; development of libraries as social agencies; principles of library administration and management. GrC

5221. RECORDS OF KNOWLEDGE. (4 cr) Leigh, Rohde

History and development of the records of knowledge in relation to the communication problems of society; principles of selection and dissemination to meet library clientele information needs. GrC

5401. ORGANIZATION OF INFORMATION I. (4 cr) Brekhus, Simonton

Methods and problems involved in the description, subject organization, and retrieval of records of knowledge and information in bibliographies, library catalogs, and machine-based systems.

Linguistics (Ling)

Staff—*Chairman*, Bruce T. Downing, 142 Klæber Court; *Director, Program in English as a Second Language*, Betty Wallace Robinett, 152 Klæber Court; *Director of Undergraduate Studies*, Michael B. Kac, 134 Klæber Court

Professors: Robinett (on leave spring 1977), Sanders (on leave winter 1977)

Associate Professors: Downing, Hutchinson

Assistant Professors: Houlihan, Kac, Miranda, Sheldon

Linguistics is the science concerned with the nature of human language and the principles governing its structure, acquisition, use, and change.

B.A. MAJOR SEQUENCE

Major Requirements—3001 or 5001, 3301 or 5301, 3601 or 5601, 5201, 5302

12 additional cr in 3xxx or 5xxx linguistics courses (no more than 8 in one area, such as phonology or syntax); related courses in other departments may be used in a linguistics major with the approval of the director of undergraduate studies

3 yrs college study in one foreign language, or 2 yrs in one and 1 in a second (requirement may be satisfied by examination); 3 cr in history and/or structure of one language studied

General Education—1001, 3001, 3005, 3101, 3301, 5001, 5002, 5003, 5301, 5601, 5701, 5811, 5821.

Course Descriptions—Major Sequences

- 1001. THE NATURE OF HUMAN LANGUAGE.** (3 cr; may not be used as prereq for advanced courses in linguistics)
Facts and theories concerning human language and their relevance to the study of human behavior. GrA
- 3001. INTRODUCTION TO LINGUISTICS.** (4 cr, §5001, §3005)
The field of linguistics; syntax, semantics, phonology; language learning and psychology of language; universals of language; language in society; language change; educational applications; history of linguistics. GrA
- 3001H. HONORS COURSE: INTRODUCTION TO LINGUISTICS.** (4 cr, §3001, §5001, §3005; prereq honors regis or §)
For description, see 3001. GrA
- 3005. LINGUISTICS FOR FOREIGN LANGUAGE TEACHERS.** (4 cr, §3001, §5001)
Linguistics and its relevance to foreign language teaching. GrA
- 3051-3052. HONORS COURSE: LINGUISTICS.** (4 cr per qtr; prereq candidacy for honors in linguistics or §) GrA
- 3101. LANGUAGE TYPES AND LINGUISTIC UNIVERSALS.** (3 cr; prereq 1001 or 3001 or 5001 or §)
Comparison of languages and language types; cross-linguistic similarities and universals of language, and their explanation. GrA
- 3301f. PHONETICS.** (4 cr, §5301, §5003; prereq 3001 or §3001 or §)
Physiology and acoustics of speech sounds; practice in production and perception. GrA
- 3601s. INTRODUCTION TO HISTORICAL LINGUISTICS.** (4 cr, §5601; prereq 3001 or §)
Processes of language change in phonology, syntax, and semantics; linguistic reconstruction; origin of language; language families; development of writing. GrA
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq linguistics major, §)
Guided individual reading or study.
- 5001. INTRODUCTION TO LINGUISTICS.** (4 cr, §3001, §3005)
For description, see 3001. GrA
- 5002. LINGUISTIC ANALYSIS.** (4 cr, §5201, §5302; especially recommended for nonmajors; prereq 3001 or 5001 or §)
Techniques for analyzing phonological, morphological, and syntactic data from a variety of languages; discovering, stating, and justifying generalizations; comparison of diverse languages. GrA
- 5003. APPLIED PHONETICS.** (4 cr, §3301, §5301; not open to linguistics majors; prereq 5001 or §5001 or §)
Primarily for teachers of English as a second language. GrA
- 5006. EXPERIMENTAL PHONETICS.** (4 cr; prereq 3301 or 5301 or §)
Physiological and instrumental studies of speech. Laboratory. GrA
- 5008. TOPICS IN EXPERIMENTAL PHONETICS.** (4 cr; prereq 5006 or §) GrA
- 5011-5012-5013. MATHEMATICAL LINGUISTICS.** (4 cr per qtr; prereq linguistics major or §)
The propositional and first-order predicate calculi; nonclassical logics; set theory; axiomatics; algebra; grammar; automata theory. GrA
- 5201w-5202s. INTRODUCTION TO SYNTAX.** (4 cr per qtr; prereq 3001 or 5001 or §)
5201: Principles of grammar construction and evaluation; syntactic phenomena in a variety of languages. 5202: Modern syntactic theory. GrA
- 5206f-5207w-5208s. ADVANCED SYNTAX.** (4 cr per qtr; prereq 5202, 5303, or §)
5206: The nature of syntactic argumentation. 5207: Historical development of syntactic theory. 5208: Current issues and developments in syntactic theory; alternatives to standard theories. GrA
- 5211. SEMANTICS.** (4 cr; prereq 5011, 5202, or §)
Linguistic analysis and explanation of synonymy, analyticity, presupposition, and other meaning phenomena in natural language; alternative theories of meaning. GrA
- 5301f. PHONETICS.** (4 cr, §3301, §5003; prereq 3001 or 5001 or §5001 or §)
For description, see 3001. GrA
- 5302w-5303s. INTRODUCTION TO PHONOLOGY.** (4 cr per qtr; prereq 3301 or 5301 or §)
5302: Formulation and evaluation of phonological descriptions and examination of phonological processes in a variety of languages. 5303: The standard theory of generative phonology; comparison with alternative theories. GrA

- 5304-5305. ADVANCED PHONOLOGY.** (4 cr per qtr; prereq 5202, 5303, or §)
Current issues in phonological theory; problems of formalization and explanation; alternatives to standard theories. GrA
- 5501-5502. AMERICAN INDIAN LINGUISTICS.** (4 cr per qtr; prereq 5202, 5302, or §) GrA
- 5601. INTRODUCTION TO HISTORICAL LINGUISTICS.** (4 cr, §3601; prereq 3001 or 5001 or §)
For description, see 3601. GrA
- 5602, 5603. LANGUAGE CHANGE AND LINGUISTIC RECONSTRUCTION.** (4 cr per qtr; prereq 3601 or 5601, 5201, 5302, or §)
Phonological and grammatical change; scope of internal and comparative reconstruction. GrA
- 5605f-5606w-5607s. INDO-EUROPEAN LINGUISTICS.** (4 cr per qtr; prereq 3601 or 5601 or §)
Reconstruction of Proto-Indo-European phonology, morphology, and syntax; principal developments in major Indo-European languages. GrA
- 5691. HISTORY OF LINGUISTICS.** (4 cr; prereq 3601 or 5601, 5202, 5303, or §) GrA
- 5701. CONTRASTIVE LINGUISTICS.** (4 cr; prereq 5002 or 5201 and 5302, 5003, or §)
Comparison of related sets of data in different languages; implications for linguistic theory and foreign language learning. GrA
- 5702. SECOND-LANGUAGE ACQUISITION.** (4 cr; prereq 3001 or 5001, 5002 or 5201 and 5302, 5701 or 15701, or §)
Investigation of second-language acquisition; implications for linguistic theory and theories of language learning. GrA
- 5711. FIELD METHODS IN LINGUISTICS.** (4 cr; prereq 5202, 5303, or §) GrA
- 5721. ENGLISH AS A SECOND LANGUAGE: METHODS.** (4 cr; prereq 3001 or 5001 or §)
Linguistics applied to teaching English as a second language. GrA
- 5722. ENGLISH AS A SECOND LANGUAGE: PRACTICUM.** (3 cr; S-N only; prereq major or minor in ESL, 5721, §)
Observation of and practice in teaching English as a second language. GrA
- 5723f. ENGLISH AS A SECOND LANGUAGE: MATERIALS.** (3 cr; prereq 5721, 5722, or §)
Linguistics in the evaluation and preparation of materials for teaching English as a second language. GrA
- 5741-5742. LINGUISTIC DESCRIPTION OF MODERN ENGLISH.** (4 cr per qtr; prereq 3001 or 5001 or §)
Word and sentence structure in present-day English. GrA
- 5805. PSYCHOLINGUISTICS.** (4 cr; prereq 5002, or 5201 and 5302, or §)
Empirical studies of natural language acquisition and processing. GrA
- 5811. ETHNOLINGUISTICS.** (4 cr; prereq 3001 or 5001 or §)
Intersection of linguistic and nonlinguistic cultural dimensions. GrA
- 5821. SOCIOLINGUISTICS.** (4 cr; prereq 3001 or 5001 or §)
Social determinants of linguistic diversity, variability, and change; multilingualism; problems of linguistic minorities; language behavior and social control. GrA
- 5910. SEMINAR IN LINGUISTICS.** (4 cr per qtr; prereq §) GrA
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq linguistics major, §)
Guided individual reading or study.

ENGLISH AS A SECOND LANGUAGE (ESL)

Noncredit English language courses are offered for foreign students who have been admitted or are applying for admission to the University or other institutions of higher education. Students are admitted to classes at the three levels shown below according to proficiency tests administered through the program (152 Klaeber Court).

- 0100. ELEMENTARY ENGLISH AS A SECOND LANGUAGE.** (No cr; for students who are engaged full time in English study; prereq Δ ; 20-25 hrs per wk; special fee)

Course Descriptions—Major Sequences

- 0110. INTERMEDIATE ENGLISH AS A SECOND LANGUAGE.** (No cr; for students whose level of English proficiency will allow them to take one or two academic classes; prereq Δ ; 10-15 hrs per wk; special fee)
- 0120. ADVANCED ENGLISH AS A SECOND LANGUAGE.** (No cr; for students who need supplementay English work in specific skills areas; prereq Δ ; 5 hrs per wk; special fee)

Literature and Fine Arts (LFA)

Courses in Literature and Fine Arts are often cross-disciplinary and experimental. Presented by both CLA and non-CLA faculty, they are often offered on a quarter-by-quarter basis. For current offerings, see the *Class Schedule* or inquire in 106 Johnston Hall. Information about Social Science and Natural Science and Technology experimental courses is available from the same sources.

- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq permission of Office for Special Learning Opportunities)

MARATHI

See South Asian Studies.

Mathematics (Math)

Institute of Technology

Staff—Head, Johannes Nitsche, 127 Vincent Hall; **Associate Head,** Howard Jenkins, 127 Vincent Hall; **Director of Undergraduate Studies,** James Thompson, 127 Vincent Hall; **Director of Graduate Studies,** William Pruitt, 127 Vincent Hall

Regents' Professor: Serrin

Professors: Aeppli, Aronson, Eagon, Ellis, Fabes, S. Gaal, Gil de Lamadrid, Green, Jain, Kallianpur, Kinderlehrer, Littman, Loud, Marden, Markus, McCarthy, Meyers, Miller, Nitsche, Orey, Pedoe, Pohl, Pour-El, Pruitt, Reich, Rejto, Riviere, Sattinger, Sell, Sibuya, Storvick, Weinberger

Associate Professors: Agard, Baxter, Berger, Brauer, Frank, Fristedt, Fuhrken, Gershenson, Goldman, Gulliver, Harris, Jenkins, Jodeit, Joichi, Kahn, Keynes, McGehee, Miracle, Prikry, Richards, Richter, Roberts, Spruck, Stenberg, Stribel, Thompson

Assistant Professors: Armstrong, Asimov, Bausum, Caffarelli, Chen, L. Gaal, Hardt, Harper, Howes, Langton, List, Sheets, White, Wierman

The School of Mathematics offers a program leading to the B.A. in the College of Liberal Arts and one leading to the bachelor of mathematics (B.Math.) degree in the Institute of Technology. Details of the B.Math. program may be found in the *Institute of Technology Bulletin*.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1211-1221-1231 or 1311-1321-1331 or 1611-1621**

3511, 3521, 3531, or 3611-3621 or 3211, 3221 or 3211, 3142 and 3066 or 5521

Note: 1. 5521 counts toward major requirements below. 2. Those who do not take 3531 should take 3675 before attempting 5xxx courses.

**Should be followed by 3611-3621.

Major Requirements—36 cr chosen from 3675 and any courses at the 5xxx level; must include 5601-5602 or 5612-5613 and 5242-5243 or 5282, 5273

Placement of Students—Entering freshmen are assigned math classification numbers (available in their college offices) based on high school grades and ACT and SAT tests. Those with inadequate preparation must take 1201 (Pre-calculus) before entering required courses above. Those with sufficiently high scores may enter 1611. Advanced standing students are placed in courses according to previous records and, in some cases, placement exams.

Information about honors courses and graduation with honors may be obtained in the Mathematics office, 127 Vincent Hall.

0006. ELEMENTARY ALGEBRA. (No cr; 5 hrs per wk; special fee)

Elements of algebra through quadratic equations (equivalent to ninth-grade algebra).

0009f,w,s. PREPARATORY MATHEMATICS. (No cr; for students whose background in algebra is insufficient; 5 hrs per wk; special fee)

Covers high school higher algebra.

1001f-1002w. MATHEMATICS. (4 cr per qtr, \$1421 or \$1221 or above for 1001...\$1431 or \$1231 or above for 1002; for students not planning to register for courses in usual mathematics curriculum; prereq high school geometry and high school higher algebra or Φ)

Genesis of mathematics in applied problems and in imagination; currently important areas of research and application; aesthetic, cultural, humanistic qualities; illustrative material. GrA

1005f,w,s-1006f,w,s. FOUNDATIONS OF ARITHMETIC. (3 cr per qtr; for pre-elementary education students only [no cr for other CLA students]; prereq 1 yr elementary algebra, 1 yr high school geometry or equiv or Δ)

Logical and axiomatic basis of rules for arithmetical operations with integers, rational and irrational numbers; real number line and inequalities as background for teaching arithmetic in elementary school; topics from geometry and congruences; history of mathematics and its role in culture and civilization.

1008f,w,s. TRIGONOMETRY. (3 cr, \$1111; prereq plane geometry, high school higher algebra, mathematics placement score)

Analytic trigonometry, identities, equations, properties of the functions; right and oblique triangles without logarithmic computation. GrA

1111f,w,s. COLLEGE ALGEBRA AND ANALYTICAL GEOMETRY. (5 cr, \$1141, \$1201, \$1411, \$1441; prereq high school higher algebra and mathematics placement score)

Functions, graphs, quadratic equations, progressions, inequalities, complex numbers, theory of equations, permutations and combinations, probability, systems of equations, determinants, conics and standard position, logarithms. GrA

1131f,w,s. FINITE MATHEMATICS. (5 cr; for students in the social sciences, behavioral sciences, and pre-business administration; prereq high school higher algebra and mathematics placement score)

Elementary computer programming, logical analysis, probability and stochastic models, Markov chains, linear systems and programming, matrix operations, and applications. GrA

1142f,w,s. INTRODUCTION TO CALCULUS. (5 cr, \$1211; for students in pre-business administration, pre-pharmacy, and others requiring a minimal amount of calculus; students who plan to take several qtrs of mathematics should register for the sequence 1211-1221-1231; prereq 1111 or 1131 or 1141 or 1201 or mathematics placement score)

Derivatives, integrals, differential equations, maxima and minima, partial differentiation, applications. GrA

1201f,w,s. PRE-CALCULUS. (5 cr, \$1111; for students who intend to take a calculus sequence but lack preparation; prereq high school higher algebra, high school trigonometry or 1008, mathematics placement score)

Inequalities, analytical geometry; complex numbers, binomial theorem; mathematical induction; functions and graphs; trigonometric, exponential and logarithmic functions. GrA

1211-1221-1231f,w,s. ANALYSIS I-II-III. (5 cr per qtr; prereq grade of C or better in 1201 or high school higher algebra, trigonometry, geometry, and mathematics placement score for 1211...grade C or better required to continue in sequence)

Analytical geometry and calculus of functions of one variable, applications. GrA

Course Descriptions—Major Sequences

- 1311f-1321w-1331s. COMPUTER CALCULUS I-II-III.** (5 cr per qtr; prereq grade of C or better in 1201 or high school higher algebra, trigonometry, geometry and mathematics placement score for 1311...grade C or better required to continue in sequence)
Essentially the same as 1211-1221-1231 and 1611-1621, but presented from a computer point of view. GrA
- 1511f-1521w-1531s. HONORS CALCULUS.** (5 cr per qtr; prereq Δ)
Calculus of functions of one variable with emphasis on theory. Basic concepts and proofs; computational aspects. GrA
- 1611f-1621w. ANALYSIS I-II.** (5 cr per qtr; prereq 4 yrs high school mathematics incl trigonometry and Δ ...a grade of C or better in 1611 for 1621)
Accelerated sequence for high ability students (continued in 3611-3621). Covers content of 1211-1221-1231. GrA
- 3057. ACTUARIAL SCIENCE PRINCIPLES—LIFE AND HEALTH INSURANCE.** (4 cr, §Ins 3230; prereq 1142 or §)
How to calculate net premiums, gross premiums, reserves, and nonforfeiture values for major life insurance contracts. The impact of assumed mortality, interest, and expense assumptions. GrA
- 3066f,w,s. ELEMENTARY DIFFERENTIAL EQUATIONS.** (4 cr, §3221, §5512, §5521; prereq 1231 or equiv)
Elementary techniques of problem solving. First- and second-order equations, linear equations of higher order. GrA
- 3071-3072-3073. HISTORY OF MATHEMATICS.** (2 cr per qtr; for students with general knowledge of mathematics and curiosity about historical development of mankind; prereq 1331 or 1231)
Development of main branches of contemporary mathematics within framework of history of ideas and techniques. Impact of thought of previous generations. Term paper each quarter. 3071: Greek mathematics. 3072: Creation of calculus. 3073: Topics in history of mathematics. GrA
- 3142f,w,s. INTRODUCTION TO LINEAR ALGEBRA.** (4 cr, §3221, §3511; prereq 2 qtrs calculus)
Vectors, systems of linear equations, matrices, determinants, eigenvalues, applications. Techniques and some proofs of theorems. GrA
- 3161. SYNTHETIC METRIC GEOMETRY.** (4 cr; prereq 1211 or 1311 or equiv)
Euclidean geometry; ruler and compass constructions and theorems on triangle and circle not studied in high school plane geometry. GrA
- 3211f,w,s. ANALYSIS IV.** (5 cr, §3411, §3521; prereq grade of C or better in 1231 or equiv)
Partial differentiation, chain rule, implicit functions, applications. Multiple integrals in two and three dimensions. GrA
- 3221f,w,s. INTRODUCTION TO LINEAR ALGEBRA AND LINEAR DIFFERENTIAL EQUATIONS.** (5 cr, §3142, §3511; prereq 1231 or equiv)
Vectors, systems of linear equations, matrices, determinants, bases, eigenvalues. Linear differential equations and systems with constant coefficients, initial value problem and general solution, variation of parameters for inhomogeneous equations. GrA
- 3231f,w,s. VECTOR ANALYSIS.** (4 cr, §5601-5602; prereq grade of C or better in 3211 or equiv)
Scalar and vector products, derivatives, geometry of space curves, del operator, line and surface integrals, divergence and Stokes' theorem, transformation of coordinates, dyadics, applications. GrA
- 3511f. ANALYSIS IV.** (4 cr, §3142, §3221; primarily for CLA, IT, and College of Education mathematics majors; prereq 1231, 1331, 1531, or 1621)
Abstract approach to the study of finite dimensional vector spaces. Linear independence, linear transformations, matrices and determinants. GrA
- 3521w. ANALYSIS V.** (4 cr, §3211, §3411; primarily for CLA, IT, and College of Education mathematics majors; prereq 3511)
Calculus of several variables relying heavily on linear algebra. Differentiation and integration of functions of several variables, coordinate systems, Jacobian of a map, implicit function theorem. GrA
- 3531s. ANALYSIS VI.** (4 cr, §3675; primarily for CLA, IT, and College of Education mathematics majors; prereq 3521)
(Continuation of 3521) Differential equations, vector analysis. GrA
- 3581f. FOUNDATIONS OF ARITHMETIC.** (4 cr; prereq 3411 or 3211)
Sets, relations, order. Real number system. Continuous functions. GrA
- 3582w. FOUNDATIONS OF ALGEBRA.** (4 cr; prereq 3411 or 3211)
Groups, rings, fields. Applications to number theory and polynomials. GrA

- 3583s. FOUNDATIONS OF GEOMETRY.** (4 cr; prereq 3161)
Axiomatics. Non-Euclidean geometry. Theorems of Desargues and Pappus. GrA
- 3611s-3621f. ANALYSIS III-IV.** (5 cr per qtr; prereq 1621 for 3611)
Unified treatment of multivariable calculus and linear algebra. GrA
- 3675. INTRODUCTORY MATHEMATICS.** (4 cr, §3531; prereq 1231 or 1331 or equiv)
Prepares sophomore mathematics majors for theoretical courses in junior and senior years. GrA
- 5005-5006. TOPICS IN THE MATHEMATICS OF PRIMARY SCHOOLS.** (4 cr per qtr; for pre-elementary education students only [no cr for other CLA students]; prereq 1005-1006 with a grade of B or better in both courses, or §)
A broad survey of mathematical topics for primary teachers interested in mathematics.
- 5070. TOPICS IN THE HISTORY OF MODERN MATHEMATICS.** (4 cr [may be repeated for cr with Δ]; prereq one 5xxx mathematics sequence or equiv)
Mathematical developments within the last 200 years. GrA
- 5090. CALCULUS REFRESHER.** (5 cr; prereq 4 qtrs calculus or §)
Review of standard calculus topics. Differentiation of elementary functions, differentials, the definite integral, techniques of integration, applications of integration, polar coordinates, infinite series, approximating partial differentiations and multiple integrations.
- 5151f. ELEMENTARY SET THEORY.** (4 cr; prereq 3211 or 3411)
Basic properties of operations on sets, cardinal numbers, simply ordered sets, well-ordered sets, ordinal numbers, axiom of choice, axiomatics. GrA
- 5152w. ELEMENTARY MATHEMATICAL LOGIC.** (4 cr, §5162; prereq 3211 or 3411)
Sets and relations; statement calculus; Boolean algebras; predicate calculus, models, validity and truth; first-order theories as illustrations of the axiomatic method; the completeness theorem; the incompleteness theorem and metamathematics. GrA
- 5154s. AN INTRODUCTION TO RECURSIVE FUNCTION THEORY.** (4 cr; prereq 3211 or 3411 or §)
Alternative definitions of computability (viz., etc.); primitive, partial, and general recursive functions; Church's thesis; Kleene's normal form theorem and recursive theorem; recursive and recursively enumerable sets; applications to mathematical logic. GrA
- 5157-5158-5159. MATHEMATICS OF SYMBOL MANIPULATION SYSTEMS.** (4 cr per qtr; prereq 1211 or 1311, 3rd-yr standing or §)
5157: Finite automata theory: switching circuits, Boolean algebra, and propositional logic. Kleene's theorem on regular sets. Algebraic aspects of finite automata: minimization, decomposition, synthesis. 5158: Computability of numerical functions: proofs for basic result connecting abstract models of programmed digital computers, Turing machines, and general recursive functions. Normal form theorem. Universal machines. Unsolvability of halting problem. 5159: Symbol manipulation systems: formal systems of Herbrand-Gödel and Post. Post's normal form theorem. Formal grammars; theory of Chomsky on context-free and other languages and related automata. Transduction of languages by automata. GrA
- 5162f-5163w-5164s. MATHEMATICAL LOGIC.** (4 cr per qtr; prereq 3211 with 3221 or 3411 with 3142 or Phil 5202 or §)
Propositional and predicate calculi, models for systems of logic, recursive functions, decision and completeness problems. GrA
- 5200. TOPICS IN ALGEBRA.** (4 cr [may be repeated for cr with Δ]; prereq §)
Topics vary from quarter to quarter. GrA
- 5209w,s. THEORY OF NUMBERS.** (4 cr; prereq 3211 or 3411)
Elementary properties of integers; prime and composite numbers; Euclid's algorithm; congruences; theorems of Fermat and Wilson; primitive roots; indices; Diophantine equations. GrA
- 5242f,w-5243w,s. LINEAR ALGEBRA WITH APPLICATIONS.** (4 cr per qtr, §5283-5284; prereq 3221 or 3142 or 3511)
Systems of linear equations, finite dimensional linear spaces, bases, linear transformations, matrices, determinants, eigenvalues, reduction to canonical forms, quadratic and bilinear forms, applications. GrA
- 5244s. GROUP THEORY.** (4 cr; prereq 3221 or 3142 or 3511)
Permutations groups; groups related to geometrical configuration; invariant subgroups, Jordan-Hölder composition theorem, Sylow groups, Abelian groups, elementary divisors, applications. GrA
- 5273w-5274s. MODERN APPLIED ALGEBRA.** (4 cr per qtr; prereq 5282 or 5242 and 5243)
5273: Sets, functions, binary relation, graphs, unary algebras, monoids and groups, morphisms, subgroups, permutations, Lagrange's theorem, binary group codes, encoding and decoding, block codes, Hamming codes, lattices and partially ordered sets. 5274: Rings,

Course Descriptions—Major Sequences

- integral domains, morphisms, direct sums, ideals and quotient rings, Euclidean domains, polynomial rings, polynomial codes, shift registers, unique factorization roots of unity, finite fields, simple extensions, Bose-Chaudhuri Hocquenghem codes, recurrent sequences. GrA
- 5282f-5283w-5284s. FUNDAMENTAL STRUCTURES OF ALGEBRA.** (4 cr per qtr, \$5244 for 5282; prereq 3675, 3211 or 3142 or 3511)
Theory course, principally for students planning mathematics graduate work. Group theory: normal subgroups, homomorphism, automorphism, the theorems of Lagrange, Cayley, and Sylow. Ring theory: rings, ideals, integral domains, Euclidean rings, polynomial rings, fields. Linear algebra: abstract approach to vector spaces, linear transformations; the theory of canonical forms, including the Jordan and rational. GrA
- 5300. TOPICS IN GEOMETRY.** (4 cr [may be repeated for cr with Δ]; prereq $\$$)
Topics vary from quarter to quarter. GrA
- 5341f,w-5342w,s. INTRODUCTION TO TOPOLOGY.** (4 cr per qtr; prereq 3675 and 3211 or 3411 or 3521)
Set theory: axiom of choice, Zorn's lemma. Metric spaces: completeness, compactness, continuity. Basic point set topology: countability and separation axioms, Urysohn's lemma, compactness, connectedness, product spaces. GrA
- 5366f-5367w-5368s. GEOMETRY.** (4 cr per qtr; prereq 3211 or 3411)
Selected chapters of geometry—convex bodies, projective geometry, geometry and imagination, elementary algebraic geometry, geometry of transformation groups, axiomatic geometry, geometrical constructions. GrA
- 5375f. DIFFERENTIAL GEOMETRY.** (4 cr; prereq 3231 or 5602)
Plane and space curves. Frenet formulas, elementary theory of surfaces. GrA
- 5376w-5377s. DIFFERENTIAL GEOMETRY.** (4 cr per qtr; prereq 5375 and 1 qtr linear algebra)
Differential forms. Advanced theory of surfaces, integral geometry, Riemannian geometry. GrA
- 5386f-5387w-5388s. FUNDAMENTAL STRUCTURES OF GEOMETRY.** (4 cr; prereq 5242 or 5282)
A modern treatment of geometry based on the methods of abstract algebra: vector methods in geometry. Affine and projective geometries. Groups of affine and projective transformations. Quadratic forms and metrics. Witt's theorem. Orthogonal and rotation groups. Cartan-Diendonne theorem. Euclidean and non-Euclidean geometries and their groups. GrA
- 5404. VARIATIONAL PROBLEMS.** (4 cr; prereq 5602 or 5512 or $\$$)
Euler-Lagrange equations, isoperimetric problems, geodesics, Fermat's and Hamilton's principles, methods of Rayleigh-Ritz, eigenvalues and eigenfunctions. GrA
- 5427w. APPLIED MATHEMATICS FOR THE LIFE SCIENCES.** (4 cr; prereq 3211, 3221 or $\$$)
Mathematical tools useful in deterministic models arising in life sciences. Linear systems of difference and differential equations. Stability of nonlinear systems, including linearization techniques and Liapunov theory. Examples from demography, population ecology, and population genetics. GrA
- 5428s. MATHEMATICAL MODELS IN ECONOMICS AND THE SOCIAL AND MANAGEMENT SCIENCES.** (4 cr; prereq 3211 with 3221 or 3511, 3521, 3531 or equiv)
Mathematical models and associated mathematical techniques for describing behavior and optimization of various systems. How to find a model for a given situation. GrA
- 5441. MATHEMATICAL THEORY OF FLUID FLOW.** (4 cr; prereq 3231 or 5602, 5568 or 5572)
General equations of fluid mechanics; thermodynamics. Classical constitutive equations. Specialization to various subfields of fluid mechanics, hydrostatics, barotropic perfect fluids, gas dynamics, and viscous flow theory. Examples of exact solutions. GrA
- 5457f-5458w-5459s. METHODS OF APPLIED MATHEMATICS.** (4 cr per qtr; prereq 3211 and 3221 or equiv)
Analytic tools used in applications of mathematics; emphasis on technique. Real and complex variables, matrices, ordinary and partial differential equations, calculus of variations, asymptotic expansions, etc. GrA
- 5476. THEORY OF APPROXIMATION IN NUMERICAL ANALYSIS.** (4 cr; prereq 5473, 5568 or 5573)
Orthogonal functions, Chebyshev approximations, trigonometric approximations, saturation classes, rational approximations, approximations in several variables, spline interpolation and approximations, use of approximation in computing. GrA
- 5512f,w,s. DIFFERENTIAL EQUATIONS.** (4 cr, \$5523; prereq 3211 and 3066 or 3221 or equiv)
First- and second-order equations. Power series solutions. Bessel functions, Legendre polynomials. Boundary value problems. Mostly a technique course for students who wish to learn relevant mathematical facts and methods. GrA

- 5514. INTEGRAL EQUATIONS.** (4 cr; prereq 3211 and 3221 or equiv)
 Integral equations; Fredholm formula, Neumann series, Laplace transforms, successive approximations, and numerical methods. Relation of integral equations to systems of linear algebraic equations and to differential equations. GrA
- 5521f,w,s-5522w,s-5523s. INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS.** (4 cr per qtr; prereq 3142 or 3221 or 3511, 3211 or 3411 or 3521)
 5521: Existence and uniqueness theorems; successive approximations; differential inequalities; linear systems; fundamental matrix solutions; linear systems with constant coefficients; variation of parameters. 5522: Phase plane analysis; Poincare-Bendixon theory; linear and nonlinear oscillations; stability theory; asymptotic behavior of solutions; control theory. 5523: Formal and convergent of power series solutions majorant method; regular and irregular singular points; error estimates perturbation methods. GrA
- 5567f,w. FOURIER SERIES AND BOUNDARY VALUE PROBLEMS.** (4 cr, §5571; prereq 3211, 3221 or equiv)
 Partial differential equations of theoretical physics. Fourier series, proof of convergence, orthogonal systems. Sturm-Liouville systems, solution of boundary value problems by separation of variables, applications. GrA
- 5568w,s. ELEMENTARY THEORY OF COMPLEX VARIABLES.** (4 cr; prereq 3231, or 5602, or equiv course in vector analysis)
 Derivative and integral of a function of a complex variable. Cauchy's integral theorem and formula, residues. Application to evaluation of integrals, conformal mapping. GrA
- 5569s. OPERATIONAL MATHEMATICS.** (4 cr; prereq 5568)
 Laplace transforms, Fourier transforms, inversion theorems; applications to differential equations. GrA
- 5571f-5572w-5573s. ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS.** (4 cr per qtr, §5567, §5568; prereq 5603 or 5613)
 Partial differential equations of theoretical physics, one-dimensional wave equations, characteristics, classification of second-order equations, heat and Laplace equations, uniqueness, maximum principle, orthogonal systems, Fourier series, separation of variables. Complex numbers, derivatives and integrals of analytic functions, elementary functions and their geometry. Cauchy's integral theorem and formula, Laurent expansions, evaluation of contour integrals by residues, Fourier and Laplace transforms and their inversion, method of residues, applications to ordinary and partial differential equations, applications of heat, wave, and Laplace equations. GrA
- 5600. TOPICS IN ANALYSIS.** (4 cr [may be repeated for cr with Δ]; prereq #)
 Topics vary from quarter to quarter. GrA
- 5601f,w-5602w,s-5603s. ADVANCED CALCULUS.** (4 cr per qtr; prereq 3211 or 3411)
 5601: Differentiation of functions of several variables; vector algebra; curves in three dimensions; directional derivative and gradient inverse, transformation and implicit function theorems; change of variables in multiple integrals. 5602: Line and surface integrals; Stokes' theorem; convergence of infinite series; orthogonal functions; uniform convergence; integration and differentiation of series. 5603: Real numbers; continuous functions; limits; properties of continuous functions; differentiation; the Riemann integral; improper integrals. GrA
- 5612f-5613w-5614s. INTRODUCTION TO ANALYSIS.** (4 cr per qtr; principally for students planning to take grad work with a mathematics major, as preparation for grad courses in analysis; prereq 3675, 3521 or 3211 with 3221 or 3411 with 3142)
 Theory of real numbers; elements of point set theory; limits; differentiation; multivariable analysis. GrA
- 5615. LEBESGUE INTEGRAL.** (4 cr; prereq 5602 or 5612 or 5607 or #)
 Basic limit theorems. Comparison with Riemann integral. Lebesgue measure. Absolute continuity. GrA
- 5625. DEVELOPMENT OF NUMBER SYSTEMS.** (4 cr, §5612; prereq 3211 or 3411)
 Systematic construction of real number system by extension from natural numbers via rational numbers to irrational numbers; negative numbers, properties of the system; operations with numbers and laws governing operations. GrA
- 5661-5662. PROBABILITY WITH TECHNOLOGICAL APPLICATIONS.** (4 cr per qtr; prereq Stat 5131 and #)
 Spectral analysis of stationary processes, linear and nonlinear transformations, prediction and smoothing, recurrent events, random walk and diffusion, Markov chains, Poisson processes. GrA
- 5676. INTRODUCTION TO STOCHASTIC PROCESSES.** (4 cr, §Stat 8501; prereq Stat 5132)
 Supplements probability studies in Stat 5131, 5132 by an introduction to stochastic processes, especially to various Markov processes which arise in applications.

Course Descriptions—Major Sequences

- 5679. PROBABILITY.** (4 cr, §5681; prereq 3211 or 3411 or 3521)
Elementary principles of probability, total and compound probability, expectation, repeated trials, and topics chosen from the following: Stirling's formula, the probability integral, geometrical probability, probability of causes, Bayes' theorem, errors of observation, principle of least squares. GrA
- 5681f-5682w-5683s. INTRODUCTION TO PROBABILITY.** (4 cr per qtr; prereq 5602 or Stat 5133 or §)
Logical development and various applications of probability. Probability spaces, random variables, central limit theorem; Markov chains. GrA
- 5701. COMBINATORICS.** (4 cr; prereq 3211 or 3411 and 3rd-yr standing...soph-level linear algebra is helpful)
Basic concepts in combinatorics. Enumeration including binomial counting, permutations, generating functions, inclusion exclusion principle, recurrence relations. Application. Matching theory and designs. GrA
- 5702. INTRODUCTION TO GRAPH THEORY.** (4 cr; prereq 3211 or 3411 and 3rd-yr standing...soph-level linear algebra is helpful)
Basic concepts. Topics from connectedness, Eulerian graphs, trees, matrices, Hamiltonian graphs, coloring problems, plane graphs, enumeration. Applications. GrA
- 5703. COMBINATORIAL ALGORITHMS AND OPTIMIZATION.** (4 cr; prereq 3211 or equiv and knowledge of some programming language)
Basic algorithmic methods in combinatorics, with emphasis on optimization.
- 5900. TUTORIAL COURSE IN ADVANCED MATHEMATICS.** (Cr ar; prereq §)
Qualified students whose needs are not met by courses offered may make arrangements to study content of other graduate courses. GrA
- 5910. PROBLEMS COURSE.** (4 cr [may be repeated for cr with Δ]; prereq §)
Problem-solving techniques in many areas of mathematics, from elementary to advanced levels, adapted to students of varied backgrounds. GrA

Medical School

The B.A. degree is available in microbiology and physiology, and courses for credit, some of which may be applied toward distribution requirements, are offered in anatomy, the history of medicine, microbiology, and physiology. See these departmental headings.

Microbiology (MicB)

Medical School

Staff—Head, Dennis W. Watson, 1060 Mayo Memorial Hospital; *Director of Undergraduate Studies,* Palmer Rogers, 1015 Mayo Memorial Hospital

Professors: Anderson, Brand, Busta, Dworkin, Greene, Hall, Jenkin, Johnson, Koffler, Lindorfer, McKhann, Plagemann, Quie, Schmidt, Tsuchiya, Wannamaker, Zinneman

Associate Professors: Chapman, Douglas, Elliott, Gray, Needham, Prince, Reilly, Schachtele, Zissler

Assistant Professors: Cleary, Crawford, Faras, Germaine, Handwerker, Liljemark, McKay, Peterson, Schmidtke, Tsien

Microbiology is the branch of biological science that deals with the nature and activities of microorganisms, the distinctive microscopic life forms that recycle the elements in aquatic, atmospheric, and soil environments. Their potentialities may be directed to the benefit of people in industry, agriculture, and medicine, or to their harm in disease and spoilage. As remarkably useful model systems for research, they play a key role in the development of modern biology.

The major sequence leading to the B.A. degree permits the design of a program of microbiology or related courses appropriate to the student's interests in areas such as pathogenic mechanisms, ecology of microorganisms, microbes and man, or others.

Elementary Microbiology (MicB 1101) is open to students in occupational therapy, mortuary science, and dental hygiene upon permission of the department.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Biol 1011, 1103 or 1106; Chem 1004-1005, 3100-3101, 3301-3302, and 3303 or Biol 3021; Math 1211-1221-1231 or 1311-1321-1331 or 1611-1621; Phys 1104-1105-1106 or 1031-1032

Major Requirements—3103 or 5105 or VB 3103 or Biol 3013; MicB 5216 or 5218, 5321, 5900

12-13 3xxx or 5xxx cr in microbiology or related courses, from zoology, botany, biology, food science and nutrition, public health, or laboratory medicine

Biol 3013.MICROBIOLOGY.** (4 cr, \$MicB 3103, \$MicB 5105; prereq Biol 3021) Chapman, Dworkin, C Woodward

Taxonomy, anatomy, physiology, biochemistry, and ecology of microbes. Molecular structure in relation to bacterial function. GrB

3103.GENERAL MICROBIOLOGY.** (5 cr; prereq soph with C avg in prereq courses to major sequence, or jr with 10 cr in chemistry and 5 cr in biological sciences or #) Schmidt

Morphology, physiology, taxonomy, and ecology of bacteria. Applications of fundamental principles.

VB 3103. GENERAL MICROBIOLOGY.** (5 cr, \$MicB 3103, \$MicB 5105, Biol 3013; not open to veterinary medical students; prereq 10 cr chemistry, 4 cr biological sciences) Maheswaran

Morphology, taxonomy, genetics, physiology, and ecology of microorganisms. Application of principles of microbiology to other phases of science and industry.

LMed 5103. PRINCIPLES OF DIAGNOSTIC MICROBIOLOGY. (3 cr; prereq general course in microbiology, #) Ederer and Blazevic

Current techniques in laboratory diagnosis of infectious disease; isolation and identification of bacteria and yeast; antibiotic sensitivity testing.

5105. BIOLOGY OF MICROORGANISMS.** (4 cr, \$3103, \$Biol 3013, \$VB 3103; prereq 5 cr biological sciences, Chem 3302, Biol 3021, or #) Dworkin

Taxonomy, anatomy, physiology, biochemistry, and ecology of microbes. Molecular structure in relation to bacterial function. Laboratory.

FSeN 5120. FOOD MICROBIOLOGY. (5 cr [3 cr for lect taken separately with #]; prereq MicB 3103)

Relationship of environment to occurrence, growth, and survival of microorganisms in foods; evaluation of microbiological quality of dairy and food products; characteristics and activities of bacteria, yeasts, and molds related to food spoilage; utilization of microorganisms in manufacture of dairy and food products; recognition and control of food-borne pathogens and food poisoning.

FSeN 5122. SANITATION AND PROCESS MICROBIOLOGY. (4 cr [3 cr for lect taken separately with #]; prereq FSeN 5120 or #)

Control and destruction of microorganisms; chemical, physical, and microbiological principles in cleaning and sanitizing dairy and food processing equipment; inactivation of microorganisms and thermal process evaluation; microbiological fermentations and preservation methods; development of sanitation programs; microbiological standards for dairy and food products.

LMed 5133. MEDICAL MYCOLOGY. (3 cr; prereq medical microbiology, diagnostic microbiology, or #) Blazevic

Laboratory diagnosis of infections caused by yeasts, dermatophytes, and systemic fungi.

LMed 5136. ANAEROBIC BACTERIOLOGY. (4 cr; prereq biochemistry, medical microbiology, diagnostic microbiology or #) Blazevic

Anaerobic respiration in bacteria. Methods of anaerobic culture. Taxonomy and classification of anaerobes. Biochemical and gas chromatographic differentiation of anaerobes. The role of anaerobes in disease.

**Microscope required. Students may obtain use of microscope by purchasing \$5 microscope card from the bursar.

Course Descriptions—Major Sequences

- PubH 5171f,s. ENVIRONMENTAL MICROBIOLOGY.** (3 cr; prereq PubH 5151, 5155, MicB 3103 or §) Greene
Survival, dissemination, transportation, and significance of microorganisms in the environment; application of principles to environmental health problems.
- 5216f. IMMUNOLOGY.** (4 cr; prereq Biol 3021) Schmitdke, Gray
Nature of antigens and antibodies; chemical basis of serologic specificity; qualitative and quantitative aspects of antigen-antibody reactions; theories of antibody production; cellular antigens and blood grouping; nature of complement and its role in immunologic phenomena; mechanisms of hypersensitivity; hypersensitivity-like states and immunologic diseases; transplantation and tumor immunity; host-parasite interactions. Laboratory.
- 5218f. IMMUNOLOGY.** (3 cr; prereq Biol 3021) Schmitdke, Gray
Same as 5216 without laboratory.
- 5232w. MEDICAL MICROBIOLOGY.** (3 cr; not open to medical students; prereq 5105 or 3103 or 8110 or Biol 3013) Cleary
Pathogenic bacteria, fungi, and viruses, mechanisms of pathogenicity and virulence; properties of microorganisms and their animal hosts that influence the outcome of host-parasite relations analyzed from genetic and metabolic view.
- 5233f.** MICROORGANISMS AND DISEASE.** (7 cr; not open to microbiology majors; prereq 10 cr chemistry and 5 cr biological sciences or §) Johnson
Nature of microorganisms, immunology, medical bacteriology, virology, mycology, parasitology, and principles of disease control. Laboratory.
- 5234w.** MEDICAL MICROBIOLOGY LABORATORY.** (2 cr; prereq 5232 or ¶5232) Cleary
Demonstration of principles that influence interactions of microorganisms and man, leading to a diseased state.
- FScN 5320f. ADVANCED DAIRY AND FOOD MICROBIOLOGY.** (4 cr; prereq sr, FScN 5122, or §)
Food starter cultures; composition of starters, nutrition and metabolism, inhibitors in milk, strain association and compatibility, preservation and mass production, bacteriophage in cheesemaking. Influence and resistance. Natural and microbial toxicants in foods, occurrence, techniques for monitoring their presence and control.
- 5321w. PHYSIOLOGY OF BACTERIA.** (3 cr; prereq 3103 or 5105 or Biol 3013 or VB 3103, 10 cr organic chemistry or biochemistry, 3 cr genetics) Rogers
Chemical and physical organization of bacteria as related to function; growth; energy metabolism including oxidations and fermentations; nutritional requirements; antimicrobial agents; autotrophic mechanisms; microbial differentiation.
- 5322w. PHYSIOLOGY OF BACTERIA LABORATORY.** (2 cr; prereq 5321 or ¶5321 and a lab course in basic bacteriology) Rogers
Techniques employed in study of bacterial physiology and metabolism.
- PubH 5342. PUBLIC HEALTH BACTERIOLOGY.** (Cr ar; prereq MicB 5216, 5232, 5234, §) Bauer
Bacteriologic and serologic diagnosis, public health laboratory administration and methods.
- 5424s.** BIOLOGY OF VIRUSES.** (4 cr; prereq 5321 and Biol 3021 or §) Plagemann
Structure, composition, and properties of bacterial, plant, and animal viruses; interaction with cells, effects on host cell metabolism; biochemistry of viral replication; techniques in study of viruses and viral infections; viral tumorigenesis. Laboratory.
- 5611f. MICROBIAL ECOLOGY.** (4 cr; prereq general microbiology course, Biol 3021 or §)
Microbial adaptation and diversity; role of microorganisms in natural processes; methods in microbial ecology; other topics.
- 5811su. FIELD STUDIES IN MICROBIAL ECOLOGY.** (5 cr; limited to 12 students; prereq course in microbiology) Crawford
Natural microbial populations: enumeration of specific types of microorganisms in natural environments, enrichment techniques, submerged slide culture, and observations of natural, microbiological phenomena.
- 5900f,w,s. TOPICS IN MICROBIOLOGY.** (1 cr; S-N only; open to microbiology sr majors) Rogers
Seminars on research programs, historical perspectives, significant emerging fields, professional societies and publications, career opportunities.
- 5970f,w,s,su. DIRECTED STUDIES.** (Cr ar; prereq §) Staff
Guided individual reading or study.

MIDDLE EASTERN STUDIES

See Near and Middle Eastern Studies.

MILITARY SCIENCE

See Reserve Officers' Training Corps.

MODERN GREEK

See Classics.

Music (Mus)

Staff—Chairman, Lloyd Ultan, 104 Scott Hall

Professors: Argento, Benciscutto (on leave 1976-77), Fetler, Fleischer, Freed, Laudon, Massmann, Riedel (on leave fall 1977), Schuessler, Weiser

Associate Professors: Cardamone (on leave 1976-77), Lancaster, McNab, Stokes, Sutton, Ware, West

Assistant Professors: Anderson, Baldwin, Davis, Gross, Hilley, Ivory, Jorgenson, Kagan, Remenikova, Sanford, Tartaglia

Instructor: Humphries

The Department of Music offers B.A. degrees with specializations in applied music, history and literature, theory, and composition and theory. It also offers B.F.A. degrees for students with significant performing ability as instrumentalists or vocalists who plan to pursue professional careers.

Admission to the major is contingent upon a satisfactory audition and placement in a suitable level of applied music study. A placement examination in basic theory and aural perception is also required.

Students must play or sing qualifying performances before entering the junior year of applied music study and must pass a piano proficiency test as early as possible after admission to the major.

Transfer students are placed in departmental programs on the basis of an entrance audition and examinations in music theory and music history.

The department is a member of the National Association of Schools of Music.

B.A. MAJOR SEQUENCE

Major Requirements—24 cr of applied music (B.A. at x2xx level or higher, B.F.A. at x3xx level)

Theory: 1501-1502-1503, 1504-1505-1506, 1511-1512-1513, 1514-1515-1516, 3541-3542-3543 (except B.A. vocal majors)

Music history: 1603-1604-1605-1606

Performance in University ensembles: Participation appropriate to major concentration every qtr in residence

Concentration: Courses in one of the following areas:

Performance: 12 additional applied music cr (x2xx or higher); senior recital (0 cr); 12 additional 3xxx or 5xxx cr; vocal majors, 5741, 5742

History and literature: 5501, 5502, 5503; 18 additional 3xxx or 5xxx cr in music history and literature

Composition and theory: 5501, 5502, 5503; 5551, 5552, 5553; 5561, 5562, 5563; 6 additional 3xxx or 5xxx music cr

Theory: 5501, 5502, 5503; 5561, 5562, 5563; 12 additional 3xxx or 5xxx music cr

Course Descriptions—Major Sequences

B.F.A. MAJOR SEQUENCE

Major Requirements—As listed above (B.A. major sequence), with the following additional requirements:

24 applied music cr at x3xx level (church music majors take 12 x2xx piano cr and 6 x1xx voice cr; organ and harp majors take 12 x2xx piano cr)

Chamber ensemble: 6 cr (except church music majors; piano and organ majors, 5521-5522-5523; vocal majors, 5470)

15-28 3xxx or 5xxx cr in area of concentration and in elective courses (consult adviser)

1001f,w,s. FUNDAMENTALS OF MUSIC. (4 cr; for non-music majors)

Basic musical symbols, vocabulary, rhythm, design, scale structures, intervals, chords. Basic piano skills; simple accompaniments. GrD

1021f,w. INTRODUCTION TO MUSIC. (5 cr, §3021) Sutton

Music in the repertory of our culture—forms and styles from 17th and 20th centuries. Aural analyses, relationships of large units of musical form. GrD

1151f-1152w-1153s. PIANO: CLASS LESSONS. (2 cr per qtr; prereq 1001 for non-music majors for 1151...§ for others)

Keyboard skills in harmonization, improvisation, sight-reading, accompaniment, repertory, technique. Group learning. GrD

1161f-1162w-1163s. VOICE: CLASS LESSONS. (2 cr per qtr)

Fundamentals of vocal production: posture, respiration, phonation, articulation. GrD

1171f-1172w-1173s. GUITAR: CLASS LESSONS. (2 cr per qtr)

Fundamentals and progressive development of skills. 1171: Strumming techniques, harmonizations in basic keys. 1172: Advanced strumming techniques, bass runs, finger-picking strums. 1173: Melodic techniques, advanced harmonizations. (Student must furnish own guitar.) GrD

3021w,s. INTRODUCTION TO MUSIC. (5 cr, §1021; open to jr and sr non-music majors) Sutton

Similar to 1021, but more extensive. GrD

5027f, 5028w, 5029s. HISTORY OF MUSICAL STYLES. (4 cr per qtr) Cardamone

Stylistic developments in Western music, 9th century to present day. 5027: Middle Ages, Renaissance, baroque. 5028: Classical period, early Romantic period, nationalism. 5029: 1850 to present. GrD

Applied Music

Refer to brochure *Applied Music Procedures*, available from the department office, for a complete listing of applied music courses: courses numbered x101-x124, x201-x224, and x301-x324. These courses are not listed in this bulletin.

Ensembles

1410f,w,s. BAND. (1 cr per qtr; prereq §) Bencriscutto

Concert Band Ensemble; Symphony Band Ensemble; Symphony Bands I and II; Marching Band. Concert and Symphony Bands perform standard and contemporary repertory. Marching Band performs at University functions. GrD

1420f,w,s. ORCHESTRA. (1 cr per qtr; prereq §) Massmann

Symphonic repertory through performance. Minimum of one concert per quarter. Players from all colleges may participate. Major choral works with the University Chorus, guest and student soloists, appearances on tours. GrD

1430f,w,s. UNIVERSITY CHORUS; CONCERT CHOIR; WOMEN'S CHORUS; MEN'S CHORUS; ST. PAUL CAMPUS CHORUS. (1 cr per qtr; prereq §) Lancaster, Jorgenson

Sec. 1, 2, 3—*University Chorus*: Major symphonic works with Minnesota Orchestra, University Symphony Orchestra, University Concert Band.

Sec. 3—*Concert Choir*: Ensemble chosen from the University Chorus.

Sec. 4—*Women's Chorus*: Rehearsals and performances of standard material. Appearances at on- and off-campus functions.

Sec. 5—*Men's Chorus*: Standard material as well as special arrangements. Appearances at on- and off-campus functions.

Sec. 6—*St. Paul Campus Chorus*: At least one public appearance a quarter; special events connected with St. Paul Campus. GrD

- 1440f,w,s. ENSEMBLE.** (1 cr per qtr; prereq §)
Performance of chamber music of major and minor composers: sonatas, trios, quartets, quintets, other forms. Combinations of vocal and instrumental chamber ensemble materials. GrD
- 3440f,w,s. ENSEMBLE.** (1 cr per qtr; prereq audition)
See description of 1440. GrD
- 5380f,w,s. BRASS CHOIR.** (1 cr per qtr; prereq §) Baldwin
Practice and performance of brass ensemble literature from the antiphonal music of Giovanni Gabrieli to works of the 20th century. GrD
- 5390f,w,s. PERCUSSION ENSEMBLE.** (1 cr per qtr; prereq §)
Practice and performance of standard and contemporary compositions for percussion ensembles in various combinations. GrD
- 5410f,w,s. BAND.** (1 cr per qtr; prereq audition) Bencriscutto
See description of 1410. GrD
- 5420f,w,s. ORCHESTRA.** (1 cr per qtr; prereq audition) Massmann
See description of 1420. GrD
- 5430f,w,s. UNIVERSITY CHORUS; CONCERT CHOIR; WOMEN'S CHORUS; MEN'S CHORUS; ST. PAUL CAMPUS CHORUS.** (1 cr per qtr; prereq audition) Lancaster, Jorgenson
See description of 1430. GrD
- 5440f,w,s. ENSEMBLE.** (1 cr per qtr; prereq audition)
See description of 1440. GrD
- 5450f,w,s. COLLEGIUM MUSICUM.** (1 cr per qtr; prereq audition) Staff
Small ensemble of singers and instrumentalists; study and performance of early music. GrD
- 5460f,w,s. CONTEMPORARY MUSIC ENSEMBLE.** (2 cr per qtr; prereq audition) Stokes
Practice and performance of recent music for various combinations of vocal and instrumental ensembles. GrD
- 5470f,w,s. OPERA WORKSHOP.** (3 cr per qtr; prereq ability to sing arias satisfactorily, audition) Sutton
Preparation and performance of operatic arias and scenes; combined problems of musical and dramatic interpretation. A fully staged production. GrD
- 5490f,w,s. CHAMBER SINGERS.** (2 cr per qtr; prereq audition) Lancaster
Mixed chorus of 16 to 20 voices. Performances each quarter. GrD

History and Literature

- 1603s-1604f-1605w-1606s. HISTORY OF WESTERN MUSIC.** (4 cr per qtr; prereq 1502) Laudon
Musical styles and forms, 9th through 20th centuries; identification through listening practice. 1603: Romanesque, Gothic, and Renaissance eras. 1604: Baroque era. 1605: Classical-Romantic era. 1606: 20th century. GrD
- 1804. WORLD MUSIC.** (4 cr) Kagan
Music in universal perspective. Traits distinguishing styles and cultural factors that influence musical creativity. Music of different cultures compared to examine forms and traits, to develop listening abilities and an understanding of man's musical expressions. GrD
- 3708. BLACK MUSIC PRIOR TO WORLD WAR I.** (5 cr, §Afro 3105) Southall
Musical contributions and achievements of Black Americans in the United States during the 19th and early 20th centuries. GrD
- 3709. AFRICAN MUSIC IN THE AMERICAN HERITAGE.** (4 cr, §Afro 3301) Southall
Links between African music and music of Black America, West Indies, South and Central America. The Afro-Cuban style and modern jazz. GrD
- 3791. INTRODUCTION TO ELECTRONIC MUSIC.** (4 cr; prereq 4 cr in music or §) Ultan, Stokes
Musical literature to which electronic materials contribute. Listeners, discussions, and readings. Exercises in use of equipment. GrD
- 3807f, 3808w. MUSIC IN ASIAN AND PACIFIC CULTURES.** (5, 4 cr) Kagan
Living music; ancient traditions of Asia's civilizations. Music and musical instruments: use and function in Australia, New Guinea, Polynesia, South and East Asia, Southeast Asia, island cultures. GrD

Course Descriptions—Major Sequences

- 5182f. BAROQUE PERFORMANCE PRACTICE.** (4 cr; prereq sr or grad student, 1506, 1606, or §) Laudon
Ornamentation, phrasing, articulation, and improvisation in music of period 1550-1759. Instruction books of the period; performance of baroque music in baroque style. GrD
- 5601f-5602w-5603s. HISTORY OF OPERA.** (3 cr per qtr; prereq 9 cr in history of music, art, theatre, or European history from 1600, or §) Argento
Origins of opera; development as a musicodramatic form through analysis of libretto and music of representative masterpieces of the late Renaissance, Baroque, Classical, Romantic, and contemporary periods. GrD
- 5604f, 5605w. HISTORY OF CHURCH MUSIC.** (4 cr per qtr; prereq 1606 or §; offered 1976-77 and alt yrs) Riedel
Trends, relationship of music to various theologies and liturgies. GrD
- 5607. GREGORIAN CHANT.** (4 cr; prereq 1606 or §; offered when feasible) Riedel
Its forms and style. GrD
- 5608. LEITURGIA.** (4 cr; prereq 1606 or §; offered alt yrs) Riedel
Liturgies from the Roman chant to the 20th century. GrD
- 5611. HYMNOLOGY.** (4 cr; prereq 6 cr in 1603-1604-1605-1606 or §; offered when feasible) Fleischer, Riedel
History of hymn texts and tunes. Byzantine and Roman hymns. Lutheran, Anglican, Baptist, Congregational, Methodist, Presbyterian, Unitarian, and other hymns. History of hymn books and hymn settings. GrD
- 5631. MUSIC IN MIDDLE AGES.** (4 cr; prereq 1606) Cardamone
Western musical style from its earliest records to Machaut: Gregorian chant and accretions to the liturgy, chivalric songs traditions in Spain, France, and Germany; organum, clausula, and motet. GrD
- 5632w-5633s. THE MUSIC OF HUMANISM: ARS NOVA AND RENAISSANCE.** (4 cr per qtr; prereq 5631) Cardamone
Stylistic achievements in part music, 1350-1600: French, Italian, English, German song forms; Franco-Flemish mass and motet, diffusion of Franco-Flemish style; mannerism and musical depiction of text; rise of instrumental music; stylistic analysis. GrD
- 5634f-5635w-5636s. MUSIC IN BAROQUE ERA.** (4 cr per qtr; prereq 1606; offered 1977-78 and alt yrs) Laudon
Vocal, instrumental, and sacred styles of Baroque era. GrD
- 5637f-5638w-5639s. MUSIC IN GALANT AND CLASSIC PERIODS.** (4 cr per qtr; prereq 1606; offered 1976-77 and alt yrs) Laudon
The transition from late baroque to galant and classical styles. GrD
- 5641, 5642. MUSIC IN ROMANTIC ERA.** (5, 4 cr; prereq 1606 or §; offered 1977-78) Riedel
Romanticism as a complex of individual styles with common elements, developed by composers to resolve conflicts between their artistic heritage and their environment. Relationship to literary trends; nationalism. GrD
- 5661. GEORGE FRIEDRICH HANDEL: LIFE AND WORKS.** (4 cr; prereq 1606 or §) Riedel
Musical culture in middle and northern Germany, 17th and 18th centuries. Oratorio in Italy, France, Germany, and England. G. F. Handel's work, emphasis on his oratorios. Handel and England. GrD
- 5662. HEINRICH SCHÜTZ: LIFE AND WORKS.** (4 cr; prereq 8 cr in music or art history or German literature or political history to 1700 or §) Riedel
Political events in 17th-century Germany, Europe; Protestant hymn, psalm literature. Their musical elaborations in works of Schütz. Madrigals, monodies, sacred concerti and cantatas, passions. GrD
- 5663. LASSO AND PALESTRINA.** (4 cr; prereq 8 cr in music history or Renaissance and baroque art or political history to 1700 or general history of Western philosophy or §) Riedel
Council of Trent. Influence on sacred music of 16th century. Lasso's cosmopolitan style, Palestrina's a cappella style. Palestrina style, 17th, 18th centuries. Caecilianism of 19th, 20th centuries. GrD
- 5664. CHARLES IVES: LIFE AND WORKS.** (4 cr) Riedel
Ives' compositions. Ives and American transcendentalism. Ives and the Progressive party. Ives as a 19th- and 20th-century composer. GrD
- 5665. RABINDRANATH TAGORE: MUSIC AND POETRY.** (4 cr) Kagan
Life, philosophy, works. Influences: Europe, India's classical and folk traditions. Poetic forms and themes. Influence upon Bengali literature. Songs, operas, with bilingual texts. GrD

- 5666. STRAVINSKY.** (4 cr; prereq 12 cr in music history, 1506) Cardamone
Changing styles and aesthetic principles of Stravinsky as seen in representative compositions and writings; contributions to artistic life in Europe and America (particularly ballet). GrD
- 5701, 5702. AMERICAN MUSIC.** (4 cr per qtr; prereq 1606 or 8 cr in American history or American studies or §) Riedel
From colonial times to present. American Indian music; sacred music in America, from Puritan New England to the present time; jazz; music education; the symphony orchestra; contemporary music. GrD
- 5704, 5705. LATIN AMERICAN MUSIC.** (4 cr per qtr; offered 1977-78 and alt yrs) Riedel
Pre-Maya and pre-Inca times through colonial period to present. Music of Indians in Brazil, Inca countries. Afro-American, Ibero-Latin American music. Folk, popular, contemporary music. GrD
- 5707. SCANDINAVIAN MUSIC.** (4 cr; prereq major in music or Scandinavian or humanities or §; offered when feasible)
Music of Norway, Sweden, Finland, Denmark, Iceland; historical background, folk music, church music, music of today. GrD
- 5741, 5742. VOCAL LITERATURE.** (4 cr per qtr; prereq 12 cr in 1104 or 1204 or 1304 or §) Schuessler, Sutton
Literature and pedagogy: performance of songs from major and minor composers. Vocal techniques from major schools of singing as they relate to song performance. GrD
- 5744f, 5745w, 5746s. PIANO LITERATURE.** (2 cr per qtr; prereq 12 cr in 1101 or 1201 or 1301 or §; offered 1976-77) Weiser
History of keyboard literature for piano performances from end of 16th century to present. Performance illustrations, recordings. GrD
- 5747. ORGAN LITERATURE.** (2 cr; prereq grad organ and musicology student or §; offered 1976-77) Fleischer
Organ literature and playing from 14th century to the present. Mutual influence of organ construction and composition; national schools of organ playing. GrD
- 5754. CHORAL LITERATURE: RENAISSANCE THROUGH BAROQUE ERAS.** (4 cr; prereq sr or grad student and §) Lancaster
Sacred and secular choral works of the Renaissance and Baroque eras. GrD
- 5755. CHORAL LITERATURE: CLASSICAL ERA THROUGH THE 20TH CENTURY.** (4 cr; prereq sr or grad student and §) Lancaster
Sacred and secular choral works of the Classical era through the 20th century. GrD
- 5804. FOLK AND TRADITIONAL MUSIC: CROSS-CULTURAL SURVEY.** (4 cr) Kagan
Music of the peoples of the world in topical and geographic format. Comparative study of musical styles, behavior, and concepts in varied societies and cultures. Field recordings and filmed performances. GrD
- 5810. ASIAN MUSIC IN PERFORMANCE.** (2 cr per qtr; prereq §) Kagan, staff
Vocal and instrumental skills developed through applied training and lecture demonstrations. GrD.
- 5811. TRADITIONAL INDIAN MUSIC: THE SACRED AND THE PROFANE.** (5 cr) Kagan
Vedic chant and regional folk music. Musical analysis and associations with belief systems, social institutions, history, and aesthetic expression. Music theory of India, notational systems, tonal and rhythmic materials, and classifications, musical forms, and performance practice. GrD
- 5841. MUSIC BIBLIOGRAPHY.** (4 cr; prereq 1606 or §) Riedel
Music bibliographies, reference materials, and monuments of music. GrD
- 5844, 5845. INTRODUCTION TO MUSICOLOGY.** (4 cr per qtr; prereq 5841 or §; offered 1976-77 and alt yrs) Riedel
Scope, aims, methods, and resources of research in musicology; acoustics, psychology, sociology, theory. GrD
- 5861. INTRODUCTION TO ETHNOMUSICOLOGY.** (5 cr; prereq §; offered 1977-78 and alt yrs) Kagan
Scope, aims, methods, and resources of research in ethnomusicology. Preliterate, folk, and high-art music of the world—style, form, usage, and function. Musical typology and comparative studies. GrD
- 5863. MUSICAL INSTRUMENTS OF THE WORLD.** (4 cr; offered 1977-78 and alt yrs) Kagan
Organology; classification and comparative study of musical instruments in all cultures; history, distribution, structure, technology, acoustics. Instruments in literature, myths, iconography. GrD

Course Descriptions—Major Sequences

Pedagogy and Conducting

- 5351f-5352w-5353s. PIANO PEDAGOGY I.** (2 cr per qtr; prereq 12 cr in 1101 or 1201 or 1301 or 1151-1152-1153 or ♯; offered 1976-77 and alt yrs)
Demonstration and discussion of group piano instruction at the elementary level. Literature appropriate to conceptual learning through the discovery approach. GrD
- 5354f-5355w-5356s. PIANO PEDAGOGY II.** (2 cr per qtr; prereq 12 cr in 1101 or 1201 or 1301 or 1151-1152-1153 or ♯; offered 1977-78 and alt yrs)
Piano pedagogy. Teaching materials; application of principles and techniques in a directed teaching setting. GrD
- 5357f, 5358w, 5359s. GRADUATE PIANO SEMINAR.** (2 cr per qtr; prereq ♯; offered 1977-78 and alt yrs) Freed, Weiser, McNab
Piano study instruction and performance. Terminology, repertory, evolution of piano construction, performance practice from baroque to contemporary literature. GrD
- 5361f-5362w-5363s. VIOLIN PEDAGOGY I.** (2 cr per qtr; prereq 12 cr in 1205 or 1206 or 1305 or 1306 or ♯) Massmann, West, Tartaglia
Teaching private violin students at beginning, intermediate, and advanced levels. Demonstrations of pedagogical techniques. GrD
- 5371f-5372w-5373s. DICTION FOR SINGERS.** (2 cr per qtr; prereq 12 cr of 1204 or ♯)
International Phonetic Association alphabet; principles used in singing pronunciation of English, Italian, German, and French. 5371: English and Italian. 5372: German. 5373: French. GrD
- 5375-5376. VOCAL PEDAGOGY.** (4 cr per qtr; prereq 18 cr applied voice, MuEd 3431, and/or ♯)
Anatomical study of the vocal mechanism. Principles and techniques of vocal production. Teaching methods and application of knowledge. GrD
- 5377. THE ADOLESCENT SINGING VOICE.** (3 cr; prereq 3xxx clearance in voice for vocal majors or 6 cr of applied voice for non-vocal majors) Schuessler
Principles of voice in teaching adolescent singers. Directed teaching, required readings, and study of relevant repertoire. GrD
- 5384-5385. CHORAL CONDUCTING.** (4 cr per qtr; prereq ♯; offered 1977-78 and alt yrs)
Lancaster
Choral conducting—hand techniques, sound control, articulation, breath control, intonation, etc. GrD
- 5387-5388. INSTRUMENTAL CONDUCTING.** (4 cr per qtr; prereq ♯)
Instrumental conducting—conducting techniques, score analysis, performance practice. GrD
- 5399f,w,s. PERFORMANCE IN CONDUCTING.** (2 cr; prereq 5388 or 5385, ♯)
Preparation and conducting, with documentation, of an ensemble program. GrD

Theory and Composition

- 1501f-1502w-1503s. MATERIALS AND STRUCTURE OF MUSIC I.** (2 cr per qtr; prereq fr theory entrance exam, acceptance in x2xx mode in applied music or ♯) Gross
1501: Clefs, transposition, modes, meter and rhythm, triads, part writing, cadences, dominant seventh chord. 1502: Nonchord tones, modulation, secondary dominants, design and elaboration of harmonic progressions. 1503: Diatonic seventh, secondary diminished seventh, augmented sixth and Neapolitan chords, variation and ternary forms. GrD
- 1504f-1505w-1506s. MATERIALS AND STRUCTURE OF MUSIC II.** (2 cr per qtr; prereq 1503, placement in x2xx mode in applied music or ♯) Humphries
Melodic, harmonic, and rhythmic concepts; contemporary materials and procedures; larger musical structures. GrD
- 1507su-1508su. SURVEY OF MELODIC AND HARMONIC PROCEDURES.** (3 cr per qtr; prereq ♯) Humphries
Melodic and harmonic structure. GrD
- 1511f-1512w-1513s. EAR-TRAINING AND SIGHT-SINGING I.** (2 cr per qtr; prereq fr theory entrance exam, acceptance in x2xx mode in applied music or ♯) Humphries
Melodic, harmonic, and rhythmic dictation; sight-singing; clef-reading; musicianship drills. GrD
- 1514f-1515w-1516s. EAR-TRAINING AND SIGHT-SINGING II.** (2 cr per qtr; prereq 1513, placement in x2xx mode in applied music or ♯) Humphries
Further development of aural skills presented in 1511-1512-1513. GrD

- 1517su-1518su. EAR-TRAINING AND SIGHT-SINGING.** (3 cr per qtr; prereq ♯) Humphries
Aural skills: sight-singing, interval recognition, melodic and harmonic dictation, vocal improvisation. GrD
- 1521f-1522w-1523s. KEYBOARD TRAINING.** (2 cr per qtr; primarily for piano and organ majors; prereq 1503 and 1513) Humphries
Keyboard harmony; realization of figured basses; score reading; transposition, improvisation. GrD
- 3541f-3542w-3543s. COUNTERPOINT.** (2 cr per qtr; prereq 1506) Fetler
Strict 16th-century and Bach-style counterpoint in two and three parts; writing of canons, motets, inventions, fugues. A creative approach. Writing musical examples by analysis within prescribed styles. GrD
- 3571. MUSIC CALLIGRAPHY.** (2 cr; prereq music or music education major; offered when feasible)
Techniques and forms of notation; manuscript preparation and layout; duplication methods; general copyright procedures. GrD
- 3584, 3585. MUSIC: ITS MEANING AND STRUCTURE.** (4 cr per qtr) Fetler
Selected works of various periods. Purpose, meaning, continuity, direction in music. Relationship of spontaneity and theoretical principles. GrD
- 5501f, 5502w, 5503s. ADVANCED MATERIALS AND STRUCTURE OF MUSIC.** (2 cr per qtr; prereq 1506) Argento
Stylistic study of musical materials and structures. 5501: Before 1850. 5502: 1850-1950. 5503: Since 1950; electronic, aleatoric, mathematical procedures. New attitudes and notational practices. GrD
- 5511. ADVANCED EAR-TRAINING I.** (3 cr; prereq 1516 or ♯) Fetler, Humphries
Dictation of melodic, harmonic, and rhythmic materials in a variety of styles. Contemporary sonorities. GrD
- 5512. ADVANCED EAR-TRAINING II.** (3 cr; prereq 1516 or ♯) Fetler, Humphries
Dictation of melodic, harmonic, rhythmic, and contrapuntal materials. Twentieth-century tone combinations, meters, and rhythms. Tonal, polytonal, and atonal exercises. Tonal memory. GrD
- 5521f, 5522w, 5523s. KEYBOARD HARMONY.** (2 cr per qtr; primarily for piano and organ majors; prereq 1506, sr or grad student) Humphries
Diatonic and chromatic harmony at the piano. Realization of figured bass music of the 17th and 18th centuries. Performance of choral, orchestral, and chamber music of Classical and early Romantic periods from open score, using all clefs. GrD
- 5532. ANALYSIS II.** (3 cr; prereq 1506) Stokes
Procedures and techniques of analysis applied to music composed since ca. 1950. GrD
- 5533. ANALYSIS III.** (3 cr; prereq 1506) Fetler, Ultan
Representative masterworks of the 20th century. GrD
- 5537. SCORE STUDY (CHORAL).** (4 cr; prereq sr or grad student and ♯)
Choral scores ranging from the Renaissance through the 20th century. Reading choral and choral-orchestral scores at the piano, including scores employing C clefs and transposing instruments. GrD
- 5541f-5542w-5543s. ADVANCED COUNTERPOINT.** (2 cr per qtr; prereq 3543; offered 1976-77 and alt yrs) Fetler
Practice in writing three- and four-voice fugues; contrapuntal devices and problems; polyphonic works of periods from *Ars Nova* to the present day. GrD
- 5551f, 5552w, 5553s. COMPOSITION I.** (2 cr per qtr; prereq 1506) Argento, Fetler, Ultan, Stokes
Original work in various forms. Techniques and styles of composition; development of original approaches. GrD
- 5554f, 5555w, 5556s. COMPOSITION II.** (2 cr per qtr; prereq 3543, 5553) Argento, Fetler, Ultan, Stokes
Original works in various forms. GrD
- 5560. ELECTRONIC MUSIC LABORATORY.** (2 cr per qtr; prereq 3791 or ♯) Stokes, Ultan
Electronic musical techniques and compositional methods. Performance in combination with instruments and voices. GrD
- 5561f-5562w-5563s. ORCHESTRATION.** (2 cr per qtr; prereq 1506) Argento
Scoring instruments for ensemble combinations and full orchestra. GrD
- 5564. BAND ARRANGING.** (4 cr; prereq 1506, 5563 or MuEd 3516 or ♯; offered 1977-78 and alt yrs) Schultz
Scoring techniques for wind and percussion instruments. Scoring for band. Creative arrangements for marching or concert band. GrD

Course Descriptions—Major Sequences

Miscellaneous

- 3970f,w,s. DIRECTED STUDIES.** (1-15 cr per qtr; prereq §, Δ) Staff
Guided individual reading or study.
- 3980f,w,s. DIRECTED TEACHING.** (1-4 cr per qtr; prereq §, Δ) Staff
- 5370. VOCAL PERFORMANCE SEMINAR.** (2 cr per qtr; prereq 18 cr in applied voice and §)
Vocal performance in a seminar setting. Performance problems—stage deportment, interpretation, vocal technique, lyric diction. GrD
- 5467-5468-5469. STAGE MOVEMENT AND ACTING FOR SINGERS.** (4 cr per qtr; prereq audition, §)
Stage movement and acting styles; application of techniques to music theatre. GrD
- 5748. INTRODUCTION TO PIPE ORGAN BUILDING.** (2 cr; prereq organ major...other music students with §; offered when feasible)
Construction, scaling, voicing, and tuning of organ pipes; layouts of mixtures; evaluation of specifications; construction and evaluation of different types of chests and actions; historical styles of organ building. GrD
- 5950. TOPICS IN MUSIC.** (1-5 cr per qtr; exact number of cr and prereq designated according to the nature of each offering)
For topics, see current *Class Schedule*.

Natural Science and Technology (NSci)

College of Biological Sciences

Institute of Technology

Courses in Natural Science and Technology, designed for students majoring in nonscience fields, are often cross-disciplinary and experimental. Presented by both CLA and non-CLA faculty, they are often offered on a quarter-by-quarter basis. For current courses, see the *Class Schedule* or inquire in 106 Johnston Hall. Information about Social Science and Literature and Fine Arts experimental courses is available from the same sources.

Biological Universe—See Biology

Physical Universe

- 1004. PHYSICAL WORLD: PHYSICS.** (4 cr, §any other physics courses; prereq 1 yr high school algebra)
Topics illustrate the methods of science and acquaint students with the physical universe. GrB
- 1005. PHYSICAL WORLD: CHEMISTRY.** (4 cr, §any other chemistry courses; prereq 1 yr high school algebra...high school chemistry and NSci 1004 recommended)
Fundamental concepts of chemical bonding, structure of matter, and forces in the physical world. Scientific methods and principles contribute to understanding of the environment and problems faced in improving it. GrB
- 3011. CHEMISTRY IN ART.** (4 cr; prereq major in studio arts, art history, design, art education or §; 3 lect plus lab)
Chemistry of materials and processes used by artists. Pigments and dyes, vehicles, solvents, plastics, metals, ceramics, photography, print processes, lasers, health hazards. GrB

Technology and Man

No credit in these courses for Institute of Technology students.

- 3101. INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY.** (4 cr; prereq high school physics or chemistry)
Technological aspects of protecting man and the environment from man's activities. Sources and magnitude of pollution problems in air, water, noise, solid waste. Environmental quality standards, pollution abatement options, and technological limitations. GrB

- 3201. PERSPECTIVES ON COMPUTERS AND SOCIETY.** (4 cr, §CSci 3001; prereq high school algebra)
History of automatic computing; current computer technology; the ethics and politics of massive information technologies; future trends. GrA
- 3202. CREATIVE AND ANALYTICAL APPLICATIONS OF COMPUTERS IN THE ARTS AND LITERATURE.** (4 cr, §CSci 3002)
Arts and humanities ideas leading to computer use. Relevance to parent fields and conversion to programmable form. Examples from computer graphics, electronic music, author and period identification, dictionary building, parsing, language studies, novel writing. Experimental course, approved through spring 1977. GrD
- 3301. ENERGY, POWER, AND SOCIETY.** (4 cr; prereq high school algebra, physics or chemistry)
The need for energy and its uses in society. Concepts of energy and power; problems of pollution and waste disposal. GrB
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq # of Office for Special Learning Opportunities)
Guided individual reading or study.

NAVAL SCIENCE

See Reserve Officers' Training Corps.

Near and Middle Eastern Studies

Staff—*Chairman*, Daniel Reisman, 178 Klaeber Court

Ancient Near Eastern and Jewish Studies: *Coordinator*, Daniel Reisman, 178 Klaeber Court; *Director of Undergraduate Studies*, Jonathan Paradise

Middle Eastern and Islamic Studies: *Coordinator*, Iraj Bashiri, 164 Klaeber Court; *Director of Undergraduate Studies*, George Koury

Professors: Chejne, Farah

Associate Professor: Reisman

Assistant Professors: Bashiri, Koury, Paradise

Near and Middle Eastern Studies encompasses study of the languages and cultures of Western Asia from antiquity to the present. The department is composed of two parallel programs: Ancient Near Eastern and Jewish Studies, and Middle Eastern and Islamic Studies.

ANCIENT NEAR EASTERN AND JEWISH STUDIES

Major programs are offered in ancient Near Eastern studies; Hebrew language and literature; and Jewish studies.

Adjunct Faculty—Professors: Bachrach (History), Berman (History), Cooperman (Sociology), Jones (History), Krislov (Political Science), Roshwald (Humanities)

Associate Professor: Kraabel (Classics)

B.A. MAJOR SEQUENCE—ANCIENT NEAR EASTERN STUDIES

Major Requirements—Heb or Arab 1101-1102-1103, 3011-3012-3013; Hist 3051-3052-3053

31 additional cr in courses numbered 3xxx or above in art and archaeology, history, and language and literature, chosen with adviser's approval

B.A. MAJOR SEQUENCE—HEBREW

Major Requirements—Heb 3015-3016-3017

2 qtrs of Biblical studies, 2 qtrs of Rabbinics, 2 qtrs of modern literature, one course numbered 3xxx or above, using materials in translation

Course Descriptions—Major Sequences

B.A. MAJOR SEQUENCE—JEWISH STUDIES

Major Requirements—Heb 1101-1102-1103, 3011-3012-3013; JwSt 3034
36 cr in courses numbered 3xxx or above in Jewish languages and literatures, social sciences, and philosophy and religion, chosen with adviser's approval

Akkadian (Akka)

5011-5012-5013. ELEMENTARY AKKADIAN. (4 cr per qtr; for advanced undergrads by permission only and for grad students)
Cuneiform script. Akkadian grammar, written drills, readings from historical annals, law collections, religious and epic literature. GrA

Aramaic (Aram)

5011, 5012, 5013. ARAMAIC. (4 cr per qtr; for students preparing for biblical studies, ancient history majors, and students specializing in Semitic languages; recommended for students of Talmud; prereq 1 yr Hebrew or Arabic or *)
5011: Biblical Aramaic—grammar, fluency in reading biblical and ancient Aramaic. 5012: Syriac—grammar, fluency of reading Syriac texts. 5013: Aramaic inscriptions—epigraphy, morphology, and syntax of Aramaic inscriptions, 9th to 5th centuries B.C. GrA

Hebrew (Heb)

1012w-1013s. BEGINNING INTENSIVE HEBREW. (5 cr per qtr; prereq qualifying exam, for which students receive 5 cr)
For students with previous experience in elementary Hebrew. Covers all of 1101-1102-1103. GrA

1101f-1102w-1103s. BEGINNING HEBREW. (5 cr per qtr; prereq * if Hebrew studied previously)
Speaking, reading, and writing modern Hebrew. Aural comprehension, pronunciation, basic grammar, biblical syntax. GrA

1104f-1105w-1106s. INTRODUCTION TO BIBLICAL HEBREW. (5 cr per qtr)
Hebrew alphabet, basic grammar, and vocabulary needed to read narrative portion of Bible. For students without previous knowledge of Hebrew. GrA

1301. SURVEY OF HEBREW GRAMMAR. (4 cr; for students who have ability to read simple texts but desire firm grammatical foundation; prereq at least 3 yrs study below college level or *)
Grammatical forms and patterns; systematic analysis of Hebrew texts, oral drills, composition. GrA

3011f-3012w-3013s. INTERMEDIATE HEBREW. (4 cr per qtr; prereq 1103, qualified fr or *)
Modern short stories, contemporary idiom, newspaper articles, biblical narratives. Fundamentals of grammar. Conducted chiefly in Hebrew. GrA

3015f-3016w-3017s. ADVANCED MODERN HEBREW. (4 cr per qtr; prereq 3013 or *)
(Continuation of 3013) Basic structure; understanding fluent native speech; self-expression in speech and composition; comprehension of advanced literature and the Hebrew press. Conducted in Hebrew. GrA

3111, 3112. RABBINIC TEXTS. (4 cr per qtr; prereq 3013, 3017 or 3202 or *)
Selections from Talmud, Midrash, and Codes. GrD

3121f, 3122w, 3123s. MEDIEVAL HEBREW LITERATURE. (4 cr per qtr; prereq 3013 or *)
3121: Medieval Hebrew Bible commentaries. Medieval Jewish biblical commentators: Rashi, Ibn Ezra, Kimchi, Abrovanel, others. Sources and methods. Recommended for students of biblical literature. 3122: Medieval Hebrew philosophy. Medieval Jewish philosophers: Sa'adia Gaon, Yehudah Halevi, Moses Maimonides. 3123: Medieval Hebrew poetry. Representative poets from Middle Ages: Yanai, Kalir, Ibn Gabirol, Halevy, others. GrD

3131w-3132s. TALMUDIC TEXTS. (4 cr per qtr; prereq 3017 or 3202 or *)
Consecutive study of a tractate of the Babylonian Talmud. Linguistic and historical problems. GrC

3201, 3202. A BOOK OF THE BIBLE. (4 cr per qtr; prereq 3013 or *)
Scientific study of a book of the Bible. Modern scholarly trends and medieval exegesis. Analysis of a selected text. GrD

- 3201H, 3202H. HONORS COURSE: A BOOK OF THE BIBLE.** (4 cr per qtr; prereq 3013 or §)
Students attend lectures in 3201, 3202 and meet with lecturer one additional period each week. GrD
- 3301. MODERN HEBREW ESSAY.** (4 cr; prereq 3017 or §)
Works from 19th and 20th century Hebrew essayists. Jewish nationalism, literary criticism, social and political issues, religion, philosophy. GrD
- 3304. MODERN HEBREW SHORT STORY.** (4 cr; prereq 3017 or §)
Works of Agnon, Hazaz, Yizhar, Yehoshua, and others. The disintegration of traditional society, freedom, militarism, alienation, genocide, and other themes. GrD
- 3307. MODERN HEBREW POETRY: 1880 TO THE PRESENT.** (4 cr; prereq 3017 or §)
Major Israeli poets such as Rachel, Lamdan, Shlonsky, Leah Goldberg, Alterman, Greenberg, Pagis, Amihai, Ravikovitch, and others. GrD
- 3980. DIRECTED INSTRUCTION.** (1-5 cr; prereq §)
Observation and discussion of language classes. Gradually increased participation of student in preparation and presentation of instructional materials to an elementary class. Evaluation of materials, teaching techniques. Seminars with instructor and staff on problems of language teaching.
- 5104f, 5105w. PROBLEMS IN BIBLICAL STUDIES.** (4 cr per qtr; for majors and others adequately prepared to read Bible in Hebrew; prereq 3202 or §)
Scholarly issues in modern biblical studies. Scientific methodology and use of research tools.
- 5970. DIRECTED READINGS.** (Cr ar; prereq 3013 or §)
Special problems for advanced students.
- 5990. HONORS COURSE: RESEARCH.** (Cr ar; prereq 5970 or §)
Independent research under guidance of faculty member. Must begin fall quarter.

Sumerian (Sum)

- 5011-5012. ELEMENTARY SUMERIAN.** (4 cr per qtr; for advanced undergrads who have had 2 yrs of another foreign language and for grad students)
Sumerian writing and grammar. Readings from classical Sumerian literary and historical texts. GrA

Ancient Near Eastern Studies (ANEJ)

- 3101. ANCIENT NEAR EASTERN TEXTS IN TRANSLATION.** (4 cr)
The Sumerian-Akkadian literary and historical tradition. Relationships of the Mesopotamian traditions, particularly to the Old Testament. GrD
- 3117. THE DEAD SEA SCROLLS: THE INTERTESTAMENTAL PERIOD.** (4 cr)
Jewish sectarianism in the pre-Christian period; position of the Dead Sea sect. Qumran texts in English; communal organization, modes of worship, theology, and Messiah concept as a precursor to later religious developments. No knowledge of Hebrew required. GrC
- 3501, 3502. ANCIENT ISRAEL.** (4 cr per qtr)
History of Israel; development of its religion. Biblical literature in the cultural, historical, and religious milieu of its origin. No knowledge of Hebrew required. GrC
- 5701. INTRODUCTION TO COMPARATIVE STUDY OF SEMITIC LANGUAGES.** (4 cr; prereq grad student or § and 1 yr of two Semitic languages)
Historical survey of linguistic development in Semitic languages. Phonology and morphology. GrA
- 5711. NORTHWEST SEMITIC INSCRIPTIONS.** (4 cr; prereq 3013 or §)
Introduction to Paleo-Hebrew script. Morphology, phonology, syntax, and linguistic changes in early Hebrew, Moabite, Phoenician, and Punic inscriptions. GrA
- 5970. DIRECTED STUDIES.** (1-4 cr per qtr; prereq §)
Guided individual reading or study.

Jewish Studies (JwSt)

- 1034. INTRODUCTION TO JUDAISM.** (4 cr, §3034)
Concepts, movements, and institutions in the evolution of classical Judaism, as manifested in the literature and festivals of the Jewish people from Second Commonwealth times to the present. GrC

Course Descriptions—Major Sequences

- 3034. INTRODUCTION TO JUDAISM.** (4 cr, §1034)
Same as 1034, with more paper work and reading. GrC
- 3115. MIDRASH IN TRANSLATION.** (4 cr)
Ancient writings as living texts for future generations; use of the Bible by ancient rabbis to solve moral, theological, and literary problems. Midrash as revelation of their values and solutions to contemporary problems. No knowledge of Hebrew required. GrC
- 3125. MAIMONIDES' GUIDE OF THE PERPLEXED.** (4 cr)
Medieval Jewish philosophy; problems of creation, providence, revelation, prophecy, and the law against the background of classical and medieval thought. No knowledge of Hebrew required. GrC
- 3126. THEMES IN MODERN JEWISH THOUGHT.** (4 cr)
Jewish identity since emancipation. Mendelssohn, Reform Judaism, Neoorthodox Judaism, Conservative Judaism, Cohen, Resenzweig, Buber, Political Zionism, Spiritual Zionism, Reconstructionism. GrC
- 3142, 3143. THEMES IN MEDIEVAL THOUGHT.** (4 cr per qtr)
Major Jewish philosophers including Saadia Gaon, Yehudah Halevi, and Maimonides. Topics such as faith and reason, proofs of God, creation, good and evil, Jewish peoplehood, particularism and universalism. GrC
- 3315. CONTEMPORARY ISRAELI LITERATURE IN TRANSLATION.** (4 cr)
Modern short stories and poetry. Works of Agnon, Yizhar, Hazaz, Yehoshua, Greenberg, Amihai, Pagis, and others. Alienation, crisis of faith, war, genocide, and freedom. GrD
- 3521. THE HOLOCAUST.** (4 cr)
Nazi destruction of Jewish life in Europe, 1933-1945. Historical, social background of European Jewish communities. Anti-Semitism and Nazism. Ghettos under Nazi rule; social and cultural organization, government. Nazi terror and destruction; Jewish resistance; historical consequences. GrC
- 5621. COMPARATIVE SOCIOLOGY OF JEWISH COMMUNITIES.** (4 cr; prereq Soc 1001 or 1002 or §)
Historical, cross-societal analysis of Jewish communities. Social organization, structure of Diaspora communities. Sephardic, Ashkenazic, Asian communities. Jews in American society; demography, social ecology, social psychology, stratification patterns. GrC
- Pol 5457. POLITICS AND GOVERNMENT IN ISRAEL.** (4 cr; prereq Pol 1051 or §)
Governmental structure of Israel and its political matrix. Problems of a society created under external stress, with planned institutions. The role of nominally ideological parties in a pragmatic political arrangement; conflict over a theocratic base for a modern secular state. GrC

MIDDLE EASTERN AND ISLAMIC STUDIES

Major programs are offered in Arabic language and literature, and Middle Eastern studies.

Adjunct Faculty—Professors: Barker (South Asian Studies), Sheppard (Art History), Spencer (Anthropology), Stavrou (History)

Associate Professor: Kaba (History)

Assistant Professor: Nimtz (Political Science)

Associate Faculty—Professor: Blackmore (International Agricultural Programs)

Associate Professor: Downing (Linguistics)

Assistant Professor: Ghazi (South Asian Studies)

B.A. MAJOR SEQUENCE—ARABIC LANGUAGE AND LITERATURE

Major Requirements—3011-3012-3013, 5011-5012-5013; MidE 3201-3202
9 additional cr in courses numbered 3xxx or above

B.A. MAJOR SEQUENCE—MIDDLE EASTERN STUDIES

Major Requirements—Arab or Per 1101-1102-1103, 3011-3012-3013
3 civilization courses centered on language selected
Five 3xxx-5xxx courses chosen with adviser's approval

Arabic (Arab)

- 1101-1102-1103. BEGINNING ARABIC.** (5 cr per qtr)
Fundamentals of Arabic, based on an audiolingual method; aural comprehension, pronunciation, practical reading knowledge. Basic grammar. GrA
- 3011-3012-3013. INTERMEDIATE ARABIC.** (4 cr per qtr; prereq 1103 or §)
Review of grammar; analysis of cultural and literary texts; contemporary short stories (third quarter). GrA
- 3101-3102-3103†. COLLOQUIAL ARABIC.** (5 cr per qtr; prereq 1103)
Study of one modern dialect. Laboratory practice. GrA
- 5011-5012-5013. ADVANCED LITERARY ARABIC AND COMPOSITION.** (5 cr per qtr; prereq 3013 or §)
Literary styles and genres in classical and modern writings; compositions based on texts studied. GrA
- 5014. STRUCTURE OF ARABIC.** (4 cr; prereq 2 yrs of Arabic or §)
Main structure of Arabic, classical and colloquial. GrA
- 5121. READINGS IN ISLAMIC THEOLOGICAL AND PHILOSOPHICAL TEXTS.** (4 cr; prereq 5013 or §) GrD
- 5211-5212. READINGS IN CLASSICAL ARABIC LITERATURE.** (4 cr per qtr; prereq 5013 or §) GrD
- 5231. ARABIC LITERATURE IN THE 19TH-20TH CENTURIES.** (4 cr; prereq 5013 or §) GrD
- 5900. TOPICS: READINGS IN CLASSICAL ARABIC.** (4 cr per qtr [12 cr max]; prereq 5013 or §)
Reading and discussion of selected classical works in Arabic. Topics specified in *Class Schedule*. GrA
- 5970. DIRECTED READINGS.** (Cr ar; prereq 5013 or §)
Special problems for advanced students; reading and periodic consultations.
- 5990. HONORS COURSE: DIRECTED RESEARCH.** (Cr ar; prereq 5970 or §)
Individual studies for honors work at advanced level.

Persian (Per)

- 1101-1102-1103. BEGINNING PERSIAN.** (5 cr per qtr)
Audiolingual course in spoken and written modern Persian. GrA
- 3011-3012-3013. INTERMEDIATE PERSIAN.** (4 cr per qtr; prereq 1103 or §)
Grammar drills, reading, and discussion, in Persian, of graded texts in modern Persian. GrA
- 5011. STRUCTURE OF PERSIAN.** (4 cr; prereq 3013 or §)
Phonology, morphology, and syntax of Persian; linguistic skills necessary for understanding modern standard Persian. GrA
- 5900. READINGS IN AN IRANIAN LANGUAGE.** (1-4 cr per qtr [12 cr max]; prereq 3013 or §)
Reading and discussion of selected pre-medieval and medieval Iranian texts. Topics specified in *Class Schedule*.
- 5970. DIRECTED READINGS.** (Cr ar; prereq 3013 or §)
Special problems for advanced students; readings and periodic consultations.
- 5990. DIRECTED RESEARCH.** (4 cr per qtr [12 cr max]; prereq 3013 or §)
Application of modern analytical techniques to the study of medieval and modern Persian texts.

Course Descriptions—Major Sequences

Turkish (Turk)

- 1101-1102-1103. BEGINNING TURKISH.** (5 cr per qtr)
Vocabulary forms and syntax; intensive graded reading and speaking. GrA
- 5970. DIRECTED READINGS.** (Cr ar; prereq 1103 or #)
Special problems for advanced students.

Middle Eastern Studies (MidE)

- 1036. THE RELIGION OF ISLAM.** (4 cr, \$ReIS 1036)
The rise of Islam in historical context; the role of Muhammad, Koran, traditions; fundamentals and observances of the faith; sectarian movements; the spread of Islam into Asia and Africa; Baha'i and Black Muslim components; reformist movements and change. GrC
- 3001. SURVEY: THE MIDDLE EAST.** (4 cr, \$5001)
Cultural, religious, and scholarly achievements of Middle Eastern peoples from pre-Islamic times to the present. GrC
- 3005. ISLAM AND THE WEST.** (4 cr)
Sources of Islamic civilization; the spread of Islam and its encounter and interaction with medieval Europe; the Islamic legacy; development and transmission of classical thought. GrC
- 3101. SURVEY: MIDDLE EASTERN LITERATURES IN TRANSLATION.** (4 cr)
Introduction to the literature of the Turks, Persians, Arabs, and their Moslem neighbors. Major literary genres and innovations from pre-Islamic times to the present. GrD
- 3201. ARABIC LITERATURE IN TRANSLATION: PRE-ISLAMIC TO 1500.** (4 cr; prereq 3101)
Golden age of Arabic poetry: poets, themes, and trends; new developments in the classical age; the rise of belletristic writings; prose styles; folk literature; *Bidpai Fables* and the *Arabian Nights*: selected readings; narrative genres, sacred and profane. GrD
- 3202. ARABIC LITERATURE IN TRANSLATION: THE REVIVAL AGE, 1800 TO THE PRESENT.** (4 cr; prereq 3101)
Revivalist and rejuvenative trends in poetry; the free verse movement, poets and themes; poetry of social consciousness; the novel, novella, short stories; leading fiction and drama writers. GrD
- 3205. CLASSICAL MYSTICAL LITERATURE IN TRANSLATION.** (4 cr)
Translated works of leading Sufi writers, theologians, and poets. GrD
- 3511, 3512. IRANIAN CIVILIZATION.** (4 cr per qtr; prereq 3001 or #)
3511: Iranian civilization from the Achaemenids to the rise of the Samanids; the role of the common man. *3512*: From the fall of the Samanids to the present; the role of the common man. GrC
- 3541-3542-3543. HISTORY OF THE ARABS.** (4 cr per qtr; prereq 3001 or #)
3541: From pre-Islamic days to downfall of Umayyads of Damascus. *3542*: From Abbasids to fall of Baghdad in 1258. *3543*: From Crusades to modern times. GrC
- 3541H-3542H-3543H. HONORS COURSE: HISTORY OF THE ARABS.** (4 cr per qtr; prereq 3001 or #)
See description of 3541-3542-3543. Students attend 3541-3542-3543 lectures and meet with lecturer one additional period each week. GrC
- 3545. ISLAMIC MYSTICISM.** (4 cr)
The rise of Sufism, from asceticism to theosophical mysticism; the leading historical personalities, their beliefs and preachings; relationship to Orthodox Islam and non-Muslim mystical movements; concepts and organizations; the place of Sufism in modern religious trends. GrC
- 3551-3552. INTELLECTUAL LIFE IN ISLAM.** (4 cr per qtr)
3551: Rise of Muslim scholarship during 1st century of Islam. *3552*: Branches of Muslim scholarship in medieval times. GrC
- 3555. ZOROASTRIANISM.** (4 cr; no knowledge of Persian required)
Zoroastrianism as revealed in the Gathas and expanded in the Vendidad. GrC
- 3601. PERSIAN FICTION IN TRANSLATION.** (4 cr; prereq 3101 or #; offered concurrently with 5601)
Major Persian works: *The Blind Owl* by Hedayat, *The Patient Stone* by Chubak, and *The Wedding* by Se'edi. GrD
- 3602. PERSIAN POETRY IN TRANSLATION.** (4 cr; prereq 3101 or #; offered concurrently with 5602)

Major poetic works of Iran: quatrains of Omar Khayyam, sonnets of Hafiz; "new" Persian poetry such as the works of Forugh Farrokhzad. GrD

- 5001. SURVEY: THE MIDDLE EAST.** (4 cr, §3001; prereq grad student or §)
See description of 3001. GrC
- 5121. THE MIDDLE EAST IN WORLD AFFAIRS: OTTOMAN PERSIAN SPHERE, 1300-1789.** (4 cr; prereq §)
Rise and efflorescence of the Il-Khanid, Timurid, and Safawid civilizations in Persia and of the Ottoman in West Asia: historical, institutional, cultural, socioeconomic development; contacts with the West. GrC
- 5123. THE MIDDLE EAST IN WORLD AFFAIRS: THE 19TH CENTURY.** (4 cr; prereq 3001 or §)
Structure of society; cultural and political impact of the West; revivalist and nationalist trends; reformist and separatist movements. GrC
- 5125. THE MIDDLE EAST IN WORLD AFFAIRS: THE ARAB WORLD, TURKEY AND IRAN, 1915 TO THE PRESENT.** (4 cr; prereq 3001 or §)
Struggle for independence; rise of Turkey and Iran; problems of social, cultural, economic, and literary developments; modernizing trends; role in international affairs. GrC
- 5311. HISPANO-ARABIC POETRY.** (4 cr; prereq 5503 or §) GrD
- 5405. IBN KHALDUN.** (4 cr; prereq 5503) GrC
- 5406. IBN HAZM OF CORDOVA.** (4 cr; prereq 5503) GrC
- 5501-5502-5503. HISPANO-ARABIC LITERATURE AND CULTURE.** (4 cr per qtr; prereq §)
Literary styles and genres in classical and modern writings; compositions based on texts studied. GrD
- 5546. THEOLOGICAL AND MYSTICAL DOCTRINES OF ISLAM.** (4 cr)
Classical works of scholastics and mystics; jurists and philosophers; landmarks of Islamic religious beliefs and institutions. Content analysis, commencing with the Qur'an and the traditions. GrC
- 5601. PERSIAN FICTION.** (4 cr; prereq Per 3013 or §; offered concurrently with 3601)
Major Persian prose works, using original texts: *Buf-e kur*, *saenge saebur*, and *ezdevaj*. GrD
- 5602. PERSIAN POETRY.** (4 cr; prereq Per 3013 or §; offered concurrently with 3602)
Major Persian poetic works, using original texts: *Ruba'iyat-e omar khayyam*, the *ghazals* of Hafiz, development of *se're now*. GrD

NORWEGIAN

See Scandinavian.

PERSIAN

See Near and Middle Eastern Studies.

Personal Orientation (PO)

Student Counseling Bureau

- 1001. HOW TO STUDY.** (2 cr; does not count toward BA degree)
Practical assistance in developing efficient study and concentration methods, preparing for examinations, and improving reading skill. Student attitudes and motivations and their relation to satisfactory performance.

PHILOLOGY

See Classics.

Philosophy (Phil)

Staff—*Chairman*, John Wallace, 399 Ford Hall; *Director of Graduate Studies*, Burnham Terrell, 335 Ford Hall; *Director of Undergraduate Studies*, Douglas Lewis, 305 Ford Hall

Professors: Anscombe (visiting Hill professor, fall 1976), Earman, Gunderson, Hill, Hochberg, Hopkins, Mason, Maxwell, Sartorius, Terrell, Wallace

Associate Professors: Dahl, Dolan, Eaton, Hanson, Lewis, Peterson, Root, Savage

Assistant Professors: Buchanan, Harper

Philosophy studies the most general principles of the nature of reality, human conduct, and the particular branches of knowledge.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1001 or 3201; 1002

Major Requirements—Minimum of 35 3xxx or 5xxx cr, including 3003 or 3003H and at least 5 additional cr in history of philosophy

At least 15 5xxx cr

General Education—Students interested in moral and social issues will find 1003, 1004, 3302, and 5xxx-level ethics and political philosophy courses of value. Courses in logic (1001 and 3201) and philosophy of science (3631) will be of value to science majors. Courses in aesthetics, philosophy of language, and history of philosophy contain material of interest to nonspecialists. Students intending to enter theological seminaries or other institutions of religious training should note the pretheology curriculum.

1001f,w,s. LOGIC. (5 cr) Staff

Application of formal techniques for evaluating arguments. GrA

1002f,w,s. INTRODUCTION TO PHILOSOPHY. (5 cr; open to 3rd-4th fr) Staff

Problems, principal methods and schools of philosophy; historical and contemporary views. GrC

1002H. HONORS COURSE: INTRODUCTION TO PHILOSOPHY. (5 cr; prereq Honors regis or §) Staff

For description, see 1002. GrC

1003f,w,s. ETHICS. (5 cr) Staff

Problems that arise when human beings attempt to think systematically about conduct and value. GrC

1004. INTRODUCTION TO POLITICAL PHILOSOPHY. (5 cr) Staff

Central concepts and principal theories of political philosophy. GrC

1410. SELECTED TOPICS IN MORAL AND POLITICAL PHILOSOPHY. (5 cr per qtr) Staff

Moral and political philosophy seen through study of a single topic—nonviolence, justice, social choice, anarchy, medical ethics. GrC

3001f, 3002w, 3003s, 3004f. GENERAL HISTORY OF WESTERN PHILOSOPHY. (5 cr per qtr) Staff

Major developments in Western philosophic thought from its beginnings among Greeks to end of 19th century. 3001: Greek philosophy, pre-Socratics, Socrates, Plato, Aristotle. 3002: Stoicism, Epicureanism, medieval Christian synthesis. 3003: Modern philosophy from Descartes through Hume. 3004: Later modern philosophy from Kant through 19th century. GrC

3001Hf, 3002Hw, 3003Hs, 3004Hf. HONORS COURSE: GENERAL HISTORY OF WESTERN PHILOSOPHY. (5 cr per qtr; prereq Honors regis or §) Staff

For description, see 3001, 3002, 3003, 3004. GrC

3201f. ELEMENTS OF SYMBOLIC LOGIC I. (5 cr, \$5201) Dahl, Dolan, Hanson, Wallace

Development of a formalized language. Syntax and semantics of sentential and first-order predicate logic. Deductive systems. GrA

- 3202w. ELEMENTS OF SYMBOLIC LOGIC II.** (5 cr, §5202; prereq 3201 or §) Dolan, Hanson, Wallace
Further study of first-order predicate logic: identity, axiomatic development. Various metatheorems: soundness, consistency, and completeness. GrA
- 3231. INTRODUCTION TO THE PHILOSOPHY OF LANGUAGE.** (5 cr; prereq 1001 or 3201 or 5201 or §) Dolan, Mason, Peterson, Root, Wallace
Elementary issues concerning the nature of reference, linguistic convention, linguistic truth, translation, synonymy or the relation between language and thought. GrA
- 3231H. HONORS COURSE: INTRODUCTION TO THE PHILOSOPHY OF LANGUAGE.** (5 cr; prereq Honors regis or §)
For description, see 3231. GrA
- 3302. MORAL PROBLEMS OF CONTEMPORARY SOCIETY.** (5 cr) Mason, Dahl, Dolan, Sartorius, Terrell
Selected problems of current interest. GrC
- 3502. INTRODUCTION TO AESTHETICS.** (5 cr) Eaton
Development of aesthetic theories from Plato to Tolstoy. GrD
- 3614. THE LOGIC AND ETHICS OF SOCIAL COOPERATION.** (5 cr) Sartorius
The rationality and morality of voluntary cooperation toward the production of public goods. General theory; application to population growth, overconsumption, arms control, urban planning, economic stabilization, other problems. GrC
- 3631. LOGIC OF SCIENTIFIC REASONING.** (5 cr, §5631; prereq 1001 or 3201) Hanson, Maxwell
Principles of scientific method; contemporary approaches to scientific inference. GrA
- 3900. HONORS COURSE: UNDERGRADUATE SEMINAR.** (5 cr per qtr; prereq Honors regis and 10 cr in 3xxx-5xxx philosophy courses) Staff
Topics of contemporary interest, varying from quarter to quarter.
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq §) Staff
Guided individual reading or study.
- 3980. DIRECTED INSTRUCTION.** (1-5 cr; prereq §) Staff
- 3990. HONORS COURSE: THESIS.** (5 cr per qtr; prereq sr, Honors regis in philosophy, GPA of 3.50 or better in previous work)
Individual assignments carried out under faculty direction.
- 5003. AMERICAN PHILOSOPHY.** (5 cr; prereq 1002 or 1 qtr history of philosophy or §; offered when feasible)
Selected American philosophers such as Edwards, Peirce, James, Dewey, Lewis. GrC
- 5004. SOCRATIC DIALOGUES.** (5 cr; prereq 3001 or §) Harper, Hopkins, Lewis, Peterson
Early Socratic dialogues of Plato; Socratic method and paradoxes. GrC
- 5005. PLATO.** (5 cr; prereq 3001 or §) Harper, Hopkins, Peterson
Major dialogues. GrC
- 5008. ARISTOTLE.** (5 cr; prereq 1 qtr history of philosophy or §) Dahl, Harper, Peterson
Passages from major works. GrC
- 5012. PLATO AND ARISTOTLE.** (5 cr; prereq 3001 or §; offered when feasible) Dahl, Harper, Peterson
Comparative presentation of metaphysical and epistemological views; problems of universals. GrC
- 5020. PROBLEMS IN POST-ARISTOTELIAN PHILOSOPHY.** (4 cr per qtr, §Clas 5020; prereq 3001 or 3002 or 3900 or 5008 or 5012 or Clas 5085 or 5086 or §) Harper
Problems in philosophy after Aristotle and before Augustine. Topics may include Stoics, Epicureans, Cynics, Sceptics, neo-Pythagoreans, middle and late Platonists. GrC
- 5021. MEDIEVAL PHILOSOPHY.** (5 cr; prereq 3001 or 3002 or §) Hopkins
Selected topics in writings of Augustine, Anselm, Aquinas, Scotus, and Ockham. GrC
- 5033. RATIONALISM.** (5 cr; prereq 3003 or §; offered when feasible) Lewis
Descartes, Spinoza, and Leibniz. GrC
- 5034. DESCARTES.** (5 cr; prereq 3003 or §) Lewis, Root
Philosophical works. GrC
- 5035. SPINOZA.** (5 cr; prereq 3003 or §; offered when feasible) Lewis
The *Ethics*. GrC
- 5036. LEIBNIZ.** (5 cr; prereq 3003 or §; offered when feasible) Dahl, Earman, Lewis, Wallace
Selected philosophical writings. GrC

Course Descriptions—Major Sequences

- 5037. LOCKE AND LEIBNIZ ON LANGUAGE AND MIND.** (5 cr; prereq 5 cr in philosophy or §)
Gunderson, Root
Locke's *Essay*, Books I and III, and Leibniz's reply in *New Essays*; relating the controversy to current and historical issues concerning language and the mind. GrA
- 5041. LOCKE.** (5 cr; prereq 3003 or §) Gunderson, Lewis, Terrell
The *Essay Concerning Human Understanding*. GrC
- 5042. BERKELEY.** (5 cr; prereq 3003 or §) Lewis, Terrell
Philosophical works. GrC
- 5043. HUME.** (5 cr; prereq 3003 or §) Terrell
Treatise and Inquiry. GrC
- 5044. LATER EMPIRICISM.** (5 cr; prereq 3003 or §; offered when feasible) Terrell
Empiricist traditions, principally in Great Britain, from Hume to Russell. GrC
- 5046. KANT.** (5 cr; prereq 3003 or 3004 or §) Buchanan, Dahl, Mason
Passages from major works. GrC
- 5052. BRENTANO.** (5 cr; prereq 3003 or §; offered when feasible) Terrell
Philosophy of Brentano; significance in background of contemporary philosophy. GrC
- 5054. KIERKEGAARD.** (5 cr; prereq 1 qtr history of philosophy or §) Mason
Major philosophical works. GrC
- 5055. SOCIAL AND POLITICAL PHILOSOPHY OF KARL MARX.** (5 cr; prereq 3004 or §)
Buchanan, Hopkins
Central topics in Marx's social and political philosophy; philosophy of history, alienation, emancipation, critique of ethical and political ideas, death of the state. Marx's criticism of traditional epistemology and methodology; his epistemological and methodological assumptions. GrC
- 5068. LATER PHILOSOPHY OF WITTGENSTEIN.** (5 cr; prereq 5231 or 3003 or §) Mason
Philosophical Investigations. GrC
- 5076. THOREAU.** (5 cr; prereq 5 cr in philosophy or §) Dolan
Walden and selected essays. GrC
- 5101. METAPHYSICS.** (5 cr; prereq 1 qtr history of philosophy or §) Dolan, Earman, Hochberg, Wallace
Philosophical theories concerning the nature of reality. GrA
- 5105. THEORY OF KNOWLEDGE.** (5 cr; prereq 1001 or 3201 or §) Dolan, Earman, Maxwell, Savage
Problems and concepts involved in the explanation and justification of claims to knowledge. GrA
- 5201. ELEMENTS OF SYMBOLIC LOGIC I.** (5 cr, §3201) Dahl, Dolan, Hanson, Wallace
For description, see 3201. GrA
- 5202. ELEMENTS OF SYMBOLIC LOGIC II.** (5 cr, §3202; prereq 3201 or 5201 or §) Dolan, Hanson, Wallace
For description, see 3202. GrA
- 5203. INTERMEDIATE SYMBOLIC LOGIC.** (5 cr; prereq 3202 or 5202) Hanson, Wallace
Axiomatic development of first-order predicate logic and first-order number theory; proofs of limitative results such as undecidability of predicate logic and incompleteness of number theory. Significance of limitative results. GrA
- 5211. NONCLASSICAL LOGICS.** (5 cr; prereq 3202 or 5202 or Math 5162 or §) Hanson
Axiomatic and semantical treatment of propositional and predicate modal logics; problems of interpreting modal languages; problem of formalizing the notion of entailment. GrA
- 5221. PHILOSOPHY OF LOGIC.** (5 cr; prereq 3202 or 5202 or Math 5162 or §) Hochberg, Wallace
Logic and reality; relation of logic to mathematics; theory of descriptions, paradoxes; identity. GrA
- 5231. PHILOSOPHY OF LANGUAGE.** (5 cr; prereq 1001 or 3201 or 5201 or §) Dolan, Mason, Peterson, Root, Wallace
Central topics. Theories of reference, linguistic truth, relation of language and thought, translation and synonymy. GrA
- 5232. TOPICS IN THE PHILOSOPHY OF LANGUAGE.** (5 cr; prereq 3231 or 5231 or §) Dolan, Mason, Peterson, Root, Wallace
Detailed study of topics surveyed in 5231 or other topics central to the philosophy of language. GrA

- 5301. HISTORY OF ETHICS: BRITISH MORALISTS.** (5 cr; prereq 1003 or 1 qtr history of philosophy or §) Terrell
Ethical theory in Great Britain from 17th through 19th centuries. GrC
- 5302. HISTORY OF ETHICS: SELECTED CLASSICAL MORALISTS.** (5 cr; prereq 1003 or 1 qtr history of philosophy or §) Buchanan, Dahl
Moral philosophy outside of British tradition (see 5301). Specific topics announced in *Class Schedule*. GrC
- 5311. ETHICAL THEORY.** (5 cr; prereq 1003 or §) Dahl, Mason, Sartorius, Wallace
Representative theories on the nature and justification of moral judgments. GrC
- 5321. THEORIES OF JUSTICE.** (5 cr; prereq 1003 or 1004 or 5311 or §) Buchanan, Mason
Philosophical accounts of the concept and principles of justice. GrC
- 5324. ETHICS AND EDUCATION.** (5 cr; prereq 10 cr in philosophy or education or §) Terrell
Recent studies relating ethical theory and philosophy of education; theories of moral development and moral education. GrC
- 5414. POLITICAL PHILOSOPHY.** (5 cr; prereq 1004 or §) Buchanan, Dolan, Sartorius
Central concepts and principal theories of political philosophy. GrC
- 5415. PHILOSOPHY OF LAW.** (5 cr; prereq 1003 or 1004 or 3302 or social science major or §) Sartorius
Analytical accounts of law and legal obligation. GrC
- 5501. PRINCIPLES OF AESTHETICS.** (5 cr; prereq 3502 or §) Eaton, Gunderson
Standards of evaluation; aesthetic experience; representation, meaning. GrD
- 5512. PHILOSOPHY AND LITERARY CRITICISM.** (5 cr; prereq 5 cr in philosophy or §) Eaton, Gunderson, Wallace
Goals and aims of literary criticism; the problems that arise in attempting to justify principles of criticism. GrD
- 5521. PHILOSOPHY OF RELIGION.** (5 cr; prereq 10 cr in philosophy) Hopkins
Grounds and sanctions of religion, according to various philosophies. GrC
- 5601. PHILOSOPHY OF SCIENCE.** (5 cr; prereq 1001 or 3201 or §) Earman, Maxwell
Meaning, methods, and implications of modern science. Basic concepts, presuppositions, and procedures. GrA
- 5602. DETERMINISM AND CAUSATION.** (5 cr; prereq 1001 or §) Earman
Attempts to analyze the concepts of determinism and causation and their importance for science and human affairs. GrA
- 5611. PHILOSOPHY OF THE SOCIAL SCIENCES I.** (5 cr; prereq 15 cr in philosophy or social sciences or §) Root, Sartorius
Criteria for describing and explaining human actions; problems of objectivity, reduction, freedom. GrC
- 5612. PHILOSOPHY OF THE SOCIAL SCIENCES II.** (5 cr; prereq 5611; offered when feasible)
Further study of certain topics introduced in 5611; analysis of models and measurements. GrC
- 5613. RELATIVISM.** (5 cr; prereq 1002 or §) Mason, Root, Wallace
Attempts of philosophers, social scientists, and literature students to understand aspects of human life and discourse by appealing to alleged relativities of concepts and institutions to culture, language, world view, or conceptual scheme. GrC
- 5615. MINDS, BODIES, AND MACHINES.** (5 cr; prereq 5 cr in philosophy or §) Gunderson
Philosophical relevance of cybernetics, artificial intelligence, and computer simulation. GrC
- 5621. PHILOSOPHY OF HISTORY.** (5 cr; prereq 10 cr in philosophy or 15 cr in history) Hopkins, Mason
Philosophical interpretations of history, philosophical aspects of historical methods. GrC
- 5631. LOGIC OF SCIENTIFIC REASONING.** (5 cr, §3631; prereq 1001 or 3201) Hanson, Maxwell
For description, see 3631. GrA
- 5701. SURVEY OF CONTEMPORARY PHILOSOPHY.** (5 cr; prereq 3003 or §) Staff
Current systematic and critical philosophies as represented by principal exponents. GrC
- 5720, 5730, 5740. STUDIES IN CONTEMPORARY PHILOSOPHERS.** (5 cr per qtr; prereq 3003 or §) Staff
Specific topics announced in *Class Schedule*.

Course Descriptions—Major Sequences

- 5760, 5770. SELECTED TOPICS IN PHILOSOPHY.** (5 cr per qtr; prereq 5 3xxx-5xxx cr in philosophy or §) Staff
Philosophical problems of contemporary interest. Specific topics announced in *Class Schedule*.
- 5781. CONTEMPORARY EXISTENTIALISM.** (5 cr; prereq 3003 or 3004 or 5054 or §)
Hochberg, Hopkins, Mason
Writings of existentialist philosophers since Kierkegaard. GrC
- 5911. PHILOSOPHY OF MODERN LITERATURE.** (5 cr; prereq major or concentration in philosophy or literature, or §; offered when feasible) Eaton, Terrell
Basic philosophical ideas in modern civilization as expressed in major works of literature. GrD
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq §) Staff
Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (1-5 cr per qtr; prereq §) Staff

Physical Education (PE)

College of Education

Staff—Acting Division Head, Mary L. Young, 224 Cooke Hall; Coordinator of Physical Activity Program, March L. Krotee, 223a Cooke Hall

Physical education courses open to CLA students serve recreational, professional, and general educational purposes. CLA students may apply up to 6 PE credits toward degrees. (College of Education students must complete 3 or more PE credits for their degrees.)

Beginning activity courses require no prerequisites. Skills or experiences may substitute for prerequisites listed for courses at more advanced levels. Advisers in Cooke and Norris Halls can provide information about appropriate levels. All courses involve participation at a high energy expenditure level and are considered high intensity in nature unless otherwise indicated. Students must know their health condition and any limitations on their ability to participate safely in physical activities. Students who have questions about their health status should seek advice from a physician.

Registration for courses numbered below 1500 takes place in 12 Johnston Hall (Minneapolis) or Coffey Hall (St. Paul); for those numbered 1500 or above, at 1425 University Avenue S.E., Minneapolis. Towels, lockers, and uniforms may be rented for PE classes; fees are paid at 115 Morrill Hall (for classes at Norris Hall), Cooke Hall, or Coffey Hall.

To be assured of a place in a class, a student must attend its first meeting. All courses are for 1 credit unless otherwise indicated.

Adapted Activities

- 1001. ACTIVITIES FOR THE HANDICAPPED.** (Prereq §; individually prescribed)

Aquatics

- 1004. DIVING, SPRINGBOARD.** (Prereq 1007)
- 1007. SWIMMING**
- 1008. WATER POLO**
- 1107. SWIMMING.** (Prereq 1007 or equiv)
- 1204. DIVING, SPRINGBOARD.** (Prereq 1007 or equiv)
- 1205. SCUBA AND SKIN DIVING.** (Prereq 1107 or equiv)
- 1207. SWIMMING.** (Prereq 1107 or equiv)

- 1306. SENIOR LIFESAVING. (Prereq ability to swim 440 yards)
- 1307. SWIMMING. (Prereq 1207 or equiv)
- 1309. SYNCHRONIZED SWIMMING. (Prereq 1207 or equiv)
- 1410. WATER SAFETY INSTRUCTOR. (2 cr; prereq current American Red Cross Senior Lifesaving certificate)

Combatives

- 1034. JUDO
- 1035. KARATE
- 1039. WRESTLING
- 1134. JUDO. (Prereq 1034 or equiv)
- 1135. KARATE. (Prereq 1035 or equiv)
- 1139. WRESTLING. (Prereq 1039 or equiv)

Conditioning

- 1014. CONDITIONING
- 1015. WEIGHT TRAINING
- 1016. POSTURE AND INDIVIDUAL EXERCISE. (Moderate intensity)

Dance

- 1022. BALLROOM DANCE
- 1023. FOLK AND SQUARE DANCE
- 1024. MODERN DANCE. GrD
- 1122. BALLROOM DANCE. (Prereq 1022 or equiv)
- 1123. FOLK AND SQUARE DANCE. (Prereq 1023 or equiv)
- 1124. MODERN DANCE. (Prereq 1024 or equiv) GrD
- 1224. MODERN DANCE. (Prereq 1124 or equiv) GrD
- 1324. MODERN DANCE. (Prereq 1224 or equiv) GrD
- 1325. MODERN DANCE, COMPOSITION. (2 cr; prereq 1224 or equiv) GrD
- 1425. MODERN DANCE, COMPOSITION. (2 cr; prereq 1325 or equiv) GrD
- 1426. MODERN DANCE, PRODUCTION. (3 cr; prereq 1224 or 1324) GrD
- 1515-1615-1715. MODERN DANCE TECHNIQUE AND IMPROVISATION I, II, AND III. (2 cr per qtr; prereq physical education major or dance minor)
Basic technique of modern dance; relationship to form, design, and exploration of movement. GrD
- 1517. ETHNIC DANCE HERITAGE I. (2 cr per qtr [8 cr max])
Relationship of dance to the culture from which it evolves; emphasis on Native American, East Indian, Afro-American, or Spanish dance. GrD
- 1518-1618-1718. BALLET I, II, AND III. (2 cr per qtr)
1518: Fundamental technique of classical ballet. 1618-1718: Intense discipline instruction in the technique of ballet. GrD
- 3180. HISTORY AND TRENDS IN DANCE. (3 cr; prereq 1517)
History and philosophy of dance; relation to allied arts. GrD
- 3390. DANCE COMPOSITION. (2 cr; prereq advanced modern dance or equiv)
Principles of composition with practical application. GrD
- 3391. DANCE COMPOSITION. (2 cr; prereq 3390 or equiv)
Advanced theory and practice; various approaches to dance composition. GrD
- 3392. DANCE PRODUCTION. (3 cr; prereq 1517)
Culmination of dance composition in a dance production; experience in stagecraft and costuming. GrD

Course Descriptions—Major Sequences

- 3395. ADVANCED IMPROVISATION.** (Prereq 1515-1615-1715 or §)
Exploration and spontaneous invention through greater awareness of space, movement, and the community environment. GrD
- 3396. DANCE REPERTORY THEATRE.** (3 cr per qtr [9 cr max]; prereq audition or §)
Technique and improvisation in the construction and performance of dance theatre work under a guest choreographer; professionally oriented dance experience for advanced students. GrD
- 3397. DANCE ACCOMPANIMENT.** (3 cr; prereq 1515-1615 or §)
Relationship between dance and music in accompanying warmups, technique sequences, and compositional ventures. GrD

Foundations of Physical Activity

- 1055. FOUNDATIONS OF PHYSICAL ACTIVITY.** (2 cr)

Fundamental Movement

- 1020. FUNDAMENTALS, MOVEMENT**
- 1121. RHYTHMIC ANALYSIS.** (Prereq 1020 or §)

Gymnastics

- 1017. RHYTHMIC GYMNASTICS**
- 1046. APPARATUS**
- 1060. TUMBLING, FLOOR EXERCISE, AND TRAMPOLINE**
- 1146. APPARATUS-GYMNASTICS.** (Prereq 1046 or equiv)
- 1160. TUMBLING, FLOOR EXERCISE, AND TRAMPOLINE.** (Prereq 1060 or equiv)

Individual or Dual Sports and Activities

- 1029. HANDBALL**
- 1031. SABRE FENCING.** (Not open to anyone who has had foil fencing)
- 1032. BADMINTON**
- 1033. FENCING**
- 1036. PADDLEBALL-RACQUETBALL**
- 1037. SQUASH RACQUETS**
- 1038. TENNIS**
- 1040. TABLE TENNIS**
- 1045. ANGLING.** (Moderate intensity)
- 1047. ARCHERY.** (Moderate intensity)
- 1048. BOWLING.** (Moderate intensity)
- 1049. CAMPING.** (Moderate intensity)
- 1050. GOLF.** (Moderate intensity)
- 1051. HUNTING.** (Moderate intensity)
- 1052. RIFLE MARKSMANSHIP.** (Moderate intensity)
- 1053. ICE SKATING**
- 1056. NORDIC (CROSS-COUNTRY) SKIING**
- 1057. SKIING**
- 1058. PHYSICAL EDUCATION FOR FAMILY LIVING.** (Moderate intensity)
- 1059. TRACK AND FIELD**
- 1132. BADMINTON.** (Prereq 1032 or equiv)
- 1133. FENCING.** (Prereq 1033 or equiv)

1138. **TENNIS.** (Prereq 1038 or equiv)
 1145. **ANGLING.** (Prereq 1045 or equiv; moderate intensity)
 1147. **ARCHERY.** (Prereq 1047 or equiv; moderate intensity)
 1148. **BOWLING.** (Prereq 1048 and 125 avg for men...1048 and 120 avg for women; moderate intensity)
 1150. **GOLF.** (Prereq 1050 or equiv; moderate intensity)
 1154. **FIGURE SKATING.** (Prereq 1053 or equiv)
 1157. **SKIING.** (Prereq 1057 or equiv)
 1159. **TRACK AND FIELD.** (Prereq 1059 or equiv)
 1238. **TENNIS.** (Prereq 1138)
 1248. **BOWLING.** (Prereq 160 avg; moderate intensity)
 1250. **GOLF.** (Prereq 1150; moderate intensity)
 1254. **FIGURE SKATING.** (Prereq 1154 or equiv)

Team Sports and Activities

1067. **BASKETBALL**
 1068. **CURLING**
 1069. **FIELD HOCKEY**
 1070. **HOCKEY, ICE.** (Prereq 1053 or equiv)
 1071. **LACROSSE**
 1072. **SOCCER**
 1073. **SOFTBALL**
 1074. **VOLLEYBALL**
 1080. **OFFICIATING FOOTBALL-BASKETBALL**
 1081. **OFFICIATING BASKETBALL-VOLLEYBALL.** (Prereq 1067, 1074)
 1082. **OFFICIATING HOCKEY-BASKETBALL-VOLLEYBALL**
 1083. **OFFICIATING SWIMMING-WRESTLING-SOFTBALL-TRACK**
 1167. **BASKETBALL.** (Prereq 1067 or equiv)
 1172. **SOCCER.** (Prereq 1072 or equiv)
 1173. **SOFTBALL.** (Prereq 1073 or equiv)
 1174. **VOLLEYBALL.** (Prereq 1074 or equiv)
 1274. **VOLLEYBALL.** (Prereq 1174 or equiv)

Independent Study

1497. **DIRECTED STUDIES.** (1-6 cr; prereq 3 physical education cr and Δ)

Physics (Phys)

Institute of Technology

Staff—Head, Walter Weyhmann, 325 Physics; *Associate Head for Graduate Studies,* Carl Poppe, 320 Physics; *Associate Head for Undergraduate Studies,* Laurence J. Cahill, 148 Physics; *Administrator,* David Holets, 331 Physics

Regents' Professors: Ney, Nier

Professors: Bayman, Blair, Cahill, Courant, G. Freier, P. Freier, Gasiorowicz, Geffen, Giese, Goldman, Greenlees, Hamermesh, Hintz, Hobbie, Johnson, Kaufmanis, Kellogg, Mantis, Pepin, Rosner, Ruddick, Stein, Stuewer, Suura, Tang, Verbrugge, Waddington, Werntz, Weyhmann, Winckler, Zimmermann

Course Descriptions—Major Sequences

Associate Professors: Broadhurst, Brown, Coleman, Davidson, Dehnhard, Halley, Jones, Lilley, Marquit, Poppe, Roll, Shapiro

Assistant Professors: Black, Campbell, Ellis, Gallagher, Humphreys, Marshak, Maurerberger, Peterson, Warner

Instructor: DeGeer

Physics, an exact science based on precise measurement, is concerned with the properties of matter and the laws that describe its behavior. Its objective is to understand how to formulate mathematical relationships between measured quantities.

A Bachelor's degree in physics can be obtained in either CLA or IT (for the IT program, see the *Institute of Technology Bulletin*). Each program can serve as preparation for graduate school, work in industry, secondary school teaching, or professional study in law, business, or medicine.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Math 1211-1221-1231 or 1311-1321-1331 or 1611-1621 (more calculus is recommended to gain firm background in calculus); Phys 1271-1281-1291, 1275-1285-1295

Major Requirements—3011, 3012, 3511-3512-3513, 5011-5012-5013 or 5021-5023-5024 or 5101-5102, 5120

Additional cr in 5xxx physics or astronomy courses to total 40

Majors are urged to take three additional 5xxx physics, mathematics, or computer science courses. Students planning graduate work in physics are advised to take 5022 and 5101-5102.

General Education—A detailed comparison of beginning physics courses is available in 148 Physics. Courses not requiring a calculus background are 1014-1024 with lab 1015-1025, 1031-1032, 1061, 1071, 3801, 5091; NSci 1004. Premed courses are 1104-1105-1106 or 1271-1281-1291 with 1275-1285-1295. Courses requiring calculus are 1271-1281-1291 with 1275-1285-1295; 1121-1122 (for architects).

Prerequisites for any physics course may be waived with permission of the department or instructor. Students who have earned credit in 1014-1024, 1031-1032, 1061, 1104-1105-1106, 1121-1122, or 1271-1281-1291 will not normally receive credit for corresponding courses in other physics sequences. Credit for nonlaboratory physics courses may be earned through special examination (see page 24).

Students preparing for majors in the College of Education in natural science with a physics core or in physical science with a physics major concentration are required to include 1271-1281-1291 and 1275-1285-1295 or other work prerequisite to 3011, followed by 3011 and other prescribed 3xxx-5xxx courses. Detailed requirements for these majors are described in the *College of Education Bulletin*.

1014-1024. INTRODUCTORY PHYSICS: CONCEPTS IN PHYSICS. (4 cr per qtr; cannot be used as prereq for physics or biological science majors; prereq high school algebra and plane geometry; may be taken with or without the accompanying lab 1015-1025; 3 lect and 1 problem hrs per wk)

Principles of physics. Mechanics, electricity and magnetism, waves, and 20th-century physics (relativity and quantum theory). Primarily for students interested in the ideas of 20th-century physics. CrB

1015-1025. INTRODUCTORY PHYSICS LABORATORY. (1 cr per qtr; S-N only; prereq 1014 or ¶1014 for 1015...1024 or ¶1024 for 1025; 2 lab hrs per wk)

Laboratory in conjunction with 1014-1024. CrB

1031-1032. INTRODUCTORY PHYSICS: MEASUREMENT AND APPLICATIONS. (5 cr per qtr; prereq high school algebra and plane geometry; 4 class hrs and one 2-hr lab or problem session per wk)

Lectures, problem sessions, laboratory. Applications of physics: mechanics, random processes, gases and fluids, electric circuits, waves, light, optical instruments, atoms and spectra, nuclei, radioactivity. Primarily for students interested in technical areas. GrB

- 1061. PHYSICS OF HUMAN MOTION.** (4 cr; prereq 1 yr high school algebra; 3 lect-discussion hrs per wk and one 2-hr gym lab every 2 wks)
Classical mechanics applied to motion of human bodies in work, athletics, dance. Physics of muscles. Eight labs, five in gym. GrB
- 1071. INTRODUCTORY METEOROLOGY.** (4 cr; prereq high school algebra and trigonometry; 5 lect hrs per wk)
Physics of atmospheric processes. Clouds, fronts, and cyclones, weather forecasting. Man's influence on the atmosphere.
- 1075. INTRODUCTORY METEOROLOGY LABORATORY.** (1 cr; S-N only; prereq 1071 or ¶1071; 2 lab hrs per wk)
Field experiments in conjunction with 1071.
- 1104-1105-1106. GENERAL PHYSICS.** (5 cr per qtr; primarily for premed students; prereq Math 1142, and high school trigonometry or Math 1008 for 1104; 4 lect, 1 quiz, and 2 lab hrs per wk)
1104: Mechanics. *1105:* Heat and electricity. *1106:* Sound and light. Laboratory GrB
- 1121-1122. PHYSICS FOR ARCHITECTS.** (5 cr per qtr; prereq Math 1211 or ¶Math 1211; 4 lect hrs and one 2-hr lab per wk)
Principles useful to prearchitecture students. Mechanics, heat, electric circuits, light, sound, properties of materials. GrB
- 1271-1281-1291. GENERAL PHYSICS.** (4 cr per qtr; prereq completion or concurrent regis in Math 1221, 1321, 1621 or equiv for 1271...completion or concurrent regis in Math 1231, 1331, 1621 or equiv for 1281; may be taken with or without lab 1275-1285-1295; 3 lect, 1 problem, and 1 quiz hrs per wk)
Calculus-level general physics course. *1271:* Mechanics. *1281:* Heat, electricity. *1291:* Magnetism, optics. GrB
- 1275-1285-1295. GENERAL PHYSICS LABORATORY.** (1 cr per qtr; S-N only; prereq 1271-1281-1291 or ¶1271-1281-1291; 2 lab hrs per wk)
Laboratory exercises in general physics. GrB
- 3011. OSCILLATIONS.** (4 cr; prereq 1291, Math 3211 or equiv; 3 lect and 1 problem session per wk)
Physical and mathematical study of harmonic oscillator. Transient behavior; resonance; impedance; mechanical and electrical examples; coupled systems; traveling and standing waves in one dimension; Fourier series.
- 3012. WAVES AND OPTICS.** (4 cr; prereq 3011; 3 lect and 1 problem session per wk)
Waves in two and three dimensions, geometrical optics, physical optics; standing waves; interference; diffraction, polarization; radiation. Examples emphasizing electromagnetic radiation.
- 3015. LABORATORY IN OSCILLATIONS AND WAVES.** (1 cr; prereq 3011, 3012 or ¶3012; 3 lab hrs per wk)
Laboratory exercises in oscillations and waves.
- 3501. MODERN PHYSICS.** (4 cr, §3511-3512-3513; prereq 1291 or 1106; 3 lect and 1 problem session per wk)
Descriptive course. Quantum mechanics, hydrogen atom, multielectron atoms, molecular structure, quantum statistics, thermal radiation, solid state physics, nuclear physics.
- 3505. PHYSICS LABORATORY.** (1 cr; prereq 3501 or ¶3501; 2 lab hrs per wk)
Laboratory experiments in modern physics.
- 3511-3512-3513. MODERN PHYSICS.** (4 cr per qtr; prereq 1291 or 1106, Math 1231 for 3511...Math 3221 or 3066 or equiv for 3512; 3 lect and 1 problem session per wk)
Introductory course in special relativity, quantum mechanics, atomic, molecular, solid state, and nuclear physics. Emphasis on experimental phenomena.
- 3515. PHYSICS LABORATORY.** (1 cr; prereq 3513 or ¶3513; 3 lab hrs per wk)
Laboratory experiments in atomic, solid state, and nuclear physics.
- 3801. INTRODUCTION TO THE PHYSICS OF PHOTOGRAPHY.** (5 cr; prereq high school algebra, some photographic experience; 3 lect, 1 discussion, and 2 lab hrs per wk)
Principles of optics, electricity applied to photographic processes. Image formation; intensity; color of illumination; exposure of photographic materials. Technical literature applied to pictorial photography or tone reproduction; line reproduction and duplication. GrB
- 3970. DIRECTED STUDIES.** (1-5 cr; prereq *, Δ)
Guided individual reading or study.

Course Descriptions—Major Sequences

- 5011-5012-5013. MECHANICS, ELECTRICITY, AND MAGNETISM.** (4 cr per qtr, §5021-5022, §5023-5024; prereq 1291, Math 3211, 3221, or equiv; 4 lect hrs per wk)
Theoretical mechanics and electricity and magnetism. GrB
- 5021-5022. INTRODUCTION TO ANALYTIC MECHANICS.** (4 cr per qtr, §5011-5012-5013; prereq 3011, Math 3231 or equiv; 3 lect and 1 problem hrs per wk)
Analytic course in Newtonian mechanics. Vectors and vector operators; angular momentum; central force problem; system of particles; tensors; rigid bodies; moving coordinate systems; continuous media; Lagrange's equations. Mathematics beyond prerequisites developed as required.
- 5023-5024. INTRODUCTION TO ELECTRIC AND MAGNETIC FIELDS.** (4 cr per qtr, §5011-5012-5013; prereq 3011, Math 3231 or equiv; 3 lect and 1 problem hrs per wk)
Classical theory of electric and magnetic fields making free use of vector algebra and vector calculus. Maxwell's equations for free space and material media. Wave solutions.
- 5025. SPECIAL TOPICS IN ELECTRIC AND MAGNETIC FIELDS.** (4 cr; prereq 5013 or 5024; 3 lect and 1 problem hrs per wk)
Topics selected by instructor.
- 5031-5032-5033. TOPICS IN MATHEMATICAL PHYSICS.** (4 cr per qtr; prereq two 5xxx mathematics courses; 3 lect and 2 problem sessions per wk)
Mathematical techniques for physics; application of mathematical methods to physical problems. GrB
- 5051-5052-5053. CLASSICAL PHYSICS.** (4 cr per qtr; prereq 5013 or both 5022 and 5024, advanced calculus, or §; 3 lect and 1 problem session per wk)
Classical mechanics, special relativity, and classical electrodynamics. Applications of advanced mathematical techniques.
- 5090. PHYSICS OF MUSICAL INSTRUMENTS.** (3 cr [no cr for physics grad students], §MuEd 5750; prereq §)
Seminar: physical characteristics, processes in playing musical instruments. Nonmathematical; designed to improve performance and teaching skills. Electronic methods to sense and display cues that assist performance and teaching.
- 5091. PHYSICAL ACOUSTICS OF MUSIC.** (5 cr [no cr for physics grad students]; prereq 1 yr high school algebra and jr, sr, or grad standing in music or music education or equiv background in music theory and practice, as certified by instructor; 3 lect, 1 discussion, 3 lab hrs per wk)
Principles of physics and acoustics related to musical sounds, musical instruments, and the electronic production and reproduction of musical sounds. Laboratory. GrB
- 5101-5102. INTRODUCTION TO QUANTUM MECHANICS.** (4 cr per qtr; prereq 3512; 3 lect and 1 problem hrs per wk)
Mathematical techniques of quantum mechanics. Wave packets; Schrödinger equation, angular momentum; radial equation; spin, perturbation theory; collision theory.
- 5120. EXPERIMENTAL PHYSICS.** (4 cr; prereq 3513, Δ ; 6 lab hrs per wk)
Techniques and methods in research laboratories. Experiments in high vacuum, mass spectroscopy, solid state, atomic, and nuclear physics.
- 5151-5152-5153. QUANTUM MECHANICS.** (4 cr per qtr; prereq 5102 or equiv, advanced calculus or §; 3 lect and 1 problem session per wk)
Development from first principles. Schrödinger equation, angular momentum, scattering, matrix representations, spin, approximation methods, interaction with electromagnetic field, identical particles, applications to atomic systems.
- 5162. INTRODUCTION TO PLASMA PHYSICS.** (4 cr; prereq 5011-5012-5013 or 5022 and 5024 or §)
Magnetohydrodynamics and properties of collisionless plasmas, applications to magnetic field of earth and sun to plasma confinement. Transport phenomena and effects of collisions.
- 5201-5202. THERMODYNAMICS, STATISTICAL MECHANICS.** (4 cr per qtr; prereq 3501 or 3511, Math 3211 or 3411 or equiv; 3 lect and 1 problem hrs per wk)
Basic laws of thermodynamics. Temperature, energy, and entropy; application to simple systems. Transport phenomena; principles of statistical mechanics.
- 5203. INTRODUCTION TO SOLID STATE PHYSICS.** (4 cr; prereq 5202 or §; 3 lect and 1 problem session per wk)
Structure; thermal, magnetic, and dielectric and electronic properties of crystalline solids.
- 5231-5232-5233. INTRODUCTION TO SOLID STATE PHYSICS.** (4 cr per qtr; for grad and advanced undergrad students in physics, science, and engineering; 4 lect hrs per wk)
5231: Crystal structure and binding; diffraction; phonons; thermal and dielectric properties

of insulators. 5232: Free-electron model; band structure; semiconductors; diamagnetism; paramagnetism; ferromagnetism and antiferromagnetism. 5233: Optical phenomena, lasers; superconductivity; surface properties; ferroelectricity.

- 5301. INTRODUCTION TO NUCLEAR PHYSICS.** (4 cr; prereq 5102 or equiv; 3 lect and 1 problem session per wk)
 Static properties and dynamic processes of atomic nuclei. Survey for nonspecialists; first course for those intending to specialize in nuclear physics.
- 5351. EXPERIMENTAL PARTICLE PHYSICS.** (4 cr; prereq 3513; 3 lect per wk and field trips)
 Interactions of particles and photons with matter and radiation. Detectors for particles and photons used in elementary particle, nuclear, and cosmic ray physics.
- 5371. INTRODUCTION TO ELEMENTARY PARTICLE PHYSICS.** (4 cr; prereq 5102 or §)
 Relativistic kinematics; mass, spin, isospin, and strangeness of elementary particles; SU3 classification; particle reactions and decays; experimental methods of detection and analysis.
- 5401. INTRODUCTION TO CONTEMPORARY PROBLEMS IN COSMIC RAY AND SPACE PHYSICS.** (4 cr; primarily for students specializing in other branches of physics; prereq §; offered alt yrs)
 Cosmic rays, characteristics, motion in the interplanetary and interstellar medium. X-rays and radio astronomy.
- 5441. INTRODUCTORY DYNAMIC METEOROLOGY I.** (5 cr; prereq 1291 and Math 3231 or 5602 or §; 3 lect and 3 lab hrs per wk)
 Fluid dynamics of large-scale weather systems; mathematical introduction to quasi-geostrophic model used in numerical weather prediction. Concurrent laboratory study of weather charts to illustrate application of theory.
- 5442. INTRODUCTORY DYNAMIC METEOROLOGY II.** (4 cr; prereq 5441 or §)
 Energetics and general circulation of the atmosphere.
- 5451. CLOUD PHYSICS.** (3 cr; prereq Math 3211 or equiv, 1 yr general physics; 3 lect hrs per wk)
 Composition of the atmosphere, past, present, and future. Thermodynamics of atmosphere with condensable water; properties and growth of drops and ice crystals; particles in the atmosphere. GrB
- 5452. CLOUD SYSTEMS.** (3 cr; prereq Math 3211 or equiv, 1 yr general physics; 3 lect hrs per wk)
 Circulation, energy balance of atmosphere. Radar techniques for analyzing cloud systems. Cloud structure and motion. GrB
- 5453. ELECTRICAL PROPERTIES OF CLOUDS.** (3 cr; prereq Math 3211 or equiv, 1 yr general physics; 3 lect hrs per wk)
 Structure, thermodynamics, and electrical properties of water and ice. Ions in the atmosphere. Generation of charge and its effects on cloud processes. Generation of lightning and properties of lightning discharges. GrB
- 5551. TOPICS IN PHYSICS FOR BIOLOGY AND MEDICINE: MECHANICS AND MOLECULAR PHYSICS.** (5 cr; prereq general physics and calculus)
 Statics (forces in bones and joints). Graphical analysis. Statistical physics (entropy, reversibility, Boltzmann factor and Nernst equation, Brownian movement, free energy). Diffusion, bulk flow, and osmosis.
- 5552. TOPICS IN PHYSICS FOR BIOLOGY AND MEDICINE: ELECTRICITY AND SIGNALS.** (5 cr; prereq general physics and calculus)
 Electricity, circuits (electrocardiogram, networks, nerve conduction); transducers, amplifiers; oscillators; feedback and control; signal analysis (Fourier analysis, correlation functions, power spectra).
- 5553. TOPICS IN PHYSICS FOR BIOLOGY AND MEDICINE: LIGHT, ATOMS, AND NUCLEI.** (5 cr; prereq familiarity with oscillators and signal analysis)
 Optics (lenses and instruments; diffraction and resolution; polarized light). Atoms (dispersion, absorption, line spectra, molecular spectra, X-rays, nuclear radiation). Nuclei (nuclear size, mass, decay).
- 5804. OPTICS LABORATORY.** (4 cr; prereq 3012 or 5805 or §; two 3-hr labs per wk)
 Optics experiments: modern optics, properties of lasers, spatial filters, light modulation, microwaves, Kerr cell, holography, Faraday effect, Zeeman effect, optical pumping.
- 5805. CONTEMPORARY OPTICS.** (4 cr; prereq 3012 or §; 3 lect and 1 problem hrs per wk)
 Theory of lasers and their applications in holography, nonlinear optics, etc. Nonlinear optics. Optics of anisotropic media. Theory of image formation and spatial filtering. Properties of optical detectors.

Course Descriptions—Major Sequences

- 5851. ELECTRONIC MEASUREMENT.** (5 cr; prereq 3011 or §; 3 lect and 3 lab hrs per wk)
Electronic measurement of physical properties. Energy and measurement; noise and bandwidth; processing of repetitive and random signals.
- 5852. ELECTRONIC CONTROL.** (5 cr; prereq 3011 or §; 3 lect and 3 lab hrs per wk)
Digital and analog control: digital logic; pneumatic, electromechanical and semiconductor systems; feedback; servosystems; mixed systems.
- 5853. ELECTRONIC COMPONENTS.** (5 cr; prereq 3011 or §; 3 lect and 3 lab hrs per wk)
Electronic components, electrical behavior, use in circuit design.
- 5923. HISTORY OF 16TH-18TH-CENTURY PHYSICS.** (4 cr; prereq general physics or §)
Internal conceptual developments in physics and astronomy from scientific revolution (Copernicus, Gilbert, Galileo, Bacon, Newton, Huygens, others) to end of 18th century (Euler, Franklin, Coulomb, Laplace, others). Relationships to social, philosophical, and theological influences.
- 5924. HISTORY OF 19TH-CENTURY PHYSICS.** (4 cr; prereq general physics or §)
Internal conceptual developments in physics in 19th century (Young, Fresnel, Oersted, Ampere, Faraday, MacCullagh, Maxwell, Hertz, Lorentz, Lavoisier, Rumford, Dalton, Mayer, Joule, Helmholtz, Carnot, Clausius, Kelvin, Boltzmann, Mach, others). Relationships to social, philosophical, and theological influences.
- 5925. HISTORY OF 20TH-CENTURY PHYSICS.** (4 cr; prereq general physics or §)
Internal conceptual developments in relativity (Michelson, Lorentz, Poincaré, Einstein, others), quantum mechanics (Planck, Einstein, Rutherford, Bohr, Sommerfeld, Ehrenfest, Pauli, Millikan, Compton, Heisenberg, de Broglie, Schrödinger, Born, others), and nuclear physics (Chadwick, Gamow, Fermi, others). Relationships to social, philosophical, and theological influences.
- 5950. SENIOR SEMINAR.** (Cr ar; primarily for sr physics majors, Δ)
- 5990. DIRECTED RESEARCH: ELEMENTARY PHYSICAL INVESTIGATION.** (Cr ar; prereq 3rd yr, Δ)
Problems, experimental or theoretical, of special interest to students. Written reports.

Physiology (Phsl)

Staff—Chairman and Director of Graduate Studies, Eugene Grim, 424 Millard Hall;
Director of Undergraduate Studies, Gordon Kepner, 424 Millard Hall

Professors: Bacaner, Bacvert, Fox, Grim, Harvey, Johnson, Lifson, Lorber, Poppele, Terzuolo, Visscher (emeritus)

Associate Professors: Bloedel, Knox, J. S. Lee, Y. C. P. Lee, Levitt, Meyer, Purple, Rescigno, Wangenstein

Assistant Professors: Kepner, Soechting, Stish

Instructors and lecturers: Blackshear, Bloom, Evans (lecturer), Fohlmeister (lecturer), Juncker (lecturer), Kronenberg (lecturer), Love (lecturer), Martinson (lecturer), Vargas (lecturer)

Physiology aims to understand the functions of the human body by pursuing systematic studies of cells, tissues, and organisms. The emphasis is on discovering the mechanisms underlying normal and pathological functions in terms of the physical and chemical laws that govern them.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—One year each of college chemistry, physics, and mathematics (through integral calculus)

Major Requirements—3055, 3056; 20 3xxx or 5xxx cr in approved courses from related fields such as mathematics, physics, and chemistry

General Education—1001, for nonscience students, is acceptable for Group B.

- 1001f. HUMAN PHYSIOLOGY.** (4 cr; prereq high school biology, high school chemistry or \ddagger ; 3 lect, 2 dem/conf hrs per wk) Kepner
Human organ systems, normal and pathological functions, feedback regulation and control. Applications to everyday aspects of body function and health. GrB
- 1002w. HUMAN PHYSIOLOGY.** (4 cr; introductory survey for allied health sciences; prereq 1 qtr biology, 1 qtr chemistry, human anatomy, or \ddagger ; 3 lect, 2 dem hrs per wk) Blackshear GrB
- 1003s. HUMAN PHYSIOLOGY.** (4 cr; primarily for dental hygiene students; prereq 1 qtr biochemistry, 1 qtr anatomy; 3 lect, 2 dem hrs per wk) Blackshear GrB
- 3051w. HUMAN PHYSIOLOGY.** (5 cr; primarily for nursing and physical therapy students; prereq 1 yr chemistry, biology; 4 lect, 2 dem hrs per wk) Love
- 3052f, 3053w. PRINCIPLES OF PHYSIOLOGY.** (3 cr per qtr; prereq 1 yr each college chemistry, physics, mathematics through integral calculus) Johnson
- 3055f, 3056w. PRINCIPLES OF PHYSIOLOGY.** (5 cr per qtr; prereq 1 yr each college chemistry, physics, mathematics through integral calculus) Johnson
- 3061f, 3062s. TOPICS IN MATHEMATICAL BIOLOGY.** (4 cr per qtr; prereq Math 1231; 2 lect, 1 conf hrs per wk) Rescigno
3061: Laws of population growth; dynamics of isolated species; interaction of several species. Quantitative aspects of competition and predation. 3062: Theory of compartments. Models for absorption, distribution, and elimination of substances by living organisms. Steady-state, turnover, open and closed systems.
- 3070w. HUMAN PHYSIOLOGY.** (6 cr; primarily for pharmacy students; prereq physical chemistry, human or mammalian anatomy; 5 lect, 1 conf, 3 lab hrs per wk) Staff
- 3091. HONORS COURSE: READINGS IN PHYSIOLOGY.** (Cr and hrs ar [may be repeated]; open to honors candidates in physiology only) Staff
Selected topics; written or oral reviews prepared and discussed on tutorial basis.
- 3092. HONORS COURSE: PROBLEMS IN PHYSIOLOGY.** (Cr and hrs ar [may be repeated]; open to honors candidates in physiology only) Staff
Selected lab problems; written reports.
- 3970. DIRECTED STUDIES.** (Cr ar; prereq \ddagger , Δ) Staff
Guided individual reading and study on topics not covered in other courses.
- 5094f-5095w. HUMAN PHYSIOLOGY.** (3 cr per qtr; primarily for grad nursing students; prereq biochemistry and human or mammalian anatomy; 3 hrs lect) Kepner, Poppele
- 5101w. HUMAN PHYSIOLOGY.** (8 cr; primarily for dentistry students; prereq courses in biochemistry and human or mammalian anatomy; 5 lect, 2 conf, 3 lab hrs per wk) Staff
- 5103f. GENERAL PHYSIOLOGY.** (3 cr; prereq physical chemistry, 5111 or \ddagger ; offered even yrs only) Grim, Johnson, Kepner, Levitt, Lifson
Mechanisms of membrane transport and energy transformation in cells, tissues, and organisms.
- 5104w. NEUROPHYSIOLOGY.** (4 cr; prereq 5111 or equiv, neuroanatomy and \ddagger ; offered odd yrs only) Knox, Poppele, Purple, Terzuolo
- 5105s. CARDIOVASCULAR PHYSIOLOGY.** (4 cr; prereq 5111 or equiv or \ddagger ; offered odd yrs only) Bacaner, Cavert, Fox, Lorber
- 5106f. RESPIRATORY PHYSIOLOGY.** (4 cr; prereq 5111 or equiv or \ddagger ; offered odd yrs only) Kronenberg, Wangenstein
- 5107w. ALIMENTARY PHYSIOLOGY.** (3 cr; prereq 5111 or equiv or \ddagger ; offered even yrs only) Grim, Lifson
- 5108s. NEPHROLOGY.** (3 cr; prereq 5111 or equiv or \ddagger ; offered even yrs only) Harvey
- 5109f. SYSTEMS ANALYSIS FOR BIOLOGISTS.** (3 cr; prereq calculus through introduction to differential equations, physical chemistry, or \ddagger) Rescigno
- 5110s-5111su^f. HUMAN PHYSIOLOGY.** (6/5 cr; primarily for Phase A3 and A4 med students; prereq anatomy, biochemistry, 5110 for 5111; 4 lect, 6 lab hrs per wk; course begins approximately March 1 and ends approximately July 30) Staff
- 5113f,w,s. PROBLEMS IN PHYSIOLOGY.** (Cr and hrs ar; prereq 5111 or \ddagger) Staff
Topics assigned for readings or laboratory study; conferences.
- 5116s. BIOPHYSICAL APPROACHES TO PHYSIOLOGY.** (4 cr; prereq 3055 or \ddagger ; 2 lect, 2 conf hrs per wk) Kepner
Membrane permeability and transport. Detailed study of fundamental and classic research papers that provide the physical-chemical foundations for these concepts.

Course Descriptions—Major Sequences

POLISH

See Slavic and East European Languages.

Political Science (Pol)

Staff—Chairman, Samuel Krislov, 1414 Social Sciences Building; **Director of Undergraduate Studies**, Robert Eyestone, 1408 Social Sciences Building

Regents' Professor: Turner

Professors: Backstrom, Chase, Flanigan, Fogelman, Holt, Krislov, McLaughlin, Scott, Sibley, Sorauf

Associate Professors: Benjamin, Blue, Eyestone, Gieske, Hopmann, Kvavik, Shaw, Shively, Wynia

Assistant Professors: Ball, Duvall, Gray, Job, Kernell, Morris, Nimtz, Schoettle, Sullivan, Walcott

Instructor: Ross

Political science is the study of government, politics, and political ideas. Introductory courses are concerned with general information about the American political system, the political systems of other areas in the world, the international political system, and the principal terms and concepts of political science. Courses at 3xxx and 5xxx levels, which may be entered as soon as prerequisites are satisfied, add deeper knowledge in selected fields.

B.A. MAJOR SEQUENCE

Major Requirements—1001, 1051

At least 35 cr in 3xxx or 5xxx political science courses (no more than 16 cr in any one field nor more than 28 cr in any two fields), taken on A-N basis with grades of C or better. The recognized fields are identified by subheads among the course descriptions.

Interested students should refer to the section on International Relations for the major in that area.

Staff members in the undergraduate office, 1408 Social Sciences Building, can help in the planning of course work appropriate to particular educational and career objectives. Students considering second majors or informal minors in political science are urged to talk with the director of undergraduate studies.

Undergraduate Seminars, Fieldwork, Internships, and Satellite Courses—Staff members in the undergraduate studies office can provide detailed information on special opportunities in the department:

Three-credit seminars in the 3x99 series, available throughout the year, include discussion and individual research on specific topics or areas. They offer close involvement with faculty and opportunities for creative research. Where possible, topics are listed in the quarterly *Class Schedule*. Enrollment in each seminar is limited to 15.

Fieldwork and internships may be elected to a maximum of 8 credits.

In 2-credit "satellite" courses (1010), offered in conjunction with 1xxx courses, students examine specialized topics related to the concerns of the "parent" courses. Topics and instructors are announced before and during the first week of regular course meetings; only students already enrolled in the parent courses will be admitted. Enrollment in each course is limited to 15.

For the Nonmajor—All political science courses with the exception of the honors courses are open to nonmajors on an A-N or S-N basis. All 1xxx-level political science courses are suited to the needs of students who wish some introduction to political science. Most 3xxx- and 5xxx-level courses also are appropriately considered "general," and many are elected by nonmajors.

- 1001. AMERICAN GOVERNMENT AND POLITICS.** (5 cr) Staff
Principles, organization, processes, functions of government, and the interplay of political forces in the United States. Attention throughout to current issues. GrC
- 1010. SATELLITE SEMINAR.** (2 cr per qtr; prereq #)
Selected topics in political science, to be determined by instructor. (Students must be registered in an appropriate 1xxx political science course. Such registration entitles students to apply for registration in a 1010 seminar attached to that course. Available seminars will be announced prior to and during the first week of the course.)
- 1025. WORLD POLITICS.** (4 cr) Hopmann, Job, staff
Contemporary international relations; forms of state interaction; problems of conflict and cooperation. GrC
- 1026. AMERICAN FOREIGN POLICY.** (4 cr) Hopmann, Schoettle, Wynia, staff
Institutions and processes that determine American foreign policy; major developments in U.S. foreign policy since World War II; contemporary issues of U.S. policy. GrC
- 1027. URBAN POLITICS.** (4 cr) Nimitz, Scott, staff
Urban politics and issues facing American cities. Political conflicts over economic and social problems. GrC
- 1031. SELECTED PROBLEMS IN AMERICAN PUBLIC POLICY.** (4 cr) Eyestone, Gray, staff
Analysis of major public policy issues in such areas as social welfare, education, and economics; forces molding policy choices and the impact of such choices. GrC
- 1041. CONTEMPORARY POLITICAL IDEOLOGIES.** (4 cr) Ball, Fogelman, Shaw, staff
Major modern ideologies such as liberalism, democracy, conservatism, socialism, communism, fascism, nationalism, imperialism, racism. Adequacy of alternative ideologies for analysis and solution of political and social problems. GrC
- 1051. INTRODUCTION TO POLITICAL ANALYSIS.** (5 cr) Benjamin, Fogelman, Holt, staff
Formation of political communities, political participation, policy making, compliance, legitimacy, political development, types of political systems. Empirical and normative problems. Comparisons among major countries. GrC

Special Courses

Most 3xxx and 5xxx courses are listed in their more or less specialized fields. "Special" courses, not assigned to these fields, are listed here.

- 3070. DIRECTED FIELD STUDIES.** (1-4 cr per qtr; prereq #, Δ)
Faculty-supervised research related to work in political or governmental organizations. GrC
- 3080. INTERNSHIP.** (4 cr per qtr [8 cr max]; S-N only; prereq #) Backstrom, Eyestone, staff
Internship with government or community organizations, arranged through and supervised by the department. GrC
- 3085. INTRODUCTION TO POLITICAL RESEARCH.** (4 cr; prereq 1051 or #) Gray, Morris, Shively, staff
The design of political research; theory construction, concept formation, problems of measurement, statistical tests for and measures of relationships; problems of inference and interpretation of findings.
- 3108. HONORS COURSE: THE POLITICAL DISCIPLINE.** (4 cr; open only to political science honors program majors)
Political science as an academic discipline: subfields, major intellectual problems, trends; approaches to problems of political phenomena. GrC
- 3109. HONORS COURSE: SEMINAR.** (3 cr; open only to political science honors program majors; prereq 3108)
Design of a research project in political science; theory construction, measurement, research methods, and data collection.
- 3110. HONORS WORK IN SELECTED FIELDS.** (3 or 6 cr per qtr [6 cr max], open only to political science honors program majors; prereq 3109)
Individual research and writing of departmental honors thesis.

Course Descriptions—Major Sequences

- 3970. DIRECTED STUDIES.** (1-8 cr per qtr; prereq § and Δ)
Guided individual reading or study.

Political Theory

- 3661. PROBLEMS OF DEMOCRACY.** (4 cr; prereq 1051 or 9 cr in social science or §) Ball, Shaw
Postulates and implications; moral foundations; democratic theory and the economic order; liberty and authority; equality; representation; participation; majority rule; critics of democracy; social science and democratic theory. GrC
- 3668. RECENT EMPIRICAL THEORY.** (4 cr; prereq 1051 or §; offered alt yrs) Fogelman, Morris
Empirical theories such as those of power, systems, games, structural functionalism, conflict. Usefulness of these formulations in political analysis. GrC
- 3699. ADVANCED SEMINAR.** (3 cr; prereq jr or sr, and §) Staff
Advanced analysis with supervised research and writing in areas of political theory. GrC
- 5659. AMERICAN POLITICAL THOUGHT.** (4 cr; prereq 1051 or 9 cr in social science or §) Ball, Shaw, Sibley
From colonial times to present: Puritanism; Revolution; Constitution; utopianism; sectionalism and pluralism; anarchist, socialist, populist, and syndicalist thought; social Darwinism; conservatism; political thought in law and literature. GrC
- 5663. POLITICAL THEORY AND UTOPIA.** (4 cr; prereq 1051 or 9 cr in social science or §) Sibley
Great utopias from viewpoint of the political theorist; idea of planning an ideal state; achievement of utopia; stability and change in great utopias; problems of authority and law; anarchist, socialist, and conservative utopias. GrC
- 5664. DEVELOPMENT OF POLITICAL THOUGHT: ANCIENT.** (4 cr; prereq 1051 or 9 cr in social science or §) Ball, Sibley
Biblical thought, ancient Chinese thought; classical Greek thought; Plato and Aristotle, primitive natural law; Cynics and Stoics; theory in Roman Republic and Empire; 1st-century Christianity. GrC
- 5665. DEVELOPMENT OF POLITICAL THOUGHT: MIDDLE AGES.** (4 cr; prereq 1051 or 9 cr in social science or §) Ball, Sibley
Early Christianity and the Church fathers; moral theory and political theory; empire and church in ideology; Roman and canon law; theory of persecution; St. Thomas; 14th- and 15th-century conceptions. GrC
- 5666. DEVELOPMENT OF POLITICAL THOUGHT: EARLY MODERN.** (4 cr; prereq 1051 or 9 cr in social science or §) Ball, Sibley
Renaissance; Machiavelli; More; Reformation and Counter-Reformation; English Civil War; Hobbes and Locke; rise of liberalism; Montesquieu and Rousseau; French Revolution and reaction. GrC
- 5669. RECENT POLITICAL THOUGHT.** (4 cr; prereq 1051 or 9 cr in social science or §) Ball, Shaw, Fogelman
Main currents from Marx to present; socialist, anarchist, liberal, and conservative thought; problems such as alienation and political obligation. GrC

Comparative Government and Politics

Courses 3773, 5769, 5771, 5772, 5774, described under Politics and Behavior below, may be used to support study in this field.

- 3499. ADVANCED SEMINAR.** (3 cr; prereq jr or sr, and §) Staff
Advanced analysis with supervised research and writing in areas of comparative government and politics. GrC
- 5441. WESTERN EUROPEAN GOVERNMENT AND POLITICS.** (5 cr; prereq 1051 or 12 cr in social science or §) Holt, Shively, staff
Political institutions in their social settings; power and responsibility; governmental stability; political decision making, government, and economic order. GrC
- 5443. GOVERNMENT AND POLITICS OF THE SOVIET UNION.** (4 cr; prereq 1051 or 12 cr in social science or §) Turner
The rise of Bolshevism; sources and nature of Bolshevik ideology; history and institutional character of the Soviet regime; sources of power; role of the party and functional groups; patterns of change. GrC

- 5444. GOVERNMENT AND POLITICS OF SCANDINAVIAN COUNTRIES.** (4 cr; prereq 12 cr in social science) Kvakik
Scandinavian political institutions and behavior; Scandinavian party politics, interest groups, and legislative behavior. Voting patterns and voter alignments. GrC
- 5446. GOVERNMENT AND POLITICS OF SOUTH ASIA.** (5 cr; prereq 12 cr of 3xxx or 5xxx courses in social science) Blue
Governmental institutions in historical and social settings. Dynamic processes of modernization within a democratic institutional framework. Public policies involving social and economic development: agrarian reform, population control, industrial growth. GrC
- 5448. GOVERNMENT AND POLITICS OF AFRICAN COUNTRIES.** (4 cr; prereq 1051 or 12 cr in social science or §) Nimtz
Political institutions and behavior in sub-Saharan African countries in their social and cultural settings; class and tribal structure; parties and elections; source and nature of ideologies; economic and social policies. GrC
- 5453. JAPANESE GOVERNMENT AND POLITICS.** (4 cr; prereq 1051 or 12 cr in social science or §) Benjamin, Turner
Constitutional and political development in Japan; political ideas, government, political parties, problems. GrC
- 5454. CHINESE GOVERNMENT AND POLITICS.** (4 cr; prereq 1051 or 12 cr in social science or §) Benjamin, Turner
Traditional Chinese society; fragmentation of China, rise of the Communist power; sources and nature of Communist Chinese ideology; institutional character of the Communist party system; sources of power; role of the party and functional groups; patterns of change. GrC
- 5455. LATIN AMERICAN GOVERNMENT AND POLITICS.** (5 cr; prereq 1051 or §) Wynia
Latin American political heritage, political processes, contemporary public policy issues; problems of social, economic, and political change in selected countries. GrC
- 5457. TOPICS IN MIDDLE EASTERN POLITICS.** (4 cr; prereq 1051 or §) Krislov, Nimitz
Governmental structures and their political matrix. Cultural, religious, and regional influences. Israeli emphasis treats problems of a created society with planned institutions, role of nominally ideological parties, conflict over theocratic base for a modern secular state. Arab states emphasis treats effects of modernization, religious conflict, Zionism, Arab unity. GrC

International Relations

- 3825. INTERNATIONAL POLITICS.** (4 cr; prereq 1025 or 1026 or 8 cr in political science or §)
Analysis of selected issues in contemporary international relations such as limitation of arms races, settlement of conflicts, regulation of the oceans, creation of a new international economic order. GrC
- 3826. AMERICAN FOREIGN POLICY.** (4 cr; prereq 1025 or 1026 or 8 cr in political science)
Selected topics concerning contemporary American foreign policy and behavior of major governmental and nongovernmental actors; the prediction, planning, and evaluation of foreign policy outcomes. GrC
- 3899. ADVANCED SEMINAR.** (3 cr; prereq jr or sr, and §) Staff
Advanced analysis with supervised research and writing in areas of international relations. Topics vary from quarter to quarter. See department office for current offerings. GrC
- 5323. AMERICAN DEFENSE POLICY.** (4 cr; prereq 1025 or 1026 or 3825 or 3826) Chase, Schoettle
Major policy issues such as American strategic theory and war capabilities; limited war theory and capabilities; arms control and disarmament. Defense policy-making process in the executive office, Congress, Department of Defense, military services, private sector. Implications of American defense policies for foreign and domestic policy. GrC
- 5876. FOREIGN POLICY DECISION MAKING.** (4 cr; prereq 1025 or 1026 or 3825 or 3826) Schoettle
Processes through which foreign policy decisions are made and implemented; foreign policies of several states, especially the United States. GrC
- 5877. COMPARATIVE FOREIGN POLICY.** (4 cr; prereq 1025 or 1026 or 3825 or 3826) Hopmann
Comparative analysis of foreign policies of major states; national and international determinants of foreign policy behavior. GrC
- 5881. INTERNATIONAL LAW I.** (5 cr) McLaughlin
Growth and character of international law system; sources, use of legal materials and evidence; relations to municipal law; subjects (individuals, states, international agencies); principles and problems of jurisdiction. GrC

Course Descriptions—Major Sequences

- 5882. INTERNATIONAL LAW II.** (5 cr) McLaughlin
Diplomatic agents and consuls—functions and jurisdictional immunities; treaties and other international agreements; rights of aliens; law developed by international organizations; pacific settlement of disputes; hostile measures short of war; intervention; war and neutrality. GrC
- 5884. THE INTERNATIONAL SYSTEM.** (4 cr; prereq 1025 or 1026 or 3825 or 3826) Hopmann, Job
Structure of the international system: balance of power, bipolar systems, other international systems; theories of stability, change, conflict, and cooperation as related to contemporary international system. GrC
- 5885. INTERNATIONAL VIOLENCE AND PEACE.** (4 cr, §IntR 5801; prereq 1025 or 1026 or 3825 or 3826...5884 recommended) Hopmann, Job, Schoettle
Normative issues surrounding international violence; causes of violence and mechanisms for creating international peace; alternative structures for limiting future violence and maintaining peace. GrC
- 5886. INTERNATIONAL DIPLOMACY, BARGAINING, AND NEGOTIATION.** (4 cr, §IntR 5811; prereq 1025 or 1026 or 3825 or 3826...5884 recommended) Hopmann, Schoettle, Walcott
Strategies and processes of international diplomacy, bargaining, and negotiation to resolve contemporary international disputes, including international security, arms limitation, and disarmament. GrC
- 5887. INTERNATIONAL SECURITY ORGANIZATIONS.** (4 cr; prereq 1025 or 3825 or §) Staff
The United Nations and its antecedents; decision making in international organizations; global and regional organization for international security, disarmament, and dispute settlement. GrC
- 5888. REGIONAL AND FUNCTIONAL INTERNATIONAL ORGANIZATIONS.** (4 cr, §IntR 5812; prereq 1025 or 3825 or §) Staff
Global and regional organization for economic, social, cultural, and humanitarian cooperation; comparison of functional and political organizations; economic and political integration; empirical and practical approaches to future world order problems. GrC

Politics and Behavior

- 3751F. FIELDWORK IN POLITICS.** (4 cr; prereq 1001) Backstrom, Eyestone, staff
Field study of political organization, leadership, and campaigns in Minnesota. Individual student work assignments with candidates. GrC
- 3765. POLITICAL SOCIALIZATION.** (4 cr; prereq 1001 or §) Sullivan
Theories of political socialization; development of political cognitions and evaluations by children and adolescents; role of family, educational system, mass media, and peer groups; impact of socialization patterns on political systems. GrC
- 3766. POLITICAL PSYCHOLOGY.** (4 cr; prereq 1001 or §) Sullivan
Personality and political behavior; democratic and authoritarian personality; political style and political ideology. GrC
- 3773. POLITICAL DEVELOPMENT.** (4 cr; prereq 1051 or §; offered alt yrs) Benjamin, Holt, Wynia
Political problems of new nations; political consequences of breakdown of traditional society; problems of developing new institutional forms and procedures. GrC
- 3799. ADVANCED SEMINAR.** (3 cr; prereq jr or sr, and §) Staff
Advanced analysis with supervised research and writing in areas of politics and behavior. GrC
- 5304. ORGANIZATIONAL BEHAVIOR.** (4 cr; prereq 1001) Walcott
Operation and significance of complex, formal organizations in the political system; public bureaucracy. Communication and influence processes; decision making and innovation; relation of organization to environment. GrC
- 5737. POLITICAL PARTIES.** (4 cr; prereq 1001 or §) Morris, Sorauf
Role and functions of the party in American government; party composition and organization; process of nomination and policy formulation; regulation of party organization and activities. GrC
- 5738. POLITICAL CAMPAIGNS AND ELECTIONS.** (4 cr; prereq 1001 or §) Backstrom
National, state, and local campaigns and elections; research in local political parties and campaigns. GrC

- 5739. THE POLITICS OF ETHNIC COMMUNITIES.** (4 cr; prereq 6 cr in social science) Nimt
Cross-cultural study of politics of ethnic communities; emphasis on politics of Black communities in the United States. Internal community politics and their local and national political systems. GrC
- 5741. POLITICAL BEHAVIOR OF WOMEN.** (4 cr; prereq 1001 or 1051 or §) Gray
Women as political actors. Mass political behavior, women's political movements, women in political parties and elective office, the status of women in different societies. GrC
- 5767. PUBLIC OPINION AND VOTING BEHAVIOR.** (5 cr; prereq 1001 or §) Flanigan, Shively
Major factors influencing electoral decisions; political attitude formation and change. Data analysis laboratory required. GrC
- 5768. POLITICAL CULTURE: SOCIAL BASIS OF POLITICAL BEHAVIOR.** (5 cr; prereq 1001 or §) Flanigan, Shively, Kernell
Social and environmental influences on political attitudes and political participation; political elites and the politics of mass society. Data analysis laboratory required. GrC
- 5769. POLITICAL ELITES AND LEADERSHIP.** (4 cr; prereq 1051; offered alt yrs) Benjamin, Nimt, Wynia
Comparative political leadership—political recruitment patterns, executive and legislative behavior, political power structures in industrial and nonindustrial states. GrC
- 5771. COMPARATIVE PUBLIC POLICY.** (4 cr; prereq 1051 or §; offered alt yrs) Wynia
Policy making and administrative implementation in high and low income countries; content and impact of economic development and social welfare policies. GrC
- 5772. COMPARATIVE POLITICAL PARTIES AND INTEREST GROUPS.** (4 cr; prereq 1051 or §; offered alt yrs) Kvakiv, Nimt
The role of political parties and interest groups in different countries. GrC
- 5774. COMPARATIVE POLITICAL PARTICIPATION.** (4 cr; prereq 1051 or §; offered alt yrs) Blue, Nimt, Shively
Comparative study of the relationship of mass political behavior to governmental activity. GrC

American Governmental Systems and Processes

- 3306. THE AMERICAN PRESIDENCY.** (4 cr; prereq 1001 or §) Kernell, Schoettle, Shaw, Walcott
The office and individual Presidents; organizational characteristics of the Executive Office and individual qualities of decision making; relationships with Congress, the bureaucracy, parties, interest groups, media, and public opinion. GrC
- 3308. THE UNITED STATES CONGRESS.** (4 cr; prereq 1001 or §) Backstrom, Eyestone, Kernell, Morris, Shaw
Internal organization, committee system, party leadership, norms, recruitment; legislative policy making; relationship with the President and bureaucracy; interest groups, political party, and constituency influences on the congressional process. GrC
- 3310. TOPICS IN AMERICAN POLITICS.** (4 cr per qtr; prereq 1001 or §)
Topics specified in *Class Schedule*. GrC
- 3331. MINNESOTA GOVERNMENT AND POLITICS.** (4 cr; 1001 recommended) Backstrom
The Minnesota political system; demographic and cultural setting, political and governmental processes, contemporary policies. GrC
- 3352w. FIELDWORK IN THE LEGISLATURE.** (4 cr; prereq 1001) Backstrom
Field study of Minnesota Legislature; membership, leadership, influence, staffing, procedure, powers. Students arrange work assignments with legislators. GrC
- 3353s. FIELDWORK IN LOCAL GOVERNMENT.** (4 cr; prereq 1001) Backstrom
Field study of Minnesota municipal, county, and metropolitan government; powers, structure, official administration, programs. Students arrange work assignments with local officials. GrC
- 3399. ADVANCED SEMINAR.** (3 cr; prereq jr or sr, and §) Staff
Advanced analysis with supervised research and writing in areas of American governmental systems and processes. GrC
- 5303. THE AMERICAN DEMOCRACY.** (4 cr; prereq 1001 or 6 cr in social science or §) Flanigan, Kernell, Morris, Shaw, Sullivan
The American political system, its institutions and processes. Political decision making, influence, and elites. Ideals and reality of democracy in the United States. GrC
- 5309. JUDICIAL PROCESS.** (4 cr; prereq 1001 or §) Krislov, Sorauf
Structure of American judiciary; selection of judges; process of litigation; influences on judicial decisions; impact of and compliance with decisions; role of Supreme Court in American political system. GrC

Course Descriptions—Major Sequences

- 5315. STATE GOVERNMENT AND POLITICS.** (4 cr; prereq 1001 or §) Backstrom, Gray
Political institutions, political behavior, and public policies in American states; comparisons between states and between state and national political systems. GrC
- 5319. INTERGOVERNMENTAL RELATIONS IN THE UNITED STATES.** (4 cr, SPA 5319; prereq 1001 or §) Gray, Chase, Eyestone
Relations between and among local, state, and national governments; governmental structures for coordination, evolution of fiscal relations and their political impact in a federal system. GrC
- 5321. AMERICAN ECONOMIC POLICY.** (4 cr; prereq 1001 or §) Eyestone, Morris
Economic policy-making processes; major issues such as fiscal and monetary policy, subsidies, economic regulation, and direct controls; governmental impact on the private economic sector. GrC
- 5322. AMERICAN SOCIAL POLICY.** (4 cr; prereq 1001 or §) Eyestone, Gray
American government actions affecting the distribution of social benefits such as health care, education, and housing; social burdens such as taxation and regulation of social conduct. Relationships between government action and social problems; possibilities for change. GrC
- 5323. AMERICAN DEFENSE POLICY**
For description, see 5323 under International Relations subheading above.
- 5327. LOCAL GOVERNMENT AND POLITICS.** (4 cr; prereq 1001 or §) Backstrom, Scott
Development and role of American local government; forms and structures; relationships with states and the federal government; local politics and patterns of power and influence. GrC
- 5328. METROPOLITAN GOVERNMENT AND POLITICS.** (4 cr; prereq 1001 or §) Nimtz, Scott
Development of the modern American metropolis with emphasis on central cities and suburbs; intergovernmental relationships in the metropolis; state and federal responses to metropolitan problems; politics of reforming metropolitan government. GrC
- 5876. FOREIGN POLICY DECISION MAKING**
For description, see 5876 under International Relations subheading above.

Public Law

- 3561, 3562. INTRODUCTION TO LEGAL SYSTEMS.** (4 cr per qtr; prereq jr or §; offered alt yrs)
Krislov, McLaughlin
Elementary survey, primarily for social science students, of principal legal systems of the Western world. Organization, procedures, methods of growth, relation to political and economic systems, basic juristic conceptions. 3561: Roman law and European derivatives. 3562: Anglo-American law. GrC
- 3599. ADVANCED SEMINAR.** (3 cr; prereq jr or sr, and §) Staff
Advanced analysis with supervised research and writing in areas of public law. GrC
- 5501, 5502. PRINCIPLES OF AMERICAN CONSTITUTION I, II.** (5 cr per qtr; prereq 1001 or equiv) Chase, Krislov
Nature of constitutions, judicial review, organizations and powers of national government; national-state and interstate relations; due process; civil rights and civil liberties. GrC

PORTUGUESE

See Spanish and Portuguese.

Psychological Foundations (PsyF)

College of Education

- 3370. HUMAN RELATIONS AND GROUP DYNAMICS.** (1-4 cr)
Small-group training theory and methods, designed to help the student develop an understanding of his or her own behavior, the behavior of other individuals, and group and organizational behavior.
- 5121. BASIC PRINCIPLES OF MEASUREMENT.** (3 cr; prereq 5110 or 8110 or Psy 3801 or equiv)
Fundamental concepts, principles, and methods in educational and psychological measurement; educationally useful properties of tests; types and uses of derived scores; factors influencing reliability and validity. GrA

Psychology (Psy)

Staff—*Chairman*, Lloyd H. Lofquist, N218 Elliott Hall; *Assistant Chairman*, J. Bruce Overmier, 212 Elliott Hall; *Director of Undergraduate Studies*, David L. LaBerge, 211 Elliott Hall; *Director of Graduate Studies*, John P. Campbell, N494 Elliott Hall; *Director of Honors*, Paul W. Fox, 219 Elliott Hall

Professors: Berscheid, Bouchard, Burkhardt, Butcher, Campbell, Darley, Dawis, Dunnette, Fox, Garnezy, Gottesman, Jenkins, Jones, LaBerge, Lofquist, Mac-Corquodale, Meehl, Overmier, Pick, Roberts, Schletzer, Tellegen, Thompson, Weiss

Associate Professors: Snyder (on leave winter, spring 1977), Viemeister

Assistant Professors: Arabie, Devine, Leon, Peterson

Psychology is concerned with the behavior of organisms in terms of environmental, genetic, physiological, and social determinants and correlates.

Students contemplating majors in psychology must obtain instruction materials in the Undergraduate Advising office, 105 Elliott Hall.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1001, 1004-1005 (to be taken as soon as possible after 1001)

Major Requirements—At least 32 cr (but no more than 52) chosen as follows: two courses from 3011, 3031, 3051, 3061, 5011, 5012-5013, 5014, 5015, 5017, 5018, 5019, 5031, 5054, 5061, 5062, 5071

Two courses from 3101, 3124, 3201, 3604, 5141, 5501, 5701, 5702, 5703; CPsy 5303

3801 (to be taken as soon as possible after 1001)

Four elected 3xxx-5xxx psychology courses

One to four optional 3xxx-5xxx psychology, child psychology, or approved psychological foundations or counseling and student personnel psychology courses (list of approved courses available in 105 Elliott Hall)

3xxx-5xxx psychology or child psychology courses from the lists above must total at least nine. Psychology majors, especially those considering graduate work, are urged to elect mathematics and natural, social, and physical science courses. Prospective graduate students should also take further work in statistics and computer programming. Those not planning psychology graduate work may, with adviser counsel, design programs to prepare for paraprofessional work in interviewing, personnel, mental health, counseling, or research technology. A restricted number of child psychology courses may be elected through the Institute of Child Development (double psychology-child psychology majors are not permitted).

are 1001, 3011, 3031, 3051, 3061, 3101, 3124, 3201, and 3604.

1001f,w,s. GENERAL PSYCHOLOGY. (5 cr; prereq soph or 3rd-qtr fr with B avg)

Introduction to study of human behavior. Prerequisite for all advanced courses in psychology. GrC

1001Hw. HONORS COURSE: GENERAL PSYCHOLOGY. (5 cr; prereq 3) LaBerge GrC

1004f,w-1005w,st. INTRODUCTORY LABORATORY PSYCHOLOGY. (4 cr per qtr; prereq soph, 1001 or 11001) Staff

Experiments with contemporary subject matter such as sensory psychology, psychophysics, perception, motivation, verbal behavior, animal and human learning, problem solving, and psychological measurement. GrC

Course Descriptions—Major Sequences

- 3011f. INTRODUCTION TO PSYCHOLOGY OF LEARNING.** (4 cr; prereq 1001, 1005 or Biol 1107 or §) Peterson
Basic methods. Fundamental concepts and principles governing the learning process. GrC
- 3031s. SENSATION AND PERCEPTION.** (4 cr; prereq 1001, 1004) Burkhardt
Psychological, biological, and physical aspects of sensory experience in humans and animals. Senses of vision and hearing. GrB
- 3051w. INTRODUCTION TO COGNITIVE PSYCHOLOGY.** (4 cr; prereq 1001, 1005 or ¶1005)
Research problems and theoretical concepts in study of cognitive factors in perception, memory, and concept formation. GrC
- 3061s. INTRODUCTION TO PHYSIOLOGICAL PSYCHOLOGY.** (4 cr, §5061; prereq 1001, 1005 or Biol 1011 or §) Roberts
Neural mechanisms of motivation, emotion, sleep-wakefulness cycle, learning, and communication in animals and humans. GrB
- 3101f. INTRODUCTION TO PERSONALITY.** (4 cr, §5101; prereq 1001) Tellegen
Concepts of personality; personality theory; empirical research in the field of personality; personality assessment. GrC
- 3124s. PSYCHOLOGY OF INDIVIDUAL DIFFERENCES.** (4 cr; prereq 3801) Dunnette
Differential method in study of human behavior. Impact and importance of individual differences in modern society; instruments of measurement and behavior prediction in differential psychology; major determinants of individuality. GrC
- 3201w. INTRODUCTION TO SOCIAL PSYCHOLOGY.** (4 cr; prereq 1001) Snyder
Theories and research in social psychology. The effects upon individual attitudes, behavior of other persons, mass communications, group membership. GrC
- 3604f. INTRODUCTION TO ABNORMAL PSYCHOLOGY.** (4 cr, §5604-5605; prereq 1001) Leon
Abnormal psychology. Etiologies of behavioral disorders; available treatments. GrC
- 3801f,w,s. INTRODUCTION TO MEASUREMENT AND STATISTICAL METHODS.** (4 cr; prereq 1001 or equiv) Arable
Quantification in research problems in psychology. Descriptive and inferential statistics, hypothesis testing, nonparametric statistics. Examples from various areas of psychology. GrA
- 3900f,w. HONORS SEMINAR: PSYCHOLOGY.** (1 cr per qtr; S-N only; for jr honors students majoring in psychology) Fox
Contemporary issues in psychological research; initiation of the 3990H senior research project; advanced study and career opportunities in psychology; special learning opportunities available to psychology honors majors. GrC
- 3950. PSYCHOLOGY: RESEARCH AND APPLICATIONS.** (2-16 cr per qtr [16 cr max]; prereq 1001, §) Staff
Seminars and directed experiences in subareas of psychology; current offerings posted in the Psychology office.
- 3960f,w,s. TOPICS IN PSYCHOLOGY.** (1-5 cr per qtr; prereq 1001, §, Δ) Staff
Independent study and small seminars. Topics listed in the Psychology office.
- 3970f,w,s. DIRECTED STUDIES.** (1-8 cr per qtr; prereq §)
Guided individual reading or study.
- 3990f,w,s. PROJECT IN PSYCHOLOGY.** (Cr ar [8 cr max]; prereq sr, §)
Individual library study or empirical investigation.
- 3990Hf,w,s. HONORS COURSE: PROJECT IN PSYCHOLOGY.** (Cr ar [8 cr max]; prereq sr, §)
- 5011f. THEORIES OF LEARNING AND COGNITION.** (4 cr; prereq 3011 except for students in honors sequence and grads) LaBerge
Learning theories and contemporary theories of information processing and cognition. GrC
- 5012w-5013s. PSYCHOLOGY OF LEARNING.** (4 cr per qtr; prereq 1001, 1005, 3011 or Biol 1107 and EBB 3111 or § except for grad students) Overmier
Classical conditioning; instrumental learning. Evaluation of relevant theories. GrC
- 5014w. HUMAN LEARNING A.** (4 cr; prereq 1005, except for students in honors sequence and grad students) Fox
Processes and principles in human learning; verbal and perceptual-motor learning, transfer, and memory; feedback, abilities and performance prediction, facilitation and interference, retention and long-term memory. GrC
- 5015s. ADVANCED LEARNING AND COGNITIVE PROCESSING.** (4 cr; prereq 3011 or 3051 or 5014, except for students in honors sequence and grad students) LaBerge
Processes in human learning; verbal and perceptual learning. Memory, attention, and information processing. GrC

- 5017f. ANALYSIS OF BEHAVIOR I.** (4 cr; prereq 3011, except for students in honors sequence and grad students) MacCorquodale
Systematic formulation of topics based on a Skinnerian analysis. Scientific method, learning, motivation, and emotion. GrC
- 5018w. ANALYSIS OF BEHAVIOR II.** (4 cr; prereq 5017 or §) MacCorquodale
(Continuation of 5017) An individual's verbal behavior in terms of his or her past history and current circumstances. GrC
- 5019s. ANALYSIS OF COMPLEX BEHAVIOR.** (4 cr; prereq 5017 or §) Thompson
Experimental analysis of complex operant behavior repertoires based upon systematic formulation presented in 5017. Development of an approximate system of analysis of large, continuous samples of behavior. Social and other complex sequences of human and other animal behavior. GrC
- 5021s. MATHEMATICAL PSYCHOLOGY.** (4 cr; prereq 5861 or §) Viemeister
Mathematical models of signal detection and recognition, decision processes, information processing, learning. GrC
- 5031s. PERCEPTION.** (4 cr; prereq 3051 or 3031 or §) Pick
Investigation in and data from study of problems of perception; psychophysical methods, form perception, space perception, constancy, spatially coordinated behavior and attention. Emphasis on visual perception. GrC
- 5054s. PSYCHOLOGY OF LANGUAGE.** (4 cr; prereq 3011, except for students in honors sequence and grad students) Jenkins
Theories and experimental evidence in past and present conceptions of psychology of language. GrC
- 5061f. FUNDAMENTALS OF PHYSIOLOGICAL PSYCHOLOGY.** (4 cr, §3061; prereq 1001) Roberts
Physiological and neuroanatomical mechanisms underlying behavior of higher vertebrates. Sensory mechanisms, sleep, wakefulness, and attention. GrB
- 5062s. NEUROPSYCHOLOGY OF MOTIVATION AND LEARNING.** (4 cr; prereq 5061 or §) Roberts
Brain mechanisms of aggression, fear, pain, hunger, thirst, reproductive behavior, learning, and discrimination processes. GrB
- 5071s. ANIMAL PSYCHOLOGY.** (4 cr; prereq 1001, 1005, or equiv in another science) Peterson
Historical, philosophical, and biological foundations; consciousness; motivation; learning; reasoning; judgment; abnormal behavior; social influences. GrB
- 5101w. PERSONALITY.** (4 cr, §3101; prereq 5862 or ¶5862, honors candidate or grad student) Tellegen
Personality theories as alternative orienting viewpoints. Trait-oriented discussion of findings and conceptual and methodological problems of contemporary personality research. GrC
- 5125w-5126sf. DIFFERENTIAL PSYCHOLOGY.** (4 cr per qtr; prereq 5862 or §, honors candidate or grad student) Bouchard, Dawis, Dunnette
Methodology. Quantitative studies of nature of psychological traits and influence of age, sex, heredity, and environment in causation of individual and group differences in ability and temperament. GrC
- 5134f. INTRODUCTION TO BEHAVIORAL GENETICS.** (4 cr; prereq 3124 or 5126) Gottesman
Methodology for analyzing contribution of genetic and environmental factors to variance in normal and abnormal traits in man and animals. Intelligence, neuroses, and psychoses. For all examples, independent variable will be genotype of an organism. GrC
- 5141f. PSYCHOLOGY OF WOMEN.** (4 cr; prereq 1001) Schletzer
Psychological and physical sex differences; developmental and environmental influences on dependency, aggression, achievement motivation, and achievement. Sex roles and sexuality during various life phases. GrC
- 5201f. SOCIAL PSYCHOLOGY.** (4 cr, §3201; prereq 1001, 1005, 8 cr in social science, psychology honors majors or grad student) Berscheid
Classical and contemporary theories and research in social psychology. GrC
- 5501s. VOCATIONAL PSYCHOLOGY.** (4 cr; prereq 3801 or equiv) Dawis
Individual differences analysis of the work personality and environment; vocational development and vocational choice; work adjustment; work motivation and performance; work satisfaction and satisfactoriness; psychological problems connected with work. GrC
- 5604w-5605sf. ABNORMAL PSYCHOLOGY.** (4 cr per qtr, §3604; prereq honors majors or grad student or §) Leon
Review of behavioral disorders. Etiology and treatment. GrC

Course Descriptions—Major Sequences

- 5701w. PERSONNEL AND INDUSTRIAL PSYCHOLOGY.** (4 cr; prereq 1001, one course in statistics or §) Dunnette
Principles of individual differences and psychological measurement applied to recruiting, selecting, evaluating, and training members of ongoing organizations. Job behavior description, performance measurement, selection and placement strategies, minority group employment, measurement of job satisfaction, strategies for training and development. GrC
- 5702s. PSYCHOLOGY OF INDIVIDUAL BEHAVIOR IN ORGANIZATIONS.** (4 cr; prereq 5701 or 9 cr in psychology or §) Campbell, Dunnette
Psychological research and methodology applied to the study of human behavior in ongoing organizations. Motivation, attitude measurement, problem solving and decision making, effects of organizational structure and climate, problems of leadership, supervision, interpersonal relations. GrC
- 5703f. SOCIAL PSYCHOLOGY OF ORGANIZATIONS.** (4 cr; prereq 9 cr in psychology or §) Bouchard, Campbell
Theoretical and methodological issues in the study of small groups in organizational settings. Social processes as constraints on organizational functioning. GrC
- 5751f,w. PSYCHOLOGY OF ADVERTISING.** (4 cr, §Jour 5251; prereq 1001) Jones
Psychological principles, research techniques, and applications in advertising and selling. Consumer attitudes and behavior. Psychological mechanisms upon which effectiveness of advertisements and commercials depends. GrC
- 5841w. REPRESENTATION OF STRUCTURE IN DATA.** (4 cr; prereq 3801, Math 1211, or §) Arabie
Theory and methods of unidimensional and multidimensional scaling; related methods for discovering and representing structures underlying psychological data. GrA
- 5861w. QUANTITATIVE METHODS IN PSYCHOLOGY.** (4 cr; prereq §) Viemeister
Elementary set theory, probability theory, matrix algebra, difference equations; construction and evaluation of behavior models. GrA
- 5862f. PSYCHOLOGICAL MEASUREMENT: THEORY AND METHODS.** (4 cr; prereq honors candidate or grad student) Weiss
Types of measurement (tests, scales, inventories) and their construction; theory and measurement of reliability and validity. GrC
- 5871s. MULTIVARIATE METHODS OF DATA ANALYSIS.** (4 cr; prereq 5862 or §) Weiss
Multivariate prediction and discrimination (linear and nonlinear models); multivariate covariation analysis, including cluster and factor analysis. GrC

School of Public Affairs (PA)

Staff—Director, John S. Adams, 909 Social Sciences Building; **Associate Director,** Donald P. Geesaman, 909 Social Sciences Building

Professors: Abrahamson, Adams, Brandl, Geesaman, Naftalin, Warp

Associate Professors: Anderson, Hoenack, Jernberg

Assistant Professors: Dewar, Gleeson, Krieger, Kudrle

Lecturer: Einsweiler

Adjunct Faculty—Professors: Backstrom, Borchert, Chase, Cochrane, Heller, Hetland, Iskander, Mitau, Turnbull, Weckwerth

Assistant Professor: Schoettle

Lecturer: Whiteside

Research Fellow: Greenberg

The School of Public Affairs is primarily devoted to graduate-professional study in the social sciences applied to public issues. Some undergraduate courses are offered in analysis, decision making, and administration for the public sector.

3011. ADMINISTRATION. (4 cr) Warp

Theory and practice of administration. The administrative process; theory; behavior. GrC

- 3101, 3102. INTRODUCTION TO PUBLIC AFFAIRS.** (4 cr per qtr) Chase, Naftalin
Problems and issues confronting government and society; how public policies are developed and implemented; career opportunities in public service. GrC
- 3121. INTRODUCTION TO PUBLIC INTEREST RESEARCH.** (4 cr, §5121) Abrahamson
Public interest activities, particularly as they relate to environmental, consumer, and public health issues. Public interest law; case studies of local and national public issues. GrC
- 3151. INTRODUCTION TO ENERGY POLICY.** (4 cr, §5151) Abrahamson
The "energy crisis." Energy supply and demand, alternative energy sources, energy conservation possibilities, environmental and social implications of alternative policies. Current energy policy issues. GrC
- 3970. DIRECTED STUDIES.** (1-15 cr per qtr; prereq §)
Guided individual reading or study.
- 5114, 5115. WORKSHOP ON MINNESOTA GOVERNMENT.** (3 cr per qtr) Warp
Background study through lectures, panel discussion, and seminar sessions of current Minnesota public policy issues.
- 5121. PUBLIC INTEREST RESEARCH AND PRACTICE.** (4 cr, §3121; prereq §) Abrahamson
Public interest groups—their origins, methods of operation, and activities. Consumer and environmental topics, public interest legal activities, policy analysis using environmental impact statements, regulatory agencies. Student research and review papers. GrC
- 5151. ENERGY AND ENERGY POLICY.** (4 cr, §3151; prereq §) Abrahamson
Fuel and energy supply and demand; environmental, social, and economic implications of alternative energy policies; means to effect changes in use patterns; political and institutional factors; relation of energy policy to economic, foreign, and environmental policies. GrC
- 5152. TOPICS IN ENERGY POLICY.** (4 cr; prereq 5151 or §) Abrahamson
Topic selected each year on the basis of current activities in state, federal, or international energy policy. GrC
- 5161, 5162. TECHNOLOGY PLANNING I, II.** (4 cr per qtr; prereq § for 5161...5161 for 5162)
Abrahamson, Geesaman
Relationship of science and technology to the ideological bases of society; technology's significance in the policy process; society's institutions for governing its technologies. GrC
- 5181. POLICY TOPICS IN COMMUNICATIONAL AND INFORMATIONAL TECHNOLOGIES.**
(3 cr; prereq §) Geesaman, Dewar
Contemporary topics selected for political and social significance. Related technologies and their economic and political importance; related policies and institutional controls. GrC
- 5301. THE MULTINATIONAL CORPORATION.** (4 cr; prereq Econ 1001, 1002 or equiv) Kudrle
Economic, political, social, and legal significance of the multinational corporation. Major policy options open to individual governments and international bodies. GrC
- 5319. INTERGOVERNMENTAL RELATIONS.** (4 cr, §Pol 5319; prereq 6 cr in social science or §)
Jernberg
Evolution of intergovernmental relations in the United States; administrative and fiscal problems and issues; human resources and services. GrC
- 5401. DEVELOPMENT ADMINISTRATION.** (4 cr) Warp
Problems and issues in development; the aid relationship; manpower for development; administrative reform; the regional approach; public enterprise; case studies. GrC
- 5502. LOCAL ADMINISTRATION.** (4 cr) Gleeson
Local public agencies in the political system; the individual in such agencies. The administrators' tools to control or change local public agencies; constraints under which the administrator works.
- 5503. TOPICS IN LOCAL ADMINISTRATION.** (4 cr; prereq 5502 or §) Gleeson
Analysis of selected topics.
- 5505. HOUSING POLICY.** (4 cr; prereq 12 cr in social sciences or §) Gleeson
The role of American national, state, and local governments in financing, control, taxation, and construction of housing. GrC
- 5506. TOPICS IN HOUSING POLICY.** (4 cr; prereq 5505) Gleeson
Analysis of selected topics. GrC
- 5516, 5517. SEMINAR: SOCIAL THEORY AND SOCIAL PLANNING I, II.** (4 cr per qtr; prereq 5516 for 5517)
Major issues in social theory; urban planners' responses, implicit and explicit, to these issues. Social change, alienation and anomie, power, images of society, values and objectivity; examples from urban planning. What the planner can do and has done in regard to social problems. GrC

Course Descriptions—Major Sequences

- 5550. PLANNING PROSEMINAR.** (2 cr; prereq #)
Major subareas of planning (social planning, planning theory). Topics differ from quarter to quarter. GrC
- 5601-5602. PLANNING THEORY SEMINAR.** (4 cr per qtr; prereq 5601 for 5602, #)
Philosophical and theoretical aspects of the relationship of systematic knowledge to public action and planning. Design methodology. GrC
- 5691. COMPARATIVE SERVICE ORGANIZATIONS.** (3 cr) Dewar
Goals, operation, and impacts of service organizations compared and contrasted; general patterns and critical issues; incentives and negative influences in organizational or bureaucratic settings. Fieldwork. GrC
- 5771-5781. ADMINISTRATIVE INTERNSHIP.** (3 cr; prereq Δ)
Fieldwork in an approved administrative agency under the joint supervision of an agency employee and a faculty member. Rotation through administrative assignments, solution of special problems, seminar discussion of experiences, and preparation of an internship report.

Public Health (PubH)

The B.A. degree is available in biometry, and courses for credit, some of which may be applied to distribution requirements, are offered in biometry (see departmental heading) and public health. Courses in public health are more fully described in the *School of Public Health Bulletin* and the *Graduate School Bulletin*.

- 3001. PERSONAL AND COMMUNITY HEALTH.** (3 cr, §3004) Greene, O'Brien
Fundamental principles of health conservation and disease prevention.
- 3004. BASIC CONCEPTS IN PERSONAL AND COMMUNITY HEALTH.** (4 cr, §3001, §3034)
Greene, Schwanke
Scientific, sociocultural, and attitudinal aspects of communicable and degenerative diseases, environmental and occupational health hazards, alcohol and drug problems; role of education in health conservation, disease control, and drug abuse.
- 3034. TOPICS IN ALCOHOL AND DRUG ABUSE.** (Cr ar; prereq #) Staff
Readings in alcohol and drug abuse; discussion.
- 3151. INTRODUCTION TO ENVIRONMENTAL HEALTH.** (3 cr; prereq 3 cr in public health)
Vesley
Principles of environmental health relating to water, food, wastes, housing, accidents, radiation, air, industrial hygiene.
- 3385. PHYSIOLOGICAL HYGIENE.** (4 cr; prereq 8 cr chemistry, 4 cr human anatomy or equiv, #)
Alexander, Dawson, Taylor
Basic physiological principles and facts.
- 3386. PHYSIOLOGICAL HYGIENE.** (4 cr; prereq 3385 or equiv) Taylor, Alexander
Effects of exercise, nutrition, environment, and age on performance and health.
- 3600. HUMAN NUTRITION.** (3 cr; prereq courses in chemistry, biology or #)
Principles of nutrition, application to individual and family eating patterns; nutritional aspects of community problems or programs.
- 5009. HONORS COURSE: ISSUES AND CONTROVERSIES IN CONTEMPORARY COMMUNITY HEALTH.** (3 cr; prereq 3001, 3004, 5006 or equiv and advanced application, #)
Greene, staff
Current issues and controversies in health. The balance between personal and community needs, interests, rights, and responsibilities. Limited field assignment.
- 5080. INTRODUCTION TO COMMUNITY HEALTH EDUCATION.** (2 cr; prereq #) Craig, Mills, Veninga
Health education as an integral part of health programs and services; planning and evaluation; methods, materials, and techniques of community health education.
- 5152. ENVIRONMENTAL HEALTH.** (2 cr; prereq #) Straub, staff
General principles of environmental health related to macro and micro environments and products consumed or used by man.

Religious Studies (RelS)

Staff—Chairman of Executive Committee, Robert B. Tapp, 354 Ford Hall; **Director of Undergraduate Studies**, James D. Tracy, 584 Social Sciences Building, **Director of Graduate Studies**, A. Thomas Kraabel, 310a Folwell Hall

Adjunct Faculty—Professors: Altholz (History), Bagley (History and Philosophy of Education), Farah (Near and Middle Eastern Studies), Hopkins (Philosophy), Johnson (Sociology), Kraabel (Classics), Kwiat (English and Humanities), Mather (East Asian Languages), O'Brien (English), Riedel (Music), Sibley (Political Science), Spencer (Anthropology), Tapp (Humanities, Religious Studies, South Asian Studies)

Associate Professors: Asher (Art History, South Asian Studies), Delattre (American Studies), Tracy (History)

Assistant Professors: Malandra (South Asian Studies), Paradise (Near and Middle Eastern Studies), Ross (Student Affairs)

Religious studies is concerned with understanding religions and religious movements of all kinds. Its emphases are comparative and multidisciplinary; both require understanding of historical phenomena and contemporary social processes. Students majoring in religious studies are expected to acquire both common disciplinary perspectives and specializations based on individual skills and interests.

B.A. MAJOR SEQUENCE

Before admission to the major, a student should consult the Religious Studies adviser, 114 Johnston Hall, for referral to faculty members whose academic responsibilities and concerns are appropriate. The degree program must have the adviser's approval.

Lists of courses approved for inclusion among the 15 courses required in areas B, C, D, and E (see Major Requirements below) are presented in the booklet *Religious Studies at the University of Minnesota*, obtainable in 114 Johnston Hall.

Major Requirements—15 courses, 13 at the 3xxx or 5xxx level and 9 from core courses distributed thus:

- A. Phenomenological and comparative perspective on religions: 1001 or 5001, 5890
- B. Philosophical perspectives on religions—one course
- C. Social sciences perspectives on religions—minimum of two courses representing at least two social science areas
- D. Literary and artistic perspectives on religions—minimum of two courses
- E. Area and historical studies—minimum of two courses representing at least two religious traditions

1001f. INTRODUCTION TO RELIGIOUS STUDIES. (4 cr, \$5001)

Individual and social religious behavior; methodologies for studying it; emergence of modern religious studies. Theistic Western religions (Judaism, Christianity, Islam) and nontheistic Buddhism. GrC

1031f. RELIGIONS OF THE 20TH-CENTURY WORLD: RELIGIONS IN SOUTH AND SOUTH-EAST ASIA. (4 cr, \$Indc 1504) GrC

1032w. RELIGIONS OF THE 20TH-CENTURY WORLD: RELIGIONS IN EAST ASIA. (4 cr, \$EAS 1032, \$EAL 1032) GrC

1033. RELIGIONS OF THE 20TH-CENTURY WORLD: RELIGIONS OF THE MEDITERRANEAN AREA—JUDAISM, CHRISTIANITY, ISLAM. (4 cr) GrC

Course Descriptions—Major Sequences

- 1034f. INTRODUCTION TO JUDAISM.** (4 cr, §JwSt 1034)
Concepts, movements, and institutions of classical Judaism, as manifested in the literature and festivals of Jewish people from Second Commonwealth times to the present. GrC
- 1035w. RELIGIONS OF THE 20TH-CENTURY WORLD: CHRISTIANITY.** (4 cr) Kraabel
The thought and institutions of Christianity with emphasis on the present day. Origins in Judaism: the *New Testament*. Continuing theological issues, leaders and opponents of the Church, the piety of the average Christian. Religious pluralism: Christianity in 20th-century America. GrC
- 1036s. THE RELIGION OF ISLAM.** (4 cr, §MidE 1036) Farah
The rise of Islam. The role of Muhammad, Koran, traditions; fundamentals and observances of the faith; sectarian movements; the spread of Islam into Asia and Africa; Bahá'i and Black Muslim components; reformist movements and change. GrC
- 3101f-3102w. RELIGIONS OF THE AMERICAN PEOPLE.** (4 cr per qtr) Ross
Religious perspective on American experience, Age of Discovery to the present. Religious traditions, Western and non-Western, examined developmentally, descriptively, and chronologically. GrC
- 3521. PSYCHICAL PHENOMENA IN RELIGIONS AND CULTURES.** (4 cr; prereq jr or §) Sibley
Critical study of such alleged phenomena as telepathy, clairvoyance, psychokinesis, out-of-the-body experiences, communication with the dead, healing; connections with religious experience and literature; implications for philosophy, social sciences, physics, etc. GrC
- 5001. APPROACHES TO THE STUDY OF RELIGION.** (4 cr, §1001; required of majors)
The thought and behavior of religious persons in historical and analytical perspective: the ways in which an individual is religious. Academic study of religion in publicly supported secondary and postsecondary schools. GrC
- 5890w. SEMINAR IN RELIGIOUS STUDIES.** (5 undergrad cr per qtr, 3 grad cr per qtr, \$3995; prereq sr major or §)
Conceptual and methodological issues in contemporary religious studies. Student hypotheses tested across at least two historical periods within two religious traditions. GrC
- 5960. TOPICS IN RELIGIOUS STUDIES.** (4 cr per qtr; prereq §)
Topics specified in *Class Schedule*.
- 5970f,w,s. DIRECTED STUDIES.** (3-5 cr per qtr; prereq Δ)
Guided individual reading or study.
- 5980f,w,s. DIRECTED INSTRUCTION.** (3-5 cr per qtr; prereq Δ)

Reserve Officers' Training Corps (ROTC)

Qualified male and female students may combine work toward degrees with participation in the 2- or 4-year Reserve Officers' Training Corps programs (Aerospace Studies, Military Science, Naval Science). Participants earn elective credits, and those who complete programs qualify for commissions as officers in one of the services. ROTC curricula are designed to provide instruction and practice in leadership skills as well as military subjects. Scholarships providing educational support for up to 4 years are available on a competitive basis.

Students interested in the qualifications, curricula, benefits, and obligations of each service should consult the *Army*, *Navy*, *Air Force ROTC Bulletin*, or inquire at the ROTC offices: Aerospace Studies, 3 Armory; Military Science, 108 Armory; Naval Science, 203 Armory.

AEROSPACE STUDIES (Air)

Staff—Head, Col. Thomas D. Madigan, USAF, 3 Armory

Professor: Madigan

Assistant Professors: Golden, Raino, Roberts

GENERAL MILITARY COURSE

1101f. U.S. AIR FORCE. (1 cr; prereq Δ)

The doctrine, mission, and organization of the U.S. Air Force.

Reserve Officers' Training Corps

- 1102w. AIR FORCE COMBAT COMMANDS.** (1 cr; prereq Δ)
The mission, organization, and operation of the Strategic Air Command, Aerospace Defense Command, and Tactical Air Command; their contributions to U.S. strategic offensive, defensive, and general purpose forces.
- 1103s. U.S. SUPPORT FORCES.** (1 cr; prereq Δ)
Air Force support forces. Organizations that support the combat commands. Air Force interaction with the Army and Navy.
- 1201f. EARLY HISTORY OF AIRPOWER.** (1 cr; prereq Δ)
The beginnings of manned flight. Early military attitudes toward aviation; the development of employment concepts, tactics, and strategies. Early development of air doctrine.
- 1202w. AIRPOWER IN WORLD WAR II AND KOREA.** (1 cr; prereq Δ)
Airpower in World War II. Development of an independent Air Force. Cold War strategy. Airpower in Korea.
- 1203s. MODERN EMPLOYMENT OF AIRPOWER.** (1 cr; prereq Δ)
Effects of airpower on tactics and strategy in the modern world. The role of airpower in Middle East, Cuba, Southeast Asia. Airpower in peacetime.

PROFESSIONAL OFFICER COURSE

- 3301f. MILITARY IN SOCIETY.** (3 cr; prereq Δ)
Role and function of the professional officer in a democratic society. Civil-military relationships. Communicative skills.
- 3302w. DEFENSE POLICY AND STRATEGY.** (3 cr; prereq Δ)
Maintenance of adequate national security forces. Formulation of U.S. defense policy. Impact of technological and international developments upon strategic preparedness. Overall defense policy-making process.
- 3303s. FORMULATION AND IMPLEMENTATION OF U.S. DEFENSE POLICY.** (3 cr; prereq Δ)
Functional processes and institutional structures in the formulation and implementation of U.S. defense policy. Case studies.
- 3401f. AIR FORCE LEADERSHIP COMMUNICATION.** (4 cr, §Spch 3111; prereq Δ)
Interdisciplinary study of leadership including theory and practice. Theoretical approaches to management. Application of interpersonal communication skills to leadership practice. The function of persuasion and cross-value communication in effective leadership. Experience in task-oriented small-group communication.
- 3402w. MILITARY MANAGEMENT.** (3 cr; prereq Δ)
Fundamentals of management processes; the unique nature of management in the military. Problem solving, decision making, and performance appraisal.
- 3403s. REALITY OF MILITARY MANAGEMENT.** (3 cr; prereq Δ)
Application of management fundamentals to case situations. Officer ethics, responsibilities, military judicial system, management of conflict, and professional development.
- 3404f,w,s. FLIGHT INSTRUCTION PROGRAM.** (5 cr; open only to AFROTC cadets; prereq Δ)
Twenty-five hours of flight instruction and practice. Federal aviation regulations, flight theory, aircraft instruments, meteorology, radio aids, navigation, and aircraft operation.

MILITARY SCIENCE (MII)

Staff—Head, Lt. Col. George N. Stenehjem, USA, 108 Armory
Professor: Stenehjem
Assistant Professors: Collins, Fieldman, Luchak, Vaughan

PREPROFESSIONAL DIVISION

Military Science I

- 1011f. WORLD MILITARY HISTORY.** (2 cr; prereq Δ , Leadership Laboratory)
Basic concepts of military history: principles of war, military definitions, relationship of geography, economics, and technology to military history. Warfare through the ages up through the Thirty Years' War.

Course Descriptions—Major Sequences

- 1012w. WORLD MILITARY HISTORY.** (2 cr; prereq Δ , Leadership Laboratory)
The beginnings of modern armies; limited war of 18th century; great age of sail; nation in arms and Napoleon; American Revolution and Civil War; armaments race in the 19th century.
- 1013s. WORLD MILITARY HISTORY.** (2 cr; prereq Δ , Leadership Laboratory)
Advent of total war—World War I and World War II; Korean War, and Vietnam; modern military implications.

Military Science II

- 1021f. FOUNDATIONS OF NATIONAL POWER.** (2 cr; prereq Δ , Leadership Laboratory)
Factors in a nation's capacity for developing power: geographical position, nature of population, social organization; the ideology, economy, and technological resources.
- 1022w. FOUNDATIONS OF NATIONAL POWER.** (2 cr; prereq Δ , Leadership Laboratory)
Instruments of national policy; alliance systems; and U.S., Soviet, and Red Chinese strategies.
- 1023s. FOUNDATIONS OF NATIONAL POWER.** (2 cr; prereq Δ , Leadership Laboratory)
The military in society; disarmament and arms control; various forms of warfare.
- 3970f,w,s. DIRECTED STUDIES.** (Cr ar; prereq $\#$)
Opportunity for guided study of contents of courses students cannot fit into their schedules.

PROFESSIONAL DIVISION

Military Science III

- 5131f. METHODS OF INSTRUCTION AND MAP READING.** (3 cr; prereq Δ , Leadership Laboratory)
Principles, methods, and techniques of preparing, presenting, and evaluating military instruction; practice teaching; reading and interpreting military maps and aerial photographs; land navigation techniques.
- 5132w. COMMUNICATION LEADERSHIP.** (4 cr; prereq Δ , Leadership Laboratory)
Individual and small group problems; role playing; problem-solving methods.
- 5133s. SMALL UNIT TACTICS AND COMMUNICATIONS.** (3 cr; prereq Δ , Leadership Laboratory)
Small unit operations in conventional and unconventional battlefield environments; employment in tactical situations; the function, capabilities, and limitations of signal equipment.

Military Science IV

- 5141f. THEORY AND DYNAMICS OF THE MILITARY TEAM.** (3 cr; prereq Δ , Leadership Laboratory)
Command and staff organization and functions; a commander's estimate of a situation operations order; importance of military intelligence cycle to military team; training management and its application to military operations.
- 5142w. MILITARY ADMINISTRATION AND LOGISTICS MANAGEMENT.** (3 cr; prereq Δ , Leadership Laboratory)
A logistical supply system and its importance to combat operations; military personnel management procedures—records, classification and assignment, unit fund accounting, mess management.
- 5143s. MILITARY LAW AND SERVICE ORIENTATION.** (3 cr; prereq Δ , Leadership Laboratory)
History and concepts of military justice; origin, nature, and purpose of Uniform Code of Military Justice and Manual for Courts-Martial; relationship between military justice and military discipline; scope and nature of appellate review; service orientation for newly commissioned officers.

NAVAL SCIENCE (Nav)

Staff—Head, Capt. E. N. Bouffard, USN, 203 Armory

Professor: Bouffard

Associate Professor: Lewis

Assistant Professors: Johnson, Svendsen, Wall, Weddel

BASIC COURSE

All NROTC Students—First Year

- 1101f. NAVAL SHIPS SYSTEMS I. (2 cr; prereq #)
Types, purpose, and structure of naval ships. Ship compartmentation, steam and fossil fuel propulsion systems, ship design, ship stability characteristics.
- 1102w. NAVAL SHIPS SYSTEMS II. (2 cr; prereq #)
Nonsteam and nuclear ship propulsion systems, auxiliary ship support systems, ship control, sensors.
- 1103s. NAVAL SHIPS SYSTEMS III. (2 cr; prereq #)
Theory and principles of operation for naval weapons systems. Design, capabilities and limitations, evaluation of air, sea, and undersea systems.

All NROTC Students—Second Year

- 1201f. SEAPOWER AND MARITIME AFFAIRS I. (1 cr; prereq #)
Concept of seapower. Missions of the Navy; roles of various components.
- 1202s. SEAPOWER AND MARITIME AFFAIRS II. (2 cr; prereq #)
Seapower as instrument of national policy; comparative study of U.S. and Soviet naval strategies.
- 1203w. NAVAL OPERATIONS. (2 cr; prereq #; NROTC only)
Ship handling, underway replenishment, multiship maneuvering, major aspects of fleet communications, basic ocean meteorology.

ADVANCED COURSE

Navy Sequence—Third Year

- 3303f. INLAND AND COASTAL NAVIGATION. (3 cr; prereq #)
Piloting, dead reckoning, fixes, running fixes, tides, currents, and anchoring. Rules of the nautical road.
- 3304w. CELESTIAL AND ELECTRONIC NAVIGATION. (4 cr; prereq trigonometry, #)
Navigation using celestial bodies. Relative motion and ship maneuvering. Modern electronic navigation systems.
- 3305s. OPERATIONS ANALYSIS. (3 cr; prereq #)
Scientific approaches to decision making. Decision theory. Game theory. Mathematical model building for military problems.

Navy Sequence—Fourth Year

- 3404f. PRINCIPLES OF NAVAL MANAGEMENT I. (2 cr; prereq #)
Management theory and its application to formal military organizations, national level to shipboard.
- 3405w. PRINCIPLES OF NAVAL MANAGEMENT II. (2 cr; prereq #)
Naval leadership: management relationships, interpersonal relations, management psychology, group dynamics, individual differences.
- 3406s. PRINCIPLES OF NAVAL MANAGEMENT III. (2 cr; prereq #)
Management at the shipboard level: divisional organization, Uniform Code of Military Justice, formal organization.

Marine Corps Sequence—Third Year

- 3352f. EVOLUTION OF ART OF WAR I. (2 cr; prereq #)
Principles of war. Evolution of warfare from 3500 B.C. through the French Revolution.
- 3353w. EVOLUTION OF ART OF WAR II. (2 cr; prereq #)
Military technology and theory from the Industrial Revolution through the World War I armistice.
- 3354s. EVOLUTION OF ART OF WAR III. (2 cr; prereq #)
Warfare from World War II through the Vietnam experience.

Course Descriptions—Major Sequences

Marine Corps Sequence—Fourth Year

- 3452f. **AMPHIBIOUS WARFARE I.** (2 cr; prereq *)
Amphibious warfare techniques from Gallipoli through World War II operations in the Mediterranean.
- 3453w. **AMPHIBIOUS WARFARE II.** (2 cr; prereq *)
From the Pacific campaigns of World War II through the postwar amphibious operations.
- 3454s. **AMPHIBIOUS WARFARE III.** (2 cr; prereq *)
Post-World War II amphibious operations; present-day concepts of amphibious operational planning.

Navy or Marine Corps Sequence—Third or Fourth Year

- 3500f,w. **FLIGHT INSTRUCTION PROGRAM.** (5 cr, §AEM 3009; prereq Δ)
Program based on FAA regulations, Part 141. Maximum of 50 hours of ground instruction, minimum of 15 hours of flight instruction. Students admitted to pilot phase may receive up to 40 hours of flight instruction leading to FAA certification as private pilots. Air navigation, radio aids, aircraft instruments, meteorology, flight theory, flight maneuvers, aircraft and engine operation.

RUSSIAN

See Slavic and East European Languages.

SANSKRIT

See South Asian Studies.

Scandinavian

Staff—*Chairman*, J. Allen Simpson, 210b Folwell Hall; *Director of Undergraduate Studies*, Kaaren Grimstad, 212 Folwell Hall

Professors: Firchow, Hasselmo, Simpson

Associate Professors: Liberman, Grimstad, Mishler, Stockenström

Assistant Professor: Vähämäki

The Department of Scandinavian teaches and conducts research in the language and literature of the Scandinavian countries and Finland, in the context of relevant cultural-historical background and milieu. Majors with concentration in Danish, Finnish, Norwegian, and Swedish are offered.

SCANDINAVIAN (Scan)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Dan, Nor, or Swed 1101-1102-1103 or 1106-1107; 1104-1105

Major Requirements—Dan, Nor, or Swed 3101, 3102, 3103, 3104

At least 20 cr in 3xxx or 5xxx Scandinavian courses (for substitution of courses from other departments, consult director of undergraduate studies)

General Education—Courses appropriate for nonmajors are Scan 1504, 3501, 3601, 3602, 3604, 5404, 5421, 5501, 5502, 5503, 5601, 5611, 5613, 5614, 5615, 5616, 5617, 5631, 5632, 5633, 5704, 5711, and 5712.

- 1504. SCANDINAVIAN IMMIGRANT CULTURE AND ITS BACKGROUND.** (4 cr)
Cultural self-maintenance efforts of Scandinavian immigrants to the United States; immigrant literature. Readings in translation. GrC
- 3501. INTRODUCTION TO SCANDINAVIA.** (4 cr [no cr toward major])
Cultural, social, and political developments; major cultural figures. Readings in translation. GrC
- 3601. SCANDINAVIAN LITERATURE IN TRANSLATION.** (4 cr [no cr toward major])
Mishler
Major literary works from the Middle Ages to the present. GrD
- 3602. THE TALES OF H. C. ANDERSEN.** (4 cr) Mishler
Andersen's stories and tales. In English. GrD
- 3604. FINNISH LITERATURE IN TRANSLATION.** (4 cr) Vähämäki
Major literary works from the Middle Ages to the present. GrD
- 3670. TOPICS IN SCANDINAVIAN LITERATURE.** (4 cr per qtr)
Topics announced before first class meetings. Readings in English for nonmajors. Meets with 5670. GrD
- 3980. DIRECTED INSTRUCTION.** (Cr ar; prereq §)
- 5201. SCANDINAVIAN LITERATURE FROM THE LATE MIDDLE AGES TO THE ENLIGHTENMENT.** (4 cr; prereq reading knowledge of a Scandinavian language; offered alt yrs)
From the 14th century to Bellman and Holberg. GrD
- 5202. FROM ROMANTICISM TO THE MODERN BREAKTHROUGH.** (4 cr; prereq reading knowledge of a Scandinavian language; offered alt yrs)
Romantic and early realistic authors. GrD
- 5404. HISTORY AND STRUCTURE OF FINNISH.** (4 cr) Vähämäki
History and structure (phonology and syntax) of modern Finnish. Readings in translation for nonmajors. GrA
- 5421. FINNISH FOLKLORE: THE KALEVALA.** (4 cr; offered alt yrs) Vähämäki
The Finnish national epos from a folkloristic point of view. Readings in translation. GrD
- 5501. SCANDINAVIAN MYTHOLOGY.** (4 cr) Grimstad
Scandinavian myths based on the Poetic Edda and the Prose Edda. Readings in translation. GrD
- 5502. THE ICELANDIC SAGA.** (4 cr) Grimstad
The Saga literature: its origins and development. Readings in translation. GrD
- 5503. SCANDINAVIAN FOLKLORE.** (4 cr) Grimstad
Literary and folkloristic investigation of Scandinavian ballad and folktale. Readings in translation for nonmajors. GrD
- 5511. SKALDIC POETRY: ITS METHOD.** (4 cr; prereq reading knowledge of Old Icelandic; offered alt yrs)
Representative Skaldic poetry and its forms and method. GrD
- 5512. THE POETIC EDDA.** (4 cr; prereq reading knowledge of Old Icelandic)
Poems from the Poetic Edda (texts in Old Icelandic). GrD
- 5601. INGMAR BERGMAN.** (4 cr) Mishler
Viewing six of Ingmar Bergman's films, readings of film scripts. GrD
- 5611. SCANDINAVIAN LITERATURE IN ITS EUROPEAN CONTEXT: REALISM.** (4 cr)
Stockenström
The breakthrough of realism in Scandinavian literature, in its European context. Representative European literary texts from the 19th century—dramas, novels, and criticism—read in translation. GrD
- 5613. CONTEMPORARY SCANDINAVIAN LITERATURE.** (4 cr) Mishler
Major trends after 1945. Readings in translation for nonmajors. GrD
- 5614s. THE DRAMA OF IBSEN AND STRINDBERG.** (4 cr; prereq § for majors) Stockenström
Plays of Scandinavia's two major dramatists, in the context of modern theatre. Readings in translation for nonmajors. GrD
- 5615. IBSEN AND THE BEGINNINGS OF THE MODERN DRAMA.** (4 cr)
The plays of Ibsen; his role as "founder" of modern European drama. Readings in translation for nonmajors. GrD

Course Descriptions—Major Sequences

- 5616. STRINDBERG AND THE DRAMA IN REVOLT AND TRANSITION.** (4 cr) Stockenström
Strindberg as master of the naturalistic drama and as "the father of modernity" in European and American theatre. Readings in translation for nonmajors. GrD
- 5617. SCANDINAVIAN LITERATURE IN ITS EUROPEAN CONTEXT: SYMBOLISM.** (4 cr)
Stockenström
Symbolism in Scandinavian literature, in its European context. Representative European literary texts from late 19th and early 20th century—dramas, novels, and criticism—read in translation. GrD
- 5619. SCANDINAVIAN POETRY SINCE 1890.** (4 cr; prereq reading knowledge of a Scandinavian language; offered alt yrs) Simpson
Representative poets since 1890. GrD
- 5631. THE SCANDINAVIAN NOVEL, 1800-1890.** (4 cr) Simpson
The "modern breakthrough" of the 1870's and 1880's; works from preceding periods. Readings in translation for nonmajors. GrD
- 5632. THE SCANDINAVIAN NOVEL, 1890 TO WORLD WAR I.** (4 cr) Simpson
Hamsun, Strindberg, Söderberg, Jensen, and others. Readings in translation for nonmajors. GrD
- 5633. THE SCANDINAVIAN NOVEL FROM WORLD WAR I TO 1950.** (4 cr) Simpson
The Scandinavian novel since World War I. Readings in translation for nonmajors. GrD
- 5670. TOPICS IN SCANDINAVIAN LITERATURE.** (4 cr per qtr)
For description, see 3670. GrD
- 5701-5702. OLD NORSE LANGUAGE AND LITERATURE.** (4 cr per qtr) Liberman
Acquisition of reading knowledge of Old Icelandic; linguistic, philological, and literary study of Old Norse language and literature. GrD
- 5703. OLD NORSE: SAGA READING AND ANALYSIS.** (4 cr; prereq 5702; offered alt yrs)
Grimstad
(Continuation of 5702) Prose narrative in Old Norse; its literary content. GrD
- 5704. HISTORY OF THE SCANDINAVIAN LANGUAGES.** (4 cr) Hasselmo
From early Middle Ages to the present; cultural history. Readings in translation for nonmajors. GrA
- 5711. STRUCTURE OF THE SCANDINAVIAN LANGUAGES.** (4 cr; prereq introductory course in linguistics or $\frac{3}{4}$; offered alt yrs) Hasselmo
Syntax and phonology of standard Danish, Norwegian, and Swedish. Readings in translation for nonmajors. GrA
- 5712. SCANDINAVIAN HISTORICAL LINGUISTICS.** (4 cr; prereq introductory course in linguistics or $\frac{3}{4}$; offered alt yrs) Hasselmo
Internal history of Danish, Norwegian, and Swedish. Readings in translation for nonmajors. GrA
- 5721-5722. MODERN ICELANDIC.** (1 cr per qtr; prereq knowledge of Old Icelandic or $\frac{1}{2}$ 5701-5702)
Phonology and grammar; reading of texts. GrA
- 5970. DIRECTED STUDIES.** (1-15 cr per qtr)
Guided individual reading and study of topics not covered by regular courses. Readings in Scandinavian literature in the original.

DANISH (Dan)

- 1101f-1102w-1103s. BEGINNING DANISH.** (5 cr per qtr) GrA
- 1104f-1105w. INTERMEDIATE DANISH.** (5/4 cr; prereq 1103 or equiv) GrA
- 3101s. ADVANCED DANISH.** (4 cr; prereq 1105 or equiv)
Continued development of reading, writing, and speaking skills. GrA
- 3102f-3103w-3104s. READINGS IN DANISH LITERARY TEXTS.** (4 cr per qtr; prereq 3101 or equiv)
Use of diverse texts to develop reading, writing, and speaking skills. GrA

FINNISH (Fin)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1101-1102-1103, 1104-1105

Major Requirements—3101, 3102, 3103, 3104

Scan 3604, 5404, 5421

At least 8 cr in Scandinavian history

1101f-1102w-1103s. **BEGINNING FINNISH.** (5 cr per qtr) Sinks GrA

1104f-1105w. **INTERMEDIATE FINNISH.** (5/4 cr; prereq 1103 or equiv) Vähämäki GrA

3101s. **ADVANCED FINNISH.** (4 cr; prereq 1105) Vähämäki
Continued development of writing and speaking skills; problems and usage of Finnish grammar. GrA

3102f. **READINGS: FINNISH TEXTS.** (4 cr; prereq 3101) Vähämäki
Use of diverse texts from 19th and 20th centuries to develop reading, writing, and speaking skills. GrA

3103w-3104s. **READINGS: FINNISH TEXTS.** (4 cr per qtr; prereq 3102) Vähämäki
For description, see 3102. GrA

NORWEGIAN (Nor)

1101f-1102w-1103s. **BEGINNING NORWEGIAN.** (5 cr per qtr) GrA

1104f-1105w. **INTERMEDIATE NORWEGIAN.** (5/4 cr; prereq 1103 or equiv) GrA

1106w-1107s. **INTENSIFIED BEGINNING NORWEGIAN.** (8/7 cr, §1101-1102-1103; prereq a second language or §)
Use of the computer and other teaching aids to develop mastery of Norwegian equal to that achieved in 1101-1102-1103. GrA

3101. **ADVANCED NORWEGIAN.** (4 cr; prereq 1105 or equiv)
Continued development of reading, writing, and speaking skills. GrA

3102f-3103w-3104s. **READINGS IN NORWEGIAN LITERARY TEXTS.** (4 cr per qtr; prereq 3101 or equiv)
Use of diverse literary texts to develop reading, writing, and speaking skills. GrA

SWEDISH (Swed)

1101f-1102w-1103s. **BEGINNING SWEDISH.** (5 cr per qtr) GrA

1104f-1105w. **INTERMEDIATE SWEDISH.** (5/4 cr; prereq 1103 or equiv) Grimstad GrA

1106w-1107s. **INTENSIFIED BEGINNING SWEDISH.** (8/7 cr, §1101-1102-1103; prereq a second language or §)
Use of the computer and other teaching aids to develop mastery of Swedish equal to that achieved in 1101-1102-1103. GrA

3101s. **ADVANCED SWEDISH.** (4 cr; prereq 1105 or equiv) Stockenström
Continued development of reading, writing, and speaking skills. GrA

3102f-3103w-3104s. **READINGS IN SWEDISH LITERARY TEXTS.** (4 cr per qtr; prereq 3101 or equiv)
Use of diverse texts to develop reading, writing, and speaking skills. GrA

SERBO-CROATIAN

See Slavic and East European Languages.

Slavic and East European Languages

Staff—*Chairwoman*, Adele K. Donchenko, 251 Elliott Hall; *Director of Undergraduate Studies*, Donchenko

Associate Professors: Armes, Donchenko

Assistant Professors: Corten, Kulesov, Polakiewicz, Prokopov, Sjoberg

The Department of Slavic and East European Languages offers study of Polish, Russian, and Serbo-Croatian languages, with a major in Russian, and of the literature, culture, and civilization of the Slavic world.

General Education—Courses recommended for general education are Russ 3501, 3502, 3503, 3601, 3602, 5201, 5202, 5203, and Slav 1501 and 3701.

RUSSIAN (Russ)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1101-1102-1103, 1104-1105-1106

Major Requirements—3011-3012-3013, 3021-3022-3023, 3104-3105-3106, 10 additional 3xxx or 5xxx cr in department courses

For requirements for a teacher's certificate, see the *College of Education Bulletin*.

1101f-1102w-1103s. BEGINNING RUSSIAN. (5 cr per qtr; five class meetings a wk)

Speaking, reading, and understanding Russian through acquisition of basic patterns of speech. GrA

1104f-1105w-1106s. INTERMEDIATE RUSSIAN. (5 cr per qtr; prereq 1103)

Expansion of experience in speaking, reading, and understanding Russian; reading contemporary texts. GrA

1107f-1108w-1109s. INTENSIVE RUSSIAN. (10 cr per qtr)

Concentrated approach to speaking, reading, and understanding Russian. GrA

1112w-1113s. HONORS COURSE: BEGINNING RUSSIAN. (5 cr per qtr; for students who have demonstrated high ability and achievement during 1st qtr; prereq Δ) GrA

1114f-1115w-1116s. HONORS COURSE: INTERMEDIATE RUSSIAN. (5 cr per qtr; prereq 1113 or \S) GrA

3011f-3012w-3013s. COMPOSITION. (3 cr per qtr; prereq 1106) GrA

3021f-3022w-3023s. CONVERSATION. (2 cr per qtr; prereq 1106) GrA

3104f. INTRODUCTION TO LITERARY ANALYSIS. (5 cr; prereq 3013 and 3023)

Advanced composition and conversation. Reading and analyzing selected short stories and plays to familiarize students with the structuralist approach to study of literature. Taught in Russian. GrA

3105w. READING OF RUSSIAN POETRY AND NOVEL. (5 cr; prereq 3104)

Literary values appreciated through stylistic analysis and literary interpretation; analysis of humanistic elements. Taught in Russian. GrA

3106s. THE CURRENT SOVIET SCENE. (5 cr; prereq 3105)

Current Soviet values as reflected in literature, the press, and other media. Taught in Russian. GrA

3116. HONORS COURSE: PROSEMINAR IN RUSSIAN LITERATURE. (4 cr; prereq 3106 and Δ)

3501f, 3502w, 3503s. RUSSIAN CIVILIZATION AND CULTURE. (4 cr per qtr; no prereq for English section...1106 or \S for Russian section)

Aspects of Russian culture—land, peoples, languages, institutions, intellectual and artistic trends and achievements. GrC

Slavic and East European Languages

- 3601f, 3602w. 19TH-CENTURY RUSSIAN LITERATURE IN TRANSLATION.** (4 cr per qtr; no knowledge of Russian required)
3601: Pushkin, Lermontov, Gogol, Turgenev, and others. 3602: Tolstoy, Dostoevsky, and others. GrD
- 3970. DIRECTED STUDIES.** (3-5 cr per qtr; prereq § and Δ)
Guided individual reading or study.
- 5201f, 5202w, 5203s. SOVIET RUSSIAN LITERATURE IN TRANSLATION.** (4 cr per qtr)
5201: Evolution of Soviet Russian literature during the 1920's; works of Babel, Leonov, Olesha, and Zamiatin. 5202: Soviet novel from the end of the 1920's to World War II; Bulgakov, Sholokhov, and the later works of Leonov. 5203: Soviet Russian and Russian emigré literature since 1953; Maksimov, Pasternak, Siniavskii, and Soviet poetry. GrD
- 5204. 19TH-CENTURY RUSSIAN CRITICISM.** (4 cr; prereq sr or §)
Major Russian literary critics of period; literary, political, and social implications. GrD
- 5301. RUSSIAN POETRY: 19TH CENTURY.** (4 cr; offered when feasible) GrD
- 5401. DOSTOEVSKY.** (4 cr)
Novels of Dostoevsky. GrD
- 5403. GOGOL.** (4 cr)
Earlier and major works. GrD
- 5404. TOLSTOY.** (4 cr)
Novels, stories, and dramas. GrD
- 5406. PUSHKIN.** (4 cr)
Pushkin's place in development of Russian literature. GrD
- 5407. STORIES AND PLAYS OF ANTON CHEKHOV IN TRANSLATION.** (4 cr)
Prose works and major plays. An intrinsic approach. GrD
- 5409. THE 19TH-CENTURY RUSSIAN NOVEL.** (4 cr)
The Russian realistic novel from origin to decline; social, political, and intellectual circumstances that led to its emergence as the dominant genre of the "Age of Realism" in Russia. GrD
- 5501. INTELLECTUAL TRENDS IN 19TH-CENTURY RUSSIA.** (4 cr)
Intellectual and social movements in the 19th century in relation to literary developments. GrC
- 5701f, 5702w. STRUCTURE OF MODERN RUSSIAN.** (4 cr per qtr; prereq 1106 or §) GrA
- 5704f, 5705w. HISTORY OF RUSSIAN LANGUAGE.** (4 cr per qtr; prereq 1106 or equiv; offered when feasible)
Linguistic analysis of historical development of Russian language. GrA
- 5970. DIRECTED STUDIES.** (1-3 cr per qtr; prereq §)
Guided individual reading or study.

POLISH (Plsh)

- 1101f-1102w-1103s. BEGINNING POLISH.** (5 cr per qtr)
Speaking, understanding, and reading basic Polish. GrA
- 1104f-1105w-1106s. INTERMEDIATE POLISH.** (5 cr per qtr; prereq 1103 or §)
Grammar review, advanced texts, practice in speaking. GrA
- 3201f, 3202w. READINGS IN POLISH LITERATURE.** (4 cr per qtr; prereq 1106 or §; offered when feasible)
Classic and contemporary texts. GrD
- 3601f, 3602w. SURVEY OF POLISH LITERATURE IN TRANSLATION.** (4 cr per qtr) GrD
- 5301. CONTEMPORARY POLISH DRAMA.** (4 cr)
Polish playwrights from late 19th century to present; experimental trends in composition and performances; the theatre of the absurd. GrD
- 5970. DIRECTED STUDIES.** (1-4 cr per qtr; prereq §)
Guided individual reading or study.

Course Descriptions—Major Sequences

SERBO-CROATIAN (Serb)

1101f-1102w-1103s. BEGINNING SERBO-CROATIAN. (5 cr per qtr) GrA

1104f-1105w-1106s. INTERMEDIATE SERBO-CROATIAN. (5 cr per qtr; prereq 1103 or #) GrA

5970. DIRECTED STUDIES. (1-4 cr per qtr; prereq #)
Guided individual reading or study.

SLAVIC (Slav)

1501. THE SLAVIC HERITAGE. (4 cr)

Traditions and culture of the Slavic world and of Slavic ethnic groups in America. GrC

3201f, 3202w. SOUTH SLAVIC LITERATURE. (4 cr per qtr; offered when feasible) GrD

3501f, 3502w, 3503s. SOUTH SLAVIC CIVILIZATION AND CULTURE. (4 cr per qtr)

Cultural achievements of the South Slavs as reflected in arts and social thought. 3501: From appearance of the Slavs in the Balkans to 1389. 3502: From fall of Kossovo to World War I. 3503: From World War I to present. GrC

3701. INTRODUCTORY SURVEY OF THE SLAVIC LANGUAGES. (4 cr)

Salient aspects of Slavic languages in their evolution from unity to diversity. Aspects of contemporary diversity. GrA

5701-5702. OLD CHURCH SLAVIC. (4 cr per qtr; prereq Ling 3005 or equiv; offered when feasible)

Introduction to Slavic linguistics. GrA

5900. TOPICS IN SLAVIC LITERATURE. (4 cr per qtr [12 cr max])

Topics specified in the *Class Schedule*.

Social Science (SSci)

Courses in the Social Science program are often cross-disciplinary and experimental. Presented by both CLA and non-CLA faculty, they are often offered on a quarter-by-quarter basis. For current courses, see the *Class Schedule* or inquire in 106 Johnston Hall. Information about Literature and Fine Arts and Natural Science and Technology experimental courses is available from the same sources.

3101. AN INTRODUCTION TO MARXISM. (4 cr)

Marxist philosophy of science, knowledge, and social development; evolutionary and revolutionary processes of change; formation of class societies; capitalism, imperialism, paths to socialism; transition from socialism to communism. GrC

3233. WOMEN IN INDIAN SOCIETY: TRADITION AND CHANGE. (4 cr) Junghare

The position of women in India, examined against the background of traditional culture and contemporary development; cultural values and modes of thought. Views of Indian women. Experimental course approved for fall 1976.

3402. ECOLOGY, TECHNOLOGY, AND SOCIETY. (5 cr)

The impact of technology on society as seen by engineers, scientists, and social scientists. Social problems associated with economic growth: environmental consequences, the arms race, food and fertilizers, and population growth. Alternative strategies. GrC

3970. DIRECTED STUDIES. (1-5 cr per qtr; prereq permission of Office for Special Learning Opportunities)

Guided individual reading or study.

Social Work (SW)

Staff—*Director*, James A. Goodman, 400 Ford Hall; *Assistant Director*, Helen J. Yesner

Professors: Cohn, Compton, Goodman, Guilford, Hoffman, Hoshino, Newhouse Sterne, Yesner

Associate Professor: Wattenberg

Assistant Professors: Belgun, Crompton, Peterson, Red Horse, Stewart

Instructor: Frumkin, Warren

Coordinators and Instructors: Bennett, Goodwin, Guminga, Kruzich, Lynch, Young

Two baccalaureate degrees are offered through the School of Social Work: the B.A. in social welfare and the B.S. in social work.

The B.A. program, a broadly based liberal arts course of study with a core of social work courses, is designed to prepare students for graduate work in social work and other human and community service disciplines. It emphasizes awareness of social needs and problems and the political implications of human service issues.

The B.S. program is designed to provide students with disciplined competence in beginning social work practice as well as wide educational experience in areas that share concern for the human condition. On the basis of the knowledge, principles, theories, and techniques of social work, the program prepares students for entry into professional social work and graduate work. A 480-hour fieldwork commitment, under experienced supervision, and a concurrent student-faculty-field seminar are involved. The B.S. program has received provisional accreditation from the Council on Social Work Education. Admission requires that students meet academic and community service prerequisites and that they file applications for the limited number of places available.

Additional information may be obtained from the undergraduate adviser, 480 Ford Hall. Prospective majors, especially for the B.S., are urged to consult the adviser *early* in the sophomore year.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1001; Soc 1001; Psy 1001; Anth 1002; CPsy 1301; one course from Econ 1001, 1014, 3001, 3002; one course from Pol 1001, 1027, 1031, 1041, 1051

Major Requirements—3004, 3005, 3101, 3984

32 cr from the following areas (specific courses listed at undergraduate adviser's office): one course in cross-cultural studies, one in organization theory; remaining cr from communication, urban and regional settings, social problems, social history, law and social policy, and human growth, development, and change

B.S. MAJOR SEQUENCE

Required Preparatory Courses—Same as for B.A. degree

Major Requirements—3101, 3102 or 3990, 3004, 3005, 3006, 3984, 3989, 3031-3032-3033

32 cr requirement same as for B.A.

6 cr in directed studies, honors colloquia, interdisciplinary studies, special seminars, advanced courses or equiv

1001f,w,s. INTRODUCTION TO SOCIAL WELFARE AND COMMUNITY SERVICES. (5 cr)

Community-based social services that represent societal responses to needs. Characteristics reviewed historically, dynamically, and comparatively. GrC

3004f,w,s. SOME CONCEPTS OF HUMAN DEVELOPMENT AND CHANGE. (4 cr, \$5201; prereq jr or sr, 1001)

Concepts from various schools of thought: Erikson, Skinner, Maslow, Jung. Relevance and implications for practice in the human services. GrC

3005f,w,s. SOCIAL WORK PROCESSES: METHODS OF INTERVENTION. (4 cr, \$5401; prereq jr or sr, 1001)

The function of values and knowledge in social work practice; the meaning of giving and receiving help; the process in intervention; some social work principles. GrC

Course Descriptions—Major Sequences

- 3006. SOCIAL WORK PRACTICE IN SELECTED SETTINGS.** (4 cr; prereq 1001, 3004, 3005 or §)
Social work practice theory in adaptations to specific target populations—children and youth, the emotionally ill, offenders, the aged, the disabled. GrC
- 3031-3032-3033f,w,s. FIELD PRACTICE: SUPPORTING SEMINAR.** (4 cr per qtr; for BS majors only; prereq 3004, 3005, written consent of field coordinator)
Supervised practice in primary service roles in community service delivery systems; supporting seminar. GrC
- 3101f,w,s. SOCIAL WELFARE: A FRAMEWORK FOR ANALYSIS.** (4 cr, §5101; prereq jr or sr)
Historical development, legislative enactments, administrative policy, and program structure under which federal, state, and local governmental programs of income maintenance, medical care, and public housing operate. GrC
- 3102f,w,s. SOCIAL SERVICE PROGRAMS FOR CHILDREN AND ADULTS.** (4 cr; prereq 3101 or §)
Historical development, philosophies, and program characteristics of work with dependent or neglected children, the mentally retarded, the mentally ill, the physically handicapped, and juvenile and adult offenders. GrC
- 3984f,w,s. INTRODUCTION TO COMMUNITY DEVELOPMENT.** (4 cr; prereq 1001 or §)
Trends, pace, and dynamics that dominate urban communities; strategies to achieve neighborhood goals; factors that control and influence change in planning; action on the community level. GrC
- 3989f,w,s. RESEARCH METHODS IN SOCIAL WORK.** (4 cr; for BS majors only or §)
The logic and methods of inquiry in human service fields and programs. GrA
- 3990f,w,s. DIRECTED RESEARCH.** (Cr ar; prereq §)
- 5010f,w,s. SEMINAR: SPECIAL TOPICS.** (3 cr; prereq 1001, 3005, jr, sr, or grad majoring in social work)
- 5101f. INTRODUCTION TO SOCIAL POLICY: SOCIAL WELFARE PERSPECTIVES.** (3 cr, §3101; open to entering social work grad students who have not completed a CSWE-accredited undergrad social work concentration; prereq § for undergrads)
Basic concepts and perspectives necessary for understanding and analyzing social welfare programs. GrC
- 5102. WOMEN: A SOCIAL WELFARE PERSPECTIVE.** (3 cr; prereq jr or sr major in social work or grad student)
Changing views of women; implications for social services and social welfare policies. Economic status of women; relationships of women, work, welfare, and poverty. GrC
- 5201f. THEORIES OF HUMAN GROWTH AND CHANGE: IMPLICATIONS FOR SOCIAL WORK.** (3 cr, §3004; open to entering social work grad students who have not completed a CSWE-accredited undergrad social work concentration; prereq § for undergrads)
Concepts of human growth and change; theories of human behavior and their implications for social work practice. Frame of reference within which to view the individuals in their life cycle. GrC
- 5401f. INTERVENTIVE METHODS IN SOCIAL WORK PRACTICE.** (3 cr, §3005; open to entering social work grad students who have not completed a CSWE-accredited undergrad social work concentration; prereq § for undergrads)
General and functional concepts, strategies, and actions of social work practice; the "problem-solving approach" in analyzing and dealing with situations of concern. GrC
- 5404. BEGINNING CHILD WELFARE PRACTICE.** (3 cr; prereq BS or MS major, 1001, 3004, 3005, 3101, 3102, §)
Exploration, organization, and application of knowledge about demands of child welfare practice. Analysis of and intervention in problems and cases; worker functioning. GrC
- 5414. FUNDAMENTALS OF SOCIAL GROUP WORK.** (3 cr)
Principles and methods. Worker intervention in social group work practice. Historical and ethical foundations, range of group functions, and worker activity in relation to group structure and process. GrC

Sociology (Soc)

Staff—*Chairman*, Richard Hall, 1114a Social Sciences Building; *Director of Undergraduate Studies*, Arthur Johnson, 1127 Social Sciences Building

Regents' Professor: Hill

Professors: T. Anderson, R. Carter, Clark, Cooperman, Donohue, Ellenbogen, Finestone, Fulton, Hall, Johnson, Leik, Martindale, Nelson, Ramsey, Reiss, Simmons, Stone, Tallman, Ward

Associate Professors: Kennedy, McTavish, Reynolds, Spitzer

Assistant Professors: Aldrich, R. Anderson, Burt, M. Carter, Fine, Galaskiewicz, Grasmick, Lauderdale, McLaughlin, Mortimer, Patton, Sykes

Sociology is a research-oriented social science that considers fundamental patterns of social life. Its study, developing broad understanding of human behavior and systematic analysis from a sociological perspective, can contribute to careers in the social services, evaluation research of public programs and policies, criminal justice, law, health, social research, teaching, and advanced study in the social sciences.

B.A. MAJOR SEQUENCE

Major Requirements—3505, 3506

3801, 3802, 3803 (should be taken soph yr)

5305 or 5701 or 5705 or 5711

16 additional 3xxx or 5xxx sociology cr (3970, 5970, and 3980 are not to be included unless teacher grants approval)

Information regarding sociology course offerings, major requirements, and degree options can be obtained from the undergraduate major adviser, 80 Wilson Library.

General Education—1001 and 1002 deal with broad sociological analysis of American social life; 1960 offers intensive consideration of more limited aspects of society. Courses at the 3xxx and 5xxx levels focus on social service, criminal justice studies, social research, graduate study in social science, preprofessional study (law and health fields), and general sociological education.

Generic Courses

1001f,w,s. INTRODUCTION TO SOCIOLOGY. (4 cr)

The main fields of sociology and current social problems. GrC

1001H. HONORS COURSE: INTRODUCTION TO SOCIOLOGY. (4 cr)

For description, see 1001. GrC

1002f,w,s. AMERICAN COMMUNITY. (4 cr) Cooperman, Kennedy, Martindale

Sociological analysis of modern American society. Distribution of population, urban-rural differences, social factors in business systems, occupational groups, determination of social status, minority group adjustment. GrC

3505f,w. PRINCIPLES OF SOCIAL ORGANIZATIONS. (5 cr; prereq 1001 and 3801 or equiv)

Aldrich, Hall, Mortimer

Basic concepts, substantive materials, and general issues in the area of social organization. GrC

3506w,s. PRINCIPLES OF SOCIAL PSYCHOLOGY. (5 cr; prereq 1001 and 3801 or equiv) R

Anderson, Lauderdale, Stone

Ideas and findings related to social psychology; experience in developing empirically based knowledge in social science. GrC

Criminology and Deviance

3102f,w,s. SOCIOLOGY OF LAW AND SOCIAL CONTROL ORGANIZATIONS. (4 cr; prereq 1001 or equiv) Clark, Lauderdale, Ward

Societal reaction to deviance through law and its implementation by social control organizations such as schools, public and private welfare agencies, and criminal justice, juvenile justice, and mental health systems. Recommended to be taken prior to 3103. GrC

Course Descriptions—Major Sequences

- 3103f,w,s. CRIMINOLOGY.** (4 cr, §3101; prereq 1001 or equiv...3102 recommended) Clark, Finestone, Ward
General survey of field of criminology. GrC
- 5105w. CONTEMPORARY CORRECTIONS.** (4 cr; prereq 3102, 3103 or §...CJS 5101, 5102 recommended) Murton, Ward
Advanced study of correctional organizations such as prisons and jails; probation and parole, department and community corrections. Penal policies and practices in the United States compared with advanced penal systems in other countries. GrC
- 5111f,w,s. SOCIOLOGY OF DEVIANT BEHAVIOR.** (4 cr; prereq 3103 or §) Finestone, Lauderdale
The nature of deviant behavior, the social process associated with the careers of deviants, and the relationship of deviancy to problems of social control. GrC
- 5125. POLICE PROBLEMS AND PRACTICES IN THE UNITED STATES.** (4 cr; prereq 3102, 3103 or §...CJS 5101, 5102 recommended) Clark, Sykes
Personnel, organization, and public relations of police forces; techniques of integrating police work with other community agencies. GrC
- 5135. WHITE COLLAR CRIME.** (4 cr; prereq 3102, 3103 or §...CJS 5101, 5102 recommended) Feld
White collar crime, broadly construed; roots in American society, responses offered by theoreticians and amateur and professional politicians. GrC
- 5138. ISSUES IN THE ADMINISTRATION OF CRIMINAL JUSTICE.** (4 cr; prereq 3102, 3103 or §...CJS 5101, 5102 recommended) Ward
Issues facing police, prosecutors, defense attorneys, courts, and correctional agencies; administration of criminal justice. GrC
- 5141. JUVENILE DELINQUENCY.** (4 cr; prereq 3102, 3103 or §...CJS 5101, 5102 recommended) Clark, Feld, Finestone, Murton
Advanced study of juvenile delinquency and societal response to it through regulatory agencies; special characteristics of juvenile justice institutions. GrC
- 5147. SOCIOLOGY OF MENTAL HEALTH AND ILLNESS.** (4 cr; prereq 1001 and 3102 or §) Spitzer
Social definitions and origins of mental illness, its epidemiology, patterns of reaction to mental illness, sociological analysis of mental health programs and their effectiveness. Social policy implications of mental health definitions. GrC

Sociology and Religion

- 5151. RELIGION AS A SOCIAL INSTITUTION.** (4 cr; prereq 3505 or 5401 or equiv or §) Johnson, Sykes
Structure and function of religious organizations in various types of societies; nature of religious leadership, type of religious participation; relationship of religion to other social institutions. GrC

Social Psychology

- 5201f,w,s. INTRODUCTION TO SOCIAL PSYCHOLOGY.** (4 cr [no cr for sociology majors], §3506; prereq 8 cr in sociology, anthropology, psychology, political science, or economics) Burt, Lauderdale, Spitzer, Sykes
Research and theory regarding relation of individual social groups. Socialization processes; effects of social interaction and isolation; individual behavior under conditions of social organization and disorganization; cultural influence and its limits. GrC
- 5201H. HONORS COURSE: INTRODUCTION TO SOCIAL PSYCHOLOGY.** (4 cr; prereq §)
For description, see 5201. GrC
- 5205. SYMBOLIC INTERACTION.** (4 cr; prereq 3506 or 5201 or equiv or §) Stone
Methods of acquiring knowledge in social psychology; outstanding examples of research. Social psychology of small groups, mass behavior, making political and economic choices. Current thinking and research in symbolic interaction in light of concepts and theories presented in introductory courses in social psychology. GrC
- 5211. SOCIAL PROCESSES IN SMALL GROUP SETTINGS.** (4 cr; prereq 3506 or 5201 or equiv or §) Reynolds
Small group research and theory focusing on laboratory and nonlaboratory investigation of interpersonal exchange, communication structures, status and power relations, coalition formation, reference groups, role differentiation, group uniformity, social influence, problem-solving behavior. Laboratory arranged. GrC

Social Change and Social Movements

- 5301. SOCIAL MOVEMENTS IN A CHANGING SOCIETY.** (4 cr; prereq 3505 or 5401 or equiv or §)
Factors underlying social change in modern mass society. Recent research on social movements, reform and revolution, culture contact, impact of rapid technological change. Individual and social structures under rapid social change. GrC
- 5305w. SOCIAL LIFE AND CULTURAL CHANGE.** (4 cr; prereq 3505, 3506 or 5201, 5401 or equiv or §) Martindale
Theories of social change; methodological problems. Comparative social thought and structure of antiquity used as basic data for analysis. GrC
- 5311. SOCIOLOGY OF CONFLICT.** (4 cr; prereq 3505 or 5401 or equiv or §) Cooperman
Theoretical, empirical study of group conflict. Methods and models. Animal conflict. Aggression and conflict. Types of conflict: feuds, community, ecologies of urban conflict, racial, internal war, revolution. Conflict and social organization: relation of stratification and of industrial and social change to conflict. GrC
- 5315. LATIN AMERICAN SOCIETIES IN TRANSITION.** (4 cr; prereq 12 cr in sociology, economics, anthropology, or political science or §) Ellenbogen
Relationship of population, technology, and organization structure to levels of modernization among Latin American nations. Differentiation, diffusion, innovation, and social conflict as precipitants of social change. GrC

Popular Culture and Public Opinion

- 5351. SOCIOLOGY OF POPULAR CULTURE.** (4 cr; prereq 16 cr in sociology or §) Stone
Social preconditions and social effects of popular culture. Popular vs. nonpopular culture; selected popular arts. GrC
- 5355. OPINION AND COMMUNICATION: SOCIAL FACTORS.** (4 cr; prereq sr, 3506 or 5201 or equiv or Psy 5201 or §) R Carter
Opinion formation and change in relation to personality and social structure; flow of public communications through society; impact of types of mass communication on audiences. GrC

Social Organization and Social Structure

- 3405. INEQUALITY: INTRODUCTION TO STRATIFICATION.** (4 cr; prereq 1001) M Carter, Nelson
Inequality—causes and consequences. Inequality in American society. Related concepts of class, class cultures, status, aggregates; the social forms of inequality, their consequences for life changes and styles. GrC
- 3415. SOCIETY IN CONSTRUCTION: ISRAEL.** (4 cr; prereq 1001; offered fall 1976 only)
The emergence processes of a society in construction. Historical background; analysis of social structure and processes of the postestablishment society.
- 5401. SOCIAL ORGANIZATIONS.** (4 cr [no cr for sociology majors], §3505; prereq 8 cr in sociology, anthropology, psychology, political science, or economics) Grasmick, Hall, Simmons
Organization and structure of social groups; basic culture patterns of economic, political, and social institutions. Integration and disintegration of social groups and institutions. Social dynamics. GrC
- 5401H. HONORS COURSE: SOCIAL ORGANIZATION.** (4 cr; prereq §) Hall
For description, see 5401. GrC
- 5405. SOCIAL STRATIFICATION AND MOBILITY.** (4 cr; prereq 3405 or 3505 or 5401 or any 3xxx sociology course or equiv or §...some statistics recommended) M Carter, Fulton, Nelson
Form and content of hierarchical arrangements. Relationship of hierarchical arrangements to problems of social order and individual behavior. GrC
- 5405H. HONORS COURSE: SOCIAL STRATIFICATION AND MOBILITY.** (4 cr; prereq §)
For description, see 5405. GrC
- 5411. FORMAL ORGANIZATIONS.** (4 cr; prereq 3505 or 5401 or equiv or 8 cr in sociology, anthropology, psychology, political science, or economics, or §) Aldrich, Hall
Social organizations in contemporary society: reactions to social systems and impact upon them; relationships among formalization and centralization in organizations; the place of power, conflict, leadership, and communications. GrC

Course Descriptions—Major Sequences

- 5411H. HONORS COURSE: FORMAL ORGANIZATIONS.** (4 cr; prereq §) Hall
For description, see 5411. GrC
- 5415. COMPARATIVE SOCIAL ORGANIZATIONS.** (4 cr; prereq 20 cr in sociology, economics, or political science or §) Patton
Demographic and ecological characteristics, stratification systems, institutional organization, and forms of association in several modern nations other than United States. GrC
- 5421. OCCUPATIONAL SOCIOLOGY.** (4 cr; prereq 3405 or 3505 or 3506 or 5201 or 5401 or equiv or §) Hall, Mortimer
Individual motivations and reactions to work; nature of professions and other occupational types; relations between occupational and organizational norms and values, between occupations and social structure—stratification system, family, political system, technological change; changes in composition of labor force. GrC

Family Sociology

- 3501. THE FAMILY SYSTEM.** (4 cr; prereq 1001 or 3505 and 3506 or §) Johnson, McLaughlin, Reiss, Tallman
Evolution of family, development of unity or disunity, roles of family members, methods of investigation. GrC
- 3503. SEX, ROMANCE, AND RELATIONSHIPS.** (4 cr; prereq 1001)
Sociological perspectives on sexual socialization; ideas of masculinity and femininity; history and functions of love and romance; characteristics of romantic relationships, intimacy, emotionality, sexuality, exclusivity; sexual deviance in relation to sexual norms. GrC
- 5505f,w,s. FAMILY DEVELOPMENT.** (5 cr; prereq 1001, 3506 or 5201 or equiv, CPsy 1301 or §) Hill
The natural history of families—how they form, function, and achieve distinctive identities. Developmental growth of children and parents in interaction in seven stages of the family life cycle, from engagement planning to family dissolution. GrC
- 5506. NEW FORMS OF THE FAMILY.** (4 cr; prereq 3501, 3505, 3506 or 5201, 5401 or equiv or §) Reiss
Evolving courtship, marital, and family forms. New concepts of sexuality, masculinity-femininity, familial roles, legitimacy, communal living; perspective on the developing family system. GrC
- 5511. COMPARATIVE FAMILY ORGANIZATION.** (4 cr; prereq 3501, 3505 or 5401 or equiv or §) Hill, Reiss
Family organization and functioning in selected world civilizations. Interrelations of family with economic system and urbanization; family influences on personality formation. GrC

Demography

- 5551f,w. WORLD POPULATION PROBLEMS.** (4 cr; prereq 3505 or 5401 or equiv or §) T Anderson, Kennedy
Population policy, historical and present, in Europe, Asia, other areas: emphasis on United States. Population and power politics. GrC
- 5555s. POPULATION THEORY.** (4 cr; prereq 5551 or §) T Anderson, Kennedy
Cultural and social phases of population change; birth rates, death rates, migration. Implications of population change. GrC
- 5555H. HONORS COURSE: POPULATION THEORY.** (4 cr; prereq §) Kennedy
For description, see 5555. GrC
- 5561. INTRODUCTION TO MATHEMATICAL DEMOGRAPHY.** (4 cr, §PubH 5411; prereq 5551 or §)
Demographic measures and concepts of fertility, mortality, and migration. Stable population methods, demographic estimates from incomplete data. GrC

Urban Sociology

- 3601. URBAN COMMUNITY.** (4 cr; prereq 1001 or 1002) Cooperman
Urban community patterns. Comparison of social interaction in neighborhood, city, and metropolis. Community studies. Urban power structures. Settlement patterns, organization of social life and urban problems. GrC
- 3610. URBAN SOCIAL ORGANIZATION WORKSHOP.** (4 cr; prereq 3505) Aldrich
Structure and process of urban social organization by means of a project focused fieldwork team linking theory to practice through organized field research. GrC

- 5601. URBAN SOCIOLOGY.** (4 cr; prereq 3405 or 3505 or 5401 or equiv or §...some statistics recommended) Aldrich, T Anderson, Cooperman, Stone
Cities, urban ecology, urban institutions and the urban way of life. GrC
- 5605. URBANIZATION AND SOCIAL POLICY.** (4 cr; prereq 5601 or §) Cooperman
"Problematic" contemporary changes in urban processes; responses and policies of public groups. Interrelationships of social, cultural, economic, political factors in development of urban problems. Models of urban systems and social policy formation. Social cost analysis and formation of policy alternatives. GrC

Rural Sociology

- 1651. RURAL SOCIOLOGY.** (4 cr) Donohue
Factual data necessary to understand problems of rural social life. GrC
- 5651. RURAL SOCIAL INSTITUTIONS.** (4 cr; prereq any 3xxx sociology course or equiv or §) Donohue
Factors in the rural environment that condition the functioning of rural social institutions—family, school, church, local government, health, welfare. GrC
- 5661. RURAL COMMUNITY ANALYSIS.** (4 cr; prereq any 3xxx sociology course or equiv or §) Donohue
Tools, techniques, and methods of making community field studies. GrC
- 5671. COMPARATIVE RURAL SOCIETIES: LATIN AMERICA.** (4 cr; prereq 12 cr in sociology, anthropology, economics, or political science, or §) Ellenbogen
Social and cultural change in Latin America. Demographic and ecological characteristics, institutional structure and its accompanying associations; linkages with "outside" and "world view." GrC
- 5675. WORLD FOOD SUPPLY PROBLEMS.** (4 cr, §AgEc 5790, §HE 5381, §PIPa 5220, §VCS 5280; prereq major in agriculture, veterinary medicine, nutritional sciences, social science field, or §...grad students by Δ only) Ellenbogen
Multidisciplinary approach to social, economic, and technical problems of feeding the world's growing population. Principles from social and economic sciences. The plant, animal, and nutritional sciences and their application to food problems. GrC

Social Theory

- 5701f. ANALYTICAL SOCIAL THEORY.** (4 cr; prereq 3505, 3506 or 5201, 5401 or equiv or §) Martindale
Major problems of sociological theory; main types: positivistic, rationalistic, idealistic; major theoretical concepts. GrC
- 5705. BACKGROUNDS OF MODERN SOCIAL THOUGHT.** (4 cr; prereq 3505, 3506 or 5201, 5401 or equiv or §) Martindale, Cooperman
Major trends of social thought from Renaissance to 19th century; origins of sociology. GrC
- 5711. ELEMENTS OF SOCIOLOGICAL ANALYSIS.** (4 cr; prereq 3505, 3506 or 5201, 5401 or equiv or §) Reynolds
Premises upon which social theories are developed. Construction of social theory. GrC

Sociology of Political and Legal Institutions

- 5755. SOCIAL STRUCTURE AND POLITICAL BEHAVIOR.** (4 cr; prereq 3505 or 5401 or equiv or §) Tallman
Structural and ideological conditions influencing the legitimation of political institutions; relationships to political participation, political apathy, and the rise of mass movements. GrC

Methodology

- 3801f,w. SOCIOLOGICAL METHODS I: DESCRIPTIVE STATISTICS.** (5 cr; prereq basic algebra or Math 0009; 2 hrs lect, two 1-hr labs) M Carter, Grasmick
Descriptive statistics in analysis of sociological data, measures of central tendency, deviation, correlation and regression graphs, simple treatment of three and four variables, probability. GrA
- 3801Hf,w. HONORS COURSE: SOCIOLOGICAL METHODS I: DESCRIPTIVE STATISTICS.** (5 cr; prereq basic algebra or Math 0009, §) M Carter
Students attend 3801 lectures plus two 1-hour labs a week. GrA

Course Descriptions—Major Sequences

- 3802w,s. SOCIOLOGICAL METHODS II: STATISTICAL INFERENCE.** (5 cr; prereq 3801 or equiv or §; 2 hrs lect, two 1-hr labs) M Carter
Statistical inferences, probability, hypothesis tests, use of statistical reasoning in analysis of sociological data. GrA
- 3802Hw,s. HONORS COURSE: SOCIOLOGICAL METHODS II: STATISTICAL INFERENCE.** (5 cr; prereq 3801H or equiv or §) M Carter
Students attend 3802 lectures plus two 1-hour labs a week. GrA
- 3803f,s. SOCIOLOGICAL METHODS III: RESEARCH METHODS.** (5 cr; prereq 3801 and 3802 or equiv or §) M Carter, McLaughlin
Data collection methods; advantages and limitations of major methods when applied to specific types of problems. GrA
- 3811. COMPUTER PROGRAMMING FOR SOCIAL STATISTICS.** (1 cr; S-N only; prereq 3801 or ¶3801)
Elementary computer programming for social statistics applications. Use of a statistical program package for analysis of sociological data.
- 5801. COMPUTER USAGE IN SOCIAL RESEARCH.** (4 cr; prereq 3801, 3802, 3803 or equiv recommended; 3 hrs lect, 2 hrs lab) R Anderson
Basic concepts of information processing for social science research; elementary computer programming; practice in the use of computers for data analysis in social science; problems of computer usage in sociology. GrA
- 5821. EVALUATION RESEARCH.** (4 cr; prereq 3801, 3802, 3803, or §) Patton
Evaluation methodology, steps in conducting evaluations of education and social action programs; special problems in evaluation research; differences between evaluation research and basic research. Preparation of students to conduct evaluation research. GrC

Sociology of Health and Health Care

- 5855f,s. SOCIOLOGY OF MEDICINE AND MEDICAL INSTITUTIONS.** (4 cr; prereq 3505, 3506 or 5201, 5401 or equiv or §) Litman
Social factors associated with incidence of physical and mental illness and treatment. Social organization of medical institutions. Public needs and medical services. Sociology of aging, social problems of the aged. GrC

Other Courses

- 1960. TOPICS IN SOCIOLOGY.** (4 cr per qtr; prereq 1001)
Specific topics listed in *Class Schedule*.
- 3960. SOCIOLOGY HONORS THESIS.** (1-8 cr per qtr; prereq jr or sr sociology honors student)
Writing honors thesis.
- 3961. JUNIOR HONORS SEMINAR.** (1 cr; S-N only; prereq jr sociology honors student or §)
Contemporary issues in sociological research. Initiation of the honors thesis. Advanced study and career opportunities in sociology; special learning opportunities for honors majors.
- 3970f,w,s. DIRECTED STUDIES.** (1-15 cr per qtr; prereq §)
Guided individual reading or study.
- 3980f,w,s. DIRECTED INSTRUCTION.** (1-5 cr per qtr [8 cr max for degree]; prereq §)
Students, in consultation with faculty members, lead discussion and/or project groups in classes they have taken for credit.
- 5951. MINORITY GROUP RELATIONS.** (4 cr; prereq 3505, 3506 or 5201, 5401 or equiv or §) M Carter, Sykes
Systems of ethnic stratification; race relations in American society. GrC
- 5952. YOUTH IN MODERN SOCIETY.** (4 cr, §Hed 5125; prereq 3405 or 3505 or 3506 or 5201 or 5401 or 5933 or equiv or §) Clark, Mortimer
Youth in advanced societies; youth as a social entity; functions of youth in industrial societies; roles in family, education, politics and government, economy and work, welfare and religion; youth organizations, social movements and subcultures; empirical research and cross-cultural perspectives. GrC
- 5953. SOCIOLOGY OF EDUCATION.** (4 cr, §Hed 5190; prereq 3505, 3506 or 5201, 5401 or equiv or §) Clark, Weidman
Advanced studies. School as socialization process, social structure of education, role of school in social change, other areas. Theory and empirical research. GrC

- 5954. WOMEN AND MEN IN THE UNITED STATES TODAY.** (4 cr; prereq 3405 or 3503 or 3505 or 3506 or 5201 or 5401 or equiv or #) McLaughlin, Mortimer
Sociological analysis of position of women vis-à-vis men in United States; changes that have led to current situation; changes in society to adjust to sex role changes. GrC
- 5956. SOCIOLOGY OF DEATH.** (4 cr; prereq jr or sr, 8 cr in sociology or #) Fulton
Issues and problems that mortality presents in contemporary society. GrC
- 5957. SOCIOLOGY OF AGING.** (4 cr; prereq 3505, 3506 or 5201, 5401 or equiv or #) McTavish
Situations and problems facing aging people in modern societies; devices developed or possible to meet such situations and problems. GrC
- 5958. SOCIOLOGY OF HIGHER EDUCATION.** (4 cr, §HEd 5192; prereq HEd 5190 or Soc 5953) Weidman
Social aspects of higher education: socialization of students, comparative institutional organization, role structure, others. Theory and empirical research. GrC
- 5960. TOPICS IN SOCIOLOGY.** (4 cr per qtr)
Topics listed in the *Class Schedule*.
- 5961-5962. SENIOR HONORS SEMINAR.** (4 cr per qtr; prereq sr honors sociology major)
Preparation and discussion of honors papers.
- 5970. DIRECTED STUDIES.** (1-15 cr per qtr; prereq #)
Guided individual reading or study.

South Asian Studies

Staff—Chairman, M. A. R. Barker, 194 Klaeber Court; *Director of Undergraduate Studies*, Paul Staneslow, 186 Klaeber Court

Professors: Barker, Kopf, Rowe, Schwartzberg, Tapp

Associate Professors: Asher, Blue, Munda, Scholberg

Assistant Professors: Bashiri, Junghare, Lelyveld, Malandra, Miranda, Staneslow

Instructors: Bari, Salam

Programs of the Department of South Asian Studies focus on the languages, literatures, cultural traditions, and contemporary problems of India, Pakistan, and Bangladesh. A brochure describing these programs may be obtained from the Department of South Asian Studies, 192 Klaeber Court.

B.A. MAJOR SEQUENCE—Language and Literature Option

Major Requirements—3 yrs of a South Asian language or demonstration of competence at corresponding level

12 cr in 3xxx-5xxx courses in South Asian literature (original language or translation), at least 8 of them in 5xxx courses (study of literature as part of the third year of a language course may not be included)

20 or more cr in courses on South Asia, of which at least 8 cr are in 5xxx courses and at least one course is from the social sciences

B.A. MAJOR SEQUENCE—Civilization Option

Required Preparatory Courses—Indc 3501, 3502, 1506, or equiv courses

Major Requirements—2 yrs of a South Asian language or demonstration of competence at corresponding level

8 cr in 3xxx-5xxx courses in South Asian literature (original language or translation), at least 4 of them in 5xxx courses

16 cr in 3xxx-5xxx humanistic courses on South Asia other than Indc 3501, 3502, in at least two disciplines, at least 12 of them in 5xxx courses

4 cr in a 3xxx or 5xxx social science course on South Asia

Course Descriptions—Major Sequences

B.A. MAJOR SEQUENCE—Contemporary Problems Option

Required Preparatory Courses—Indc 3501, 3502, 1506, or equiv courses

Major Requirements—2 yrs of a South Asian language or demonstration of competence at corresponding level

20 cr in 3xxx-5xxx social science courses on South Asia in at least two disciplines, at least 16 of them in 5xxx courses

8 cr in 3xxx-5xxx humanistic courses on South Asia

General Education—Courses under the heading "Indic," given in English translation, are suitable for nonmajors.

BENGALI (Ben)

Bengali, spoken by more than 100,000,000 South Asians, is the national language of Bangladesh.

1101f-1102w-1103s. BEGINNING BENGALI. (5 cr per qtr, \$5101-5102-5103) Bari GrA

3031f-3032w-3033s. INTERMEDIATE BENGALI. (5 cr per qtr, \$5131-5132-5133; prereq 1103 or \$) Bari GrA

5101f-5102w-5103s. BEGINNING BENGALI. (5 cr per qtr, \$1101-1102-1103) Bari GrA

5131f-5132w-5133s. INTERMEDIATE BENGALI. (5 cr per qtr, \$3031-3032-3033; prereq 1103 or 5103 or \$) Bari GrA

5161f-5162w-5163s. ADVANCED BENGALI. (4 cr per qtr; prereq 3033 or 5133 or \$) Bari GrA

5201f-5202w-5203s. READING AND ANALYSIS OF BENGALI LITERARY TEXTS. (4 cr per qtr; prereq 5163) Bari

Major Bengali poets and novelists. GrD

5970. DIRECTED STUDIES. (Cr ar; prereq \$) Staff
Guided individual reading or study.

5990. DIRECTED RESEARCH. (Cr ar; prereq \$) Staff

HINDI (Hndi)

Hindi, the language of 180,000,000 people in South Asia, is considered of pan-Indian significance.

1101f-1102w-1103s. BEGINNING HINDI. (5 cr per qtr, \$5101-5102-5103) Staneslow GrA

3031f-3032w-3033s. INTERMEDIATE HINDI. (5 cr per qtr, \$5131-5132-5133; prereq 1103 or \$) Salam, Staneslow GrA

5101f-5102w-5103s. BEGINNING HINDI. (5 cr per qtr, \$1101-1102-1103) Staneslow GrA

5131f-5132w-5133s. INTERMEDIATE HINDI. (5 cr per qtr, \$3031-3032-3033; prereq 1103 or 5103 or \$) Salam, Staneslow GrA

5161f-5162w-5163s. ADVANCED HINDI. (4 cr per qtr; prereq 3033 or 5133 or \$) Munda GrA

5201f-5202w-5203s. READING AND ANALYSIS OF HINDI LITERARY TEXTS. (4 cr per qtr; prereq 5163) Munda, Junghare

Major Hindi writers. GrD

5710. TOPICS IN HINDI LANGUAGE AND LITERATURE. (5 cr per qtr; prereq \$ for nonmajors)
Staneslow

Topics in the linguistic structure of Hindi or Hindi literature.

5970. DIRECTED STUDIES. (Cr ar; prereq \$) Staff
Guided individual reading or study.

5990. DIRECTED RESEARCH. (Cr ar; prereq \$) Staff

INDIC (Indc)

These courses deal in English with aspects of the Indian civilization.

- 1001. INTRODUCTION TO SOUTH ASIAN LANGUAGES.** (4 cr, \$5001) Junghare
Language families in South Asia; distribution, literatures, special features. Historical and structural relationships. GrA
- 1201f. ANCIENT INDIAN LITERATURE IN TRANSLATION.** (4 cr, \$5201) Munda GrD
- 1202w. MODERN INDIAN LITERATURE IN TRANSLATION.** (4 cr, \$5202) Munda GrD
- 1203s. COMPARATIVE INDIAN LITERATURE IN TRANSLATION.** (4 cr, \$5203) Munda GrD
- 1504. INTRODUCTION TO THE RELIGIONS OF SOUTH AND SOUTHEAST ASIA.** (4 cr, \$RelS 1031) Staff GrC
- 1506s. INTRODUCTION TO CONTEMPORARY SOUTH ASIA.** (5 cr, \$3506) Schwartzberg
Land, people, modern historical development, contemporary problems, global setting, and future outlook of South Asia. GrC
- 3411. INTRODUCTION TO INDIAN PHILOSOPHY.** (4 cr, \$5411) Junghare
Major concepts; principal schools of Indian philosophy; traditional and contemporary views. GrC
- 3501, 3502. SURVEY OF INDIAN CIVILIZATION.** (5 cr per qtr) Staff
Contemporary civilization in light of its development. Social, cultural, economic, and political life. Hindu, Muslim, and Buddhist contributions. GrC
- 3506s. INTRODUCTION TO CONTEMPORARY SOUTH ASIA.** (5 cr, \$1506; 3502 recommended) Schwartzberg GrC
- 3507. SOUTH ASIA IN WORLD AFFAIRS.** (4 cr) Staff
The role and experiences in the world arena of India, Pakistan, and Bangladesh. GrC
- 3533. HISTORY OF HINDUSTANI CULTURE.** (4 cr, \$5533) Lelyveld
The cultural system of urban north India since the 16th century. Styles, symbols, and ideologies of Hindustan (India's Hindi-Urdu region). Social structure, religion, languages and literature, music and art. GrC
- 5001. INTRODUCTION TO SOUTH ASIAN LANGUAGES.** (4 cr, \$1001) Junghare GrA
- 5011. INDO-ARYAN LINGUISTICS.** (4 cr; prereq 5001 or \$) Junghare, Miranda
Phonological, morphological, and syntactic developments: Indo-European, Old Indo-Aryan, Middle Indo-Aryan, Hindi, and other major modern Indo-Aryan languages. GrA
- 5090. INSTRUCTION IN A SOUTH ASIAN LANGUAGE.** (5 cr per qtr; prereq \$) Staff
Instruction in a South Asian language not regularly offered. GrA
- 5201f. ANCIENT INDIAN LITERATURE IN TRANSLATION.** (4 cr, \$1201) Munda GrD
- 5202w. MODERN INDIAN LITERATURE IN TRANSLATION.** (4 cr, \$1202) Munda GrD
- 5203s. COMPARATIVE INDIAN LITERATURE IN TRANSLATION.** (4 cr, \$1203) Munda GrD
- 5411. INTRODUCTION TO INDIAN PHILOSOPHY.** (4 cr, \$3411) Junghare GrC
- 5491. HISTORY OF BANGLADESH.** (4 cr, \$Hist 5491; prereq some course work in history of South Asia) Kopf
History of the linguistic and cultural unit Bengal from the 4th century B.C. to the creation of Bangladesh in 1972. GrC
- 5501. PROBLEMS OF INDIAN PHILOSOPHY.** (4 cr, \$Phil 5801; prereq 5 cr of philosophy and one India course or \$)
- 5503. VEDANTA PHILOSOPHY.** (4 cr, \$Phil 5803; prereq Phil 5501 or \$)
- 5504. INDIAN BUDDHIST THOUGHT.** (4 cr, \$Phil 5804; prereq 5501 or \$)
- 5506. CONTEMPORARY INDIAN THOUGHT.** (4 cr, \$Phil 5806; prereq 5501 or \$)
- 5508. INTRODUCTION TO ISLAM IN SOUTH ASIA.** (4 cr)
Advent of Islam in South Asia; popular and speculative mysticism, mystical doctrine and practice; sects; premodern and modern reform movements; culture: literature, architecture, and painting. GrC
- 5510. PROBLEMS IN INDIAN CIVILIZATION.** (4 cr per qtr; prereq course work in Indian civilization or \$)
Topics or problems chosen to suit interested students. GrC

Course Descriptions—Major Sequences

- 5511-5512. THE RELIGIONS OF INDIA.** (4 cr per qtr)
Major religious traditions of India. Historical development of schools and sects. Contemporary situations. GrC
- 5520. STUDIES IN THE RELIGIONS OF INDIA.** (Cr ar; prereq 5512 or #)
Topics in India's religious history. GrC
- 5530. TOPICS ON INDIAN CIVILIZATION.** (4 cr per qtr [12 cr max]; prereq secondary school teachers and #; summer only)
The traditional culture; current developments in the subcontinent. Development of a curriculum at the secondary school level. GrC
- 5531-5532. CULTURAL HISTORY OF NORTH INDIA, 1000-1707.** (4 cr per qtr; prereq course in Indian civilization, medieval Indian history, or #)
India in the Muslim period. Developments in Indian Islam. Analysis of such syncretic movements as Sikhism. GrC
- 5533. HISTORY OF HINDUSTANI CULTURE.** (4 cr, §3533) Lelyveld GrC
- 5535. TRIBAL PEOPLES AND CULTURES OF SOUTH ASIA.** (5 cr; 1203, 1504, 1506, 3501, 3506, or Anth 5261 recommended; offered when feasible) Gross, Munda
Major populations; social and political organization of tribal groups; social change and effects of contact with Hindu caste society; world view of tribal groups as expressed in literature and religious symbolism. GrC
- 5710. SEMINAR IN SOUTH ASIAN LANGUAGES AND LITERATURES.** (Cr ar; prereq #) Staff
- 5970. DIRECTED STUDIES.** (Cr ar; prereq #) Staff
Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (Cr ar; prereq #) Staff

MARATHI (Mar)

Marathi is spoken by 50,000,000 people in India.

- 1101f-1102w-1103s. BEGINNING MARATHI.** (5 cr per qtr, §5101-5102-5103) Junghare GrA
- 3031f-3032w-3033s. INTERMEDIATE MARATHI.** (5 cr per qtr, §5131-5132-5133; prereq 1103 or #) Junghare GrA
- 5101f-5102w-5103s. BEGINNING MARATHI.** (5 cr per qtr, §1101-1102-1103) Junghare GrA
- 5131f-5132w-5133s. INTERMEDIATE MARATHI.** (5 cr per qtr, §3031-3032-3033; prereq 1103 or 5103 or #) Junghare GrA
- 5161f-5162w-5163s. ADVANCED MARATHI.** (4 cr per qtr; prereq 3033 or 5133 or #) Junghare GrA
- 5201f-5202w-5203s. READING AND ANALYSIS OF MARATHI LITERARY TEXTS.** (4 cr per qtr; prereq 5163) Junghare GrD
- 5970. DIRECTED STUDIES.** (Cr ar; prereq #) Staff
Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (Cr ar; prereq #) Staff

SANSKRIT (Skt)

Sanskrit, a major classical language, is the linguistic source of modern North Indian languages and a powerful influence on the South Indian languages.

- 1201f-1202w-1203s. BEGINNING SANSKRIT.** (5 cr per qtr, §5201-5202-5203) Malandra GrA
- 5131f-5132w-5133s. INTERMEDIATE SANSKRIT.** (5 cr per qtr; prereq 1203 or 5203) Malandra GrA
- 5161f-5162w-5163s. ADVANCED SANSKRIT.** (4 cr per qtr; prereq 5133) Munda GrA
- 5201f-5202w-5203s. BEGINNING SANSKRIT.** (5 cr per qtr, §1201-1202-1203) Malandra GrA
- 5320. READINGS IN PHILOSOPHICAL TEXTS.** (4 cr per qtr; prereq 5133) Staff
Readings in representative text material. GrD

- 5490. STUDIES IN SANSKRIT LITERATURE.** (4 cr per qtr; prereq 5163 or §) Staff GrD
- 5701. VEDIC LITERATURE.** (4 cr; prereq 5133 or §) Staff
Readings in Vedic literature: the Samhitas, Brahmanas, and Upanishads; the Rigveda. Selections of readings vary. GrA
- 5710. TOPICS IN SANSKRIT LANGUAGE AND LITERATURE.** (5 cr per qtr) Junghare, Malandra, Munda
The linguistic structure of Sanskrit or Sanskrit literature. Topics vary from quarter to quarter.
- 5970. DIRECTED STUDIES.** (Cr ar; prereq §) Staff
Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (Cr ar; prereq §) Staff

URDU

The Urdu language, spoken by some 60,000,000 people, is the form of Hindi that emerged primarily among the Muslims in India.

- 3031f-3032w-3033s. INTERMEDIATE URDU.** (5 cr per qtr, §5131-5132-5133; prereq Hindi 1103 or §) Barker GrA
- 5131f-5132w-5133s. INTERMEDIATE URDU.** (5 cr per qtr, §3031-3032-3033; prereq Hindi 1103 or 5103 or §) Barker GrA
- 5161f-5162w-5163s. ADVANCED URDU.** (4 cr per qtr; prereq 3033 or 5133 or §) Barker, Salam GrA
- 5201f-5202w-5203s. READINGS: URDU TEXTS.** (4 cr per qtr; prereq 5163 or §) Barker GrA
- 5970. DIRECTED STUDIES.** (Cr ar; prereq §) Staff
Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (Cr ar; prereq §) Staff

Spanish and Portuguese

Staff—*Chairman*, Arturo Madrid, 4 Folwell Hall

Professors: Floripe, Hamilton, Narvaez, Vidal, Zahareas (on leave fall 1976, winter 1977)

Associate Professors: Grimes, Jones, Mantini, Ramos, Sousa (on leave fall 1976, winter 1977), Spadaccini, Sullivan (on leave 1976-77)

Assistant Professor: Rodriguez

Instructor: Baker

The department's undergraduate major programs are designed to provide the communication skills, information and materials, and analytical and critical methodology needed to explore Hispanic, Hispano-American, and Luso-Brazilian cultural traditions. Their broad range of approaches emphasizes the application of language skills to aspects of daily life, to intellectual endeavor, and to meeting the problems of society.

Course sequences emphasize four areas: (1) oral and written language fluency, (2) theoretical linguistic and language variations and dialects, (3) representative literature analyzed as artistic achievement and as cultural expression within a sociopolitical context, and (4) civilizations and cultures of areas in which Spanish or Portuguese is spoken.

Study programs in Spain, Mexico, and Costa Rica offer special learning opportunities. Information about advising services, student participation in decision making and the Undergraduate Student Association, and cultural opportunities can be obtained at the department office, 4 Folwell Hall, and from a brochure available there.

Course Descriptions—Major Sequences

SPANISH (Span)

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1101-1102-1103-1104 or 1301-1302, 1105, 3014; or equiv

Major Requirements—18 cr to include 3021, 3104, 3501 or 3502 or 3512, 3910 or 3730 or 3940

26 elective 3xxx or 5xxx Spanish cr

Grades of C or better, all on A-N, are required in all major courses. At least three major courses must be taken on the Twin Cities Campus. Not acceptable for major credit: 3014, 3615; SpPt 3980; more than 8 cr in 3730, 3910, or 3940; credit received in community tutorial programs or in courses taught in English.

For requirements for a teacher's certificate, see the *College of Education Bulletin*.

General Education—Courses taught in English offer a broad selection of approaches to the literature, civilization, and culture of the Hispanic world. General interest courses (which may be used to meet the Route II language requirement) are 1501, 1502, 1503, 3601, 3602, 3605, 3610, 3614, Port 3603.

1101-1102-1103. BEGINNING SPANISH; ORAL APPROACH. (5 cr per qtr; students with 1 yr high school Spanish may take 1102...those with 2 yrs may take 1103)

Speaking and understanding Spanish; pronunciation; writing and reading skills; grammar; cultural aspects of language and civilizations of Spain and Spanish America. GrA

1104. INTERMEDIATE SPANISH, ORAL APPROACH: INTERPRETATION OF MODERN PROBLEMS. (4 cr; prereq 1103 or 3 yrs high school Spanish)

Speaking and comprehension; development of reading and writing skills based on materials from Spain and Spanish America. Grammar review; compositions and oral presentations. GrA

1105. INTERMEDIATE SPANISH, ORAL APPROACH: DISCUSSIONS OF MODERN LITERATURE AND THE PRESS. (4 cr; prereq 1104 or 4 yrs high school Spanish)

See description of 1104. GrA

1301-1302. INTENSIVE SPANISH. (10 cr per qtr; prereq personal interview and Δ)

Accelerated approach to understanding, speaking, reading, and writing Spanish. Audiovisual aids, small group activities, intensive laboratory work. For highly motivated students who desire maximum fluency in 2 quarters. GrA

1501. CULTURE, CIVILIZATION OF SPAIN, PORTUGAL: THE ROOTS OF MODERN SPAIN, PORTUGAL. (4 cr)

The cultural evolution of Iberian civilization from its origins to the present. Recurring artistic and intellectual problems. Taught in English. GrD

1502. CULTURE, CIVILIZATION OF LATIN AMERICA: INDIAN, EUROPEAN-COLONIAL, AFRICAN ROOTS. (4 cr)

Cultural manifestations and societal changes in the New World. Major pre-Colombian societies, Spanish and Portuguese conquest of America, colonial life through the 18th century. Taught in English. GrD

1503. CULTURE, CIVILIZATION OF MODERN LATIN AMERICA: SOCIETIES IN CHANGE. (4 cr)

Cultural implications arising from struggles for political and economic independence during the 19th and 20th centuries. Cultural characteristics of principal regions of contemporary Latin America. Causes of developmental differences. Taught in English. GrD

3001. SPANISH PRONUNCIATION: STANDARD, COLLOQUIAL, DIALECTAL. (2 cr; prereq 1105 or Φ)

Contemporary standard Spanish pronunciation; listening and imitation exercises; progress recordings, private interviews. Local, regional, and social variants of the language in Spain and Spanish America. GrA

3014. SPANISH COMPOSITION AND COMMUNICATION SKILLS: EVERYDAY SPEECH, ARGOT, DIALOGUE. (5 cr; prereq 1105 or Φ)

Speaking and writing skills with aid of native speakers; cultural comparisons, current events, topics of concern to Spanish and American students; grammar review; writing workshops. GrA

- 3021. ADVANCED COMPOSITION, COMMUNICATION SKILLS: POLISHING SPEECH, WRITING SKILLS.** (5 cr; prereq 3014 or §)
 Oral and written expression in Spanish. Works of outstanding Spanish and Spanish-American authors serve as models for weekly compositions. GrA
- 3104. THE ART OF READING LITERARY TEXTS.** (4 cr, §SpPt 3104; prereq 1105 or §)
 Critical reading of Spanish and Spanish-American texts; works representing principal genres—novel, drama, poetry, essay; diverse approaches to literature. Terminology of criticism, literary problems and techniques. GrD
- 3211. SPANISH LITERATURE: ASPECTS OF PROSE AND FICTION.** (4 cr; prereq 3104 or SpPt 3104)
 Representative novels and essays from the Golden Age to modern times: the picaresque novel, the short novella of Cervantes, Gracián, historical and "costumbrista" prose, realism, surrealism, existentialism. GrD
- 3212. SPANISH LITERATURE: ASPECTS OF POETRY.** (4 cr; prereq 3104 or SpPt 3104)
 Poetry of various periods: medieval romance and epic poems, goliardic verse, ballads, love sonnets, mystical poetry, 19th-century romantic verse, modern surrealist and imagist works. GrD
- 3213. SPANISH LITERATURE: ASPECTS OF DRAMA.** (4 cr; prereq 3104 or SpPt 3104)
 The theory and practice of drama as reflected in tragedy, comedy, historical plays, farce, and religious drama. GrD
- 3251. SPANISH-AMERICAN LITERATURE: ASPECTS OF PROSE AND FICTION.** (4 cr; prereq 3104 or SpPt 3104)
 Clusters of representative works. Trends, themes, and structures from colonial times to the present. Historical comprehension of Spanish-American society through prose fiction. GrD
- 3252. SPANISH-AMERICAN LITERATURE: ASPECTS OF POETRY.** (4 cr; prereq 3104 or SpPt 3104)
 National and international literary, social, and political movements as reflected in Spanish-American poetry. Major 20th-century poets such as Vallejo, Neruda, N. Guillén, and Paz. GrD
- 3253. SPANISH-AMERICAN LITERATURE: ASPECTS OF DRAMA.** (4 cr; prereq 3104 or SpPt 3104)
 Spanish-American national drama from the 19th century to the present. Aesthetic trends and problems in relation to society. GrD
- 3501. SPANISH CIVILIZATION: ROOTS OF MODERN SPAIN AND LATIN AMERICA.** (5 cr; prereq 3014)
 Spain and Latin America up to the early 19th century. GrD
- 3502. SPANISH CIVILIZATION: MODERN SPAIN.** (5 cr; prereq 3014)
 Evolution of Spanish culture from the beginnings of the new regime to the present. Conflicts between traditionalism and liberalism; Spanish artists' and intellectuals' view of Spain in the light of these conflicts. GrD
- 3512. SPANISH-AMERICAN CIVILIZATION: MODERN LATIN AMERICA.** (5 cr; prereq 3014)
 Spanish-American civilization from 1800 to the present. Impact of independence movements on literature, art, and music. Relationship between political development and cultural phenomena in the 19th and 20th centuries. Popular culture. Folklore and the oral tradition (ballads, corridos, folk tales, the lyric, others). The impact of 20th-century ideologies and technology on cultural development in Spanish American republics. GrD
- 3601. SPANISH AMERICA: REVOLUTION AND THE NEW LITERARY CONSCIOUSNESS.** (4 cr)
 Avant-garde movements in the fiction of the Latin American continent; correspondence to revolutionary trends in Spanish speaking countries. Famous novels. Taught in English. GrD
- 3602. THE PICARESQUE WAY OF LIFE IN SPAIN AND EUROPE: LITERATURE AND THE DELINQUENT.** (4 cr)
 The picaresque novel: Spanish origins (16th century), zenith (17th century), and evolution to the present day. Literary and sociological examination of picaresque novels; modern directions. Taught in English. GrD
- 3605. POLITICS IN SPANISH AND LATIN AMERICAN LITERATURE.** (4 cr)
 The civil wars in Spain; national liberation movements and political upheavals in Latin America. Taught in English. GrD
- 3610. TOPICS: SPANISH, SPANISH-AMERICAN LITERATURE IN TRANSLATION.** (4 cr per qtr [12 cr max])
 Hispanic and/or Latin-American groups of writers, universal themes, literary motifs, relationships between literature and other disciplines. Topics specified in the *Class Schedule*. Taught in English. GrD

Course Descriptions—Major Sequences

- 3614. DON QUIJOTE: A STUDY OF LOST ILLUSIONS.** (4 cr)
Study of the novel in many facets: the "madness" of its characters, the relation of their actions and attitudes to the theme of reality/illusion and to the society of their times. Taught in English. GrD
- 3615. LITERATURE AND FILM.** (5 cr; may not be used for Spanish or Portuguese major credit)
Artistic techniques and social content in literature and cinema of Spanish- and Portuguese-speaking worlds. GrD
- 3721. ORIGINS AND HISTORY OF SPANISH AND PORTUGUESE.** (4 cr, \$Port 3721; prereq 3014 or Port 3014)
Principal stages in the growth and development of the languages and their role as expression of specific cultures. Concepts and methodology of Iberian historical linguistics. GrA
- 3730. TOPICS IN HISPANIC LINGUISTICS.** (4 cr per qtr [12 cr max]; prereq 3104 or SpPt 3104)
Topics specified in the *Class Schedule*. (See departmental list of sample topics). Problems in Hispanic linguistics: regional and social dialects of Spain and Spanish America; translation; structuralism; stylistics; linguistics and literary analysis; the taboo; political terminology. GrA
- 3910. TOPICS IN SPANISH AND SPANISH-AMERICAN LITERATURE.** (4 cr per qtr [12 cr max]; prereq 3104 or SpPt 3104 or Δ)
Topics specified in the *Class Schedule*. (See departmental list of sample topics). Major issues in the study of Spanish or Spanish-American literature; focus on central themes related to important groups of writers, literary movements, trends, critical approaches, and methods. GrD
- 3940. FIGURES IN SPANISH AND SPANISH-AMERICAN LITERATURE.** (4 cr per qtr [12 cr max]; prereq 3104 or SpPt 3104 or Δ)
Figures specified in the *Class Schedule*. (See departmental list of figures). One major Spanish or Latin-American writer or group of writers whose work has had impact on thought, literature, or social problems. GrD
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq Δ)
Guided individual reading or study.
- 5011. SPANISH STYLISTICS.** (4 cr; prereq 3021 or equiv)
Linguistic analysis of writing styles in standard and dialectal Spanish: descriptions, biographies, letters, articles for publication, dialogues, others. GrA
- 5012. ADVANCED PROBLEMS IN THE SPANISH LANGUAGE.** (4 cr; prereq 3021 or Φ)
Problematic aspects of Spanish pronunciation, grammar, and idiomatic expressions for advanced speakers of Spanish as a second language. Polish acquired through supervised contact with beginning and intermediate students of the Spanish language. Also for students whose primary language is Spanish. GrA
- 5015. METHODS OF TRANSLATION.** (4 cr; prereq 3021 or Φ)
Meaning, use, and theories of translation. Techniques and problems of translation from Spanish and Portuguese to English and from English to Spanish and Portuguese. Translation patterns, use of special vocabularies and other adjuncts needed to understand both languages. Practical vocabulary and usage for various fields of work. GrA
- 5211. SPANISH LITERATURE OF 16TH AND 17TH CENTURIES: NOVELISTIC FORMS (CHIVALRIC, MOORISH, PASTORAL, NOVELLA).** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Representative novels of the Golden Age: chivalric, sentimental, celestinesque, pastoral, Moorish, novella, and picaresque—*Amadís*, *Cárcel de amor*, *Diana*, *Abencerraje*, *Lazarillo*, others. Novel in dialogue from *Celestina* to Lope's *Dorotea*. Appraisal of changes. GrD
- 5212. SPANISH LITERATURE OF THE 16TH CENTURY: DRAMA UP TO LOPE DE VEGA.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Important innovators—Encina, Gil Vicente, Torres Naharro, Sánchez de Badajoz, Lope de Rueda, Cristobal de Virués, Juan de la Cueva, Cervantes: their sources, themes, and contributions to dramatic theory and theatrical forms. Studied against background of social and cultural history. GrD
- 5219. THE SPANISH HUMANISTS.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Ideological currents and national sensibility. Ideas and their historical background. Impact of Erasmus; humanists and Vives; revolt, defeat of "comuneros"; Counter-Reformation. "Purity of blood"; old and new Christians. Decline of empire and "arbitristas"; "hidalgos," "picaros." Political moralists; Mariana, Quevedo, Saavedra Fajardo;

- 5221. SPANISH LITERATURE OF THE 17TH CENTURY: THE DRAMA.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Representative playwrights—Lope, Alarcón, Tirso, Calderón—and dramatic forms, especially comedia, tragedy, and “auto sacramental.” Approaches to Golden Age comedia. Themes of honor, purity of blood, country vs. city, free will, others, viewed against literary, cultural, and social history. GrD
- 5223. SPANISH GOLDEN AGE POETRY.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 New Spanish poetry, started by Boscán and Garcilaso and developed by Luis de León, San Juan, and Herrera; new trends by Góngora, Lope de Vega, and Quevedo. Greek, Latin, Italian literary traditions; major lyric genres and ideological lines. Eclogues, lira, mystical verse, satires, “conceptismo” and “culteranismo.” The sonnet. GrD
- 5241. THE 18TH CENTURY: STUDIES IN THE PRINCIPAL WRITERS.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Literary and ideological cross-currents of 18th-century Spain, concentrating on Feijóo, Torres Villarroel, Cadalso, Jovellanos, and Moratín. The essay as a literary form in ideological conflict with traditionalism, especially scientific rationalism and religion. GrD
- 5251. SPANISH LITERATURE: 18TH AND 19TH CENTURIES.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Spain between old regime and new: 1780-1833. Enlightenment, rationalism at its limits and beyond: Goya and Cadalso. Sentiment in the poetry of Meléndez Valdés. High and popular culture: Ramón de la Cruz and García de la Huerta. “Afrancesados” and “Patriotas”: Jovellanos and Cabarrús. Early romantic polemics. The theatre as a form of social organization, Jovellanos to Larra. GrD
- 5252. SPANISH LITERATURE: 19TH CENTURY.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Beginnings and development of “costumbrista” and romantic movements; representative works such as “artículos” of Larra, poetry of Espronceda, romances and plays of Duque de Rivas and Zorrilla, “rimas” and “leyendas” of Bécquer, prose of Fernán Caballero. GrD
- 5271. SPANISH THEATRE IN THE 20TH CENTURY.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Modes of Spanish theatrical expression since Galdós: technical innovations of Benavente; grotesqueries of Valle-Inclán; metaphoric experiments of Lorca and Alberti; existential preoccupations of Unamuno, Buero, and Sastre; grotesque tragedies of Arniches; other smaller genres. GrD
- 5272. THE GENERATION OF 1898.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Major figures between 1895 and 1903—Ganivet, Unamuno, Baroja, Azorín, Valle-Inclán, Machado, J. R. Jiménez, Maeztu, others. Crisis of Restoration Spain (Costa); intellectual, artistic renovations. The break with 19th-century realism and with philosophical rationalism among “modernistas” and “novetayochistas.” GrD
- 5273. 20TH-CENTURY SPANISH LITERATURE.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Background, varied forms, diverse directions of Spanish poetry, end of 19th century to Civil War. Unamuno’s existentialist verse; Machado’s intimate lyrics, *Campos de Castilla*; J. R. Jiménez’s innovations. Aspects of “modernity”: “vanguard” movements to poetry of commitment. “Creacionismo,” cubism, surrealism—Lorca, Alberti, Prados, Guillén, Salinas, Cernuda. GrD
- 5312. THE LIBRO DE BUEN AMOR AND LA CELESTINA.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Comparative study of two masterpieces in terms of sources, historical background, and artistic viewpoints. Traditions of Ovid, elegiacal literature, medieval Latin comedy (*Panfilo*). Social world of *Libro*, *Celestina*. Problems of authorship. Oriental, Semitic, and Christian influences. Art and morality. GrD
- 5316. THE PICARESQUE NOVEL.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Major picaresque narratives—*Lazarillo*, *Guzmán*, *Buscón*, Cervantes’ picares, *Estebanillo González*—in relation to Spanish ambience, Western tradition, European novel, realism. Literary autobiography, episodic structure, themes of roguery, delinquency, sin, marginality, social criticism, moral preoccupations. Comparison to European counterparts. GrD
- 5351. THE SPANISH NOVEL OF THE 19TH CENTURY.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
 Spanish realism from Fernán Caballero to late novels of Galdós. Ideological trends—traditionalism (F. Caballero, Pereda, Alarcón) and the impact of the 1868 liberal revolution

Course Descriptions—Major Sequences

- (Clarín, Pardo Bazán, Galdós, P. Valdés); aesthetic evolution of realism. Naturalism and spiritualism. GrD
- 5354. SPANISH THOUGHT, LETTERS, MOVEMENTS OF THE 19TH CENTURY.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Traditionalism and liberalism in modern Spain. Donoso and Balmes. Krausists' influence on philosophy, religion, science, literature, and education. Revolution of 1868 as focal point of ideological conflict in 19th-century intellectual life. Menendez y Pelayo's scholarship. GrD
- 5371. THE MODERN SPANISH NOVEL (1900-1936).** (4 cr; prereq one 3xxx or 5xxx Spanish or Portuguese literature course and Δ)
Three novelistic generations—of 1898, post-1898, and the "dehumanized" 1930's of surrealism. Relationship of thematic content—politics, art, history, human psychology, Spain itself—to fictional constructs and self-expression in Azorín, Unamuno, Baroja, Valle-Inclán, Pérez de Ayala, Miró, Jamés. GrD
- 5372. SPANISH 20TH-CENTURY ESSAY.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Modern Spanish thought: Unamuno, Ortega y Gasset, others. Rationalism and irrationalism. Ortega's philosophy of history and society. Political ideas in the crisis of contemporary Spain from Maeztu to Azaña. GrD
- 5373. THE CONTEMPORARY SPANISH NOVEL SINCE THE CIVIL WAR.** (4 cr; prereq one 3xxx or 5xxx Spanish or Portuguese literature course or Δ)
Postwar fiction—"tremendismo," the various realisms, resurgence of explicit interest in narrative modes and techniques, effects of censorship, political exile, foreign influences, literary commercialism. Cela, Delibes, Goytisolo, Martín-Santos, Sánchez-Ferlosio, Sender, Ayala, Benet, others. GrD
- 5381. THE CONTEMPORARY SPANISH THEATRE (1939 TO THE PRESENT).** (4 cr; prereq one 3xxx or 5xxx Spanish or Portuguese literature course and Δ)
Theatre in a dictatorship: works permitted, censored, published but unperformed; writers in "exile." Buero, Sastre, Olmo, Arrabal, Cela, Ruibal and underground theatre, Aub. "Total theatre" or theatre of cruelty, experimentation, protest, satire, and conformity. GrD
- 5392. CONTEMPORARY SPANISH POETRY (1936 TO THE PRESENT).** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Major postwar Spanish poets: Dámaso Alonso, José Luis Hidalgo, Blas de Otero, Gil de Biedma, Claudio Rodríguez, others. Continuity of pre- and post-war poetry. Poetic expression under the Franco regime; social and hermetic poetry; the prison poems of Miguel Hernández. GrD
- 5411. CERVANTES: DON QUIJOTE.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Literary techniques, perspectives, irony, historical and cultural background. Madness as reality and metaphor; Erasmusian tradition; problems of anachronism; social satire. Literature about folly. Cervantine criticism. GrD
- 5412. CERVANTES: VARIOUS GENRES—THEATRE, NOVELLAS EJEMPLARES, ENTREMESES.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Cervantes' art, vision, and commitments in variety of genres except *Quijote* and *Persiles*. Life of Cervantes as synthesis of Spanish experience: "prologues," 1585-1616; *Viaje de Parnaso*, pseudoautobiography; poetry. *Galatea*, pastoral; *Numancia*, tragedy; "entremeses," theatrical farce; "novelas ejemplares." Theatre: *Pedro de Urdemalas*, image of "world is stage." Cervantes' literature and Spanish society. GrD
- MidE 5501-5502-5503. HISPANO-ARABIC LITERATURE AND CULTURE.** (4 cr per qtr; prereq $\$$)
Literary styles and genres in classical and modern writings; compositions based on texts studied. GrD
- 5521. SPANISH-AMERICAN COLONIAL LITERATURE.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Columbus, Cortés, Cabeza de Vaca, Las Casas, Ercilla, Bernal Díaz, Inca Garcilaso, Balbuena, Vela, Sor Juana, Sigüenza y Góngora, Del Valle y Caviedes, Bolívar, Lizardi. Works examined as literary structures reflecting the rise and decline of the Spanish imperial process in America. GrD
- 5522. SPANISH-AMERICAN ROMANTICISM.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Development of "americanismo literario" through representative authors: Echeverría, Sarmiento, Lastarria, Mármol, Blest Gana, Zorrilla San Martín, Mera, Isaacs, Hernández, Villaverde. Socioeconomic foundations of the romantic movement in Spanish America: the structuring of export-import economies. GrD

- 5523. SPANISH-AMERICAN POSITIVISTIC NARRATIVE.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Socioeconomic and ideological background of literary realism-naturalism in Spanish America. Comparative approach: positivistic thought (Comte, Mill, Spencer, Taine, Bernard) as conditioner of literary structures. Orrego Luco, Cambaceres, Gálvez, Lillo, Lynch, Gallegos. GrD
- 5533. THE BAROQUE IN EUROPEAN LITERATURE: SPAIN.** (4 cr; prereq at least one 3xxx or 5xxx course in the literature of France or Germany or Italy or Portugal or Spain)
The baroque movement in Spain. Characteristics held in common with the baroque movement in Italy, France, and Germany. (See also Fren 5531—The Baroque in European Literature: France and Italy.) GrD
- 5551. MODERNISMO: THE PRECURSORS.** (4 cr; prereq one 3xxx or 5xxx Spanish or Portuguese literature course and Δ)
Overview of Spanish-American poetry; appearance of "modernista" trends; precursors of "modernismo." Bello, Heredia, Martí, Gutiérrez Nájera, Asunción Silva, Julián del Casal, others. Participation in and reaction to traditional themes and forms. GrD
- 5552. MODERNISMO: THE MAIN AUTHORS.** (4 cr; prereq one 3xxx or 5xxx Spanish or Portuguese literature course and Δ)
"Modernista" movement seen through representative authors: Darío, Freyre, Lugones, Neruo, Herrera, González Martínez, others. Infusion of new forms; revitalization of vocabulary, imagery, thematics. Relation of the artist to society. GrD
- 5553. CONTEMPORARY SPANISH-AMERICAN POETRY.** (4 cr; prereq one 3xxx or 5xxx Spanish or Portuguese literature course or Δ)
Spanish-American poetry after "modernismo": Borges, Carrera Andrade, Gorostiza, Guillén, López Velarde, Minstral, Neruda, Parra, Paz, Vallejo, others. Major trends. Individual poems in historical context. Social background of poets. Aesthetics and commitments. GrD
- 5581. THE MODERNIST NARRATIVE: 19TH AND 20TH CENTURIES.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
"Modernismo" as antecedent for contemporary Spanish-American narrative. Structures, themes, ideological implications examined in light of romantic and symbolist aesthetic tradition. Martí, Gutiérrez Nájera, Neruo, del Casal, Darío, Díaz Rodríguez, Lugones, Larreta, Prado. Foreign influences, literary theory, social preoccupations. GrD
- 5582. SPANISH-AMERICAN DRAMA.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Drama in Spanish America from Conquest to present. Origins of theatre from colony to 19th century; trends in 20th century, rise of national theatres. Sánchez, Usigli, Gibson Parra, Nalé Roxlo, Arrivi, Soleri, Swayne, Salazar Bondy, Gorostiza, Marqués, Wolff, Díaz, Vodanovic, Triana. GrD
- 5583. SPANISH-AMERICAN SHORT STORY.** (4 cr; prereq three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
From early realists and regionalists to modern masters. Trends from the 19th century to the present; Quiroga, Borges' *Ficciones*, Cortázar, Carpentier, Rulfo, Donoso, García Márquez. GrD
- 5584. CONTEMPORARY SPANISH-AMERICAN NOVEL.** (4 cr; prereq one 3xxx or 5xxx Spanish or Portuguese literature course and Δ)
Structural and thematic changes since the 1950's. Socioeconomic origins, ideological background and implications: psychoanalysis, problems of myth, critique of conceptions of history, existentialism. Fuentes, Donoso, Asturias, Vargas Llosa, García Márquez, Carpentier. GrD
- 5709. INTRODUCTION TO THE DESCRIPTION AND ANALYSIS OF MODERN SPANISH.** (4 cr; prereq 3021 or \S 3021 or \S)
History of linguistic studies in Hispanic world, from structure of language to dialectology and historical studies. Structural approach to modern language. Relationship of linguistic and literary theory in Hispanic intellectual community. Bibliography. GrA
- 5711, 5712, 5713. THE STRUCTURE OF MODERN SPANISH: PHONOLOGY, MORPHOLOGY, SYNTAX.** (4 cr per qtr; prereq 3021 or \S)
Scientific approach to structure: syntax, phonology, word formation, dialectal differences. Useful for students who plan to teach Spanish and for those whose primary language is Spanish. 5711 (phonology): Theoretical and practical aspects of sound system of Spanish. Segmentals (vowels and consonants) and suprasegmentals (intonation, stress, and juncture). Dialectal differences. 5712 (morphology): Spanish affixes used to change meaning of words. Slight and radical changes in Spanish ("modificative" vs. "transformative"). New affixes and modern meanings; division between inflectional and derivational morphology. 5713 (syntax): Compares and contrasts different types of grammars in terms of basic Spanish structure. Dialectal differences in Spanish syntax. Problems of English speakers with Spanish. GrA

Course Descriptions—Major Sequences

- 5714. THE STRUCTURE OF MODERN SPANISH: SEMANTICS.** (4 cr; prereq 5713)
Relationship between syntax and semantics. Application of structural semantics to the Spanish language, concepts of semantic and lexical fields. Cultural patterns in Hispanic world as reflected in semantic structures. Theories of meaning, euphemisms; taboos; semantics and social class. Semantic approaches to literary analysis. GrA
- 5721. INTRODUCTION TO ROMANCE PHILOLOGY.** (4 cr, §Port 5721; prereq 3721 or Port 3721 or §)
Comparative view of the origins and development of Romance languages. Effects of language change on the Romance languages, examined individually and as a group; medieval texts surveyed in terms of time, place, and cultural setting. GrA
- 5729. SPANISH DIALECTOLOGY: INTRODUCTION.** (4 cr; prereq 5711, 5712, 5713)
History, principles, and theories of dialectology as they relate to descriptive study of Spanish. Linguistic geography and delineation of national and social dialects. GrA
- 5731. SPANISH DIALECTOLOGY: REGIONAL AND SOCIAL DIALECTS OF MODERN SPAIN.** (4 cr; prereq 5729 or §)
Major dialect areas of Spain; distinguishing phonological, morphological, lexical, and syntactic variations. Impact of recent cultural, political, and socioeconomic transformations on the language. GrA
- 5732. SPANISH DIALECTOLOGY: REGIONAL AND SOCIAL DIALECTS OF MODERN SPANISH AMERICA.** (4 cr; prereq 5729 or §)
Major dialect areas in modern Hispanic America. Norm, speech, and language related to former political and religious divisions of Hispanic America and to new national boundaries. GrA
- 5733. SPANISH DIALECTOLOGY: DESCRIPTIVE STUDY OF SPANISH SPOKEN IN THE UNITED STATES.** (4 cr; prereq 5729 or §)
Spanish speaking communities in the United States (Puerto Rican, Dominican, Mexican-American, and Cuban). Phonological, lexical, and morphosyntactical characteristics. Problems of interference and transference. Bilingualism. Spanish language in an English-dominant society. GrA
- 5910. TOPICS IN SPANISH AND SPANISH-AMERICAN LITERATURE.** (4 cr per qtr [12 cr max]; prereq 3104 or SpPt 3104 or Δ)
Topics specified in *Class Schedule*. Spanish or Spanish-American literature treated in important groups, movements, trends, issues, methods, genres. Specific approaches depend on topic and instructor. GrD
- 5930. TOPICS IN HISPANIC LINGUISTICS.** (4 cr per qtr [12 cr max]; prereq 3021 or Δ)
Topics specified in *Class Schedule*. Problems in Hispanic linguistics; aspects of Luso-Brazilian language. A variety of linguistic approaches and methods. GrA
- 5940. FIGURES IN SPANISH AND SPANISH-AMERICAN LITERATURE.** (4 cr per qtr [12 cr max]; prereq 3104 or SpPt 3104 or Δ)
Figures specified in *Class Schedule*. Introduces one Spanish or Latin-American major writer or a group of writers whose work has had impact on thought, literature, or social problems. Orientation and method of course depend on instructor. GrD
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr [15 cr max]; for MA and PhD candidates; prereq § and Δ)
Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (1-5 cr per qtr; prereq Δ)

SPANISH-PORTUGUESE

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Span 1101-1102-1103-1104 or 1301-1302, 1105; or equiv
Port 1001-1002-1003-1004 or 1101-1102-1103-1104, 1005; or equiv

Major Requirements—Two B.A. "tracks" are available: one with about two-thirds of the 3xxx-5xxx credits in Spanish courses and the remainder in Portuguese courses to achieve a Spanish emphasis, the other with reversed proportion to achieve a Portuguese emphasis

22 cr, one course in each of these groups: Port 3014, Span 3014; Port 3501,

3502, Span 3501, 3502, 3512; Port 3211, 3212, 3213, Span 3910; Port 3721, Span 3021, 3730; Port 5110, 5120, 5130, 5210, 5220, 5230, Span 3940

30 cr in 3xxx or 5xxx Portuguese or Spanish courses selected in consultation with the director of undergraduate studies

Grades of C or better, or in A-N, are required in all major courses. At least three major courses must be taken on the Twin Cities Campus. Not acceptable for major credit: Span 3615; SpPt 3980; more than 8 cr in Span 3730, 3910, or 3940; credit received in community tutorial programs or in courses taught in English.

PORTUGUESE (Port)

1001-1002-1003. BEGINNING PORTUGUESE. (5 cr per qtr; prereq 1001 or # for 1002 and 1002 or # for 1003)

Speaking and understanding Portuguese; pronunciation (Brazilian speech stressed); writing and reading skills; grammar; cultural aspects of language and civilizations of Portuguese speaking world. GrA

1004. INTERMEDIATE PORTUGUESE GRAMMAR AND COMPOSITION. (5 cr; prereq 1003 or 1103)

Speaking and comprehension; development of reading and writing skills based on Portuguese-language materials. GrA

1005. INTERMEDIATE PORTUGUESE. (4 cr; prereq 1004 or 1104)

Speaking and comprehension; development of reading and writing skills grounded in materials that reflect the cultural diversity of the Portuguese speaking world. Grammar review. GrA

1101-1102. INTENSIVE PORTUGUESE. (5 cr per unit; some previous training in a Romance language or # recommended)

Accelerated approach to materials of 1001-1002. For highly motivated students. GrA

1103-1104. INTENSIVE PORTUGUESE. (5 cr per unit; prereq 1102 or #)

Accelerated approach to materials of 1003 and 1004. For highly motivated students. GrA

1504. CULTURE, CIVILIZATION OF PORTUGAL AND BRAZIL. (4 cr; may not be used for Spanish or Portuguese major cr; offered 1976-77)

Social history of the Luso-Brazilian world, Middle Ages to contemporary times. Events and currents of thought in modern Portuguese-speaking nations. Taught in English. GrD

3014. CONVERSATION AND COMPOSITION. (5 cr; prereq 1005 or equiv)

Speaking and writing skills. Cultural comparisons, current events. Grammar review. Writing workshops. GrA

3211. READINGS IN RENAISSANCE AND MODERN PORTUGUESE LITERATURE. (4 cr; prereq 1005, SpPt 3104 or Span 3104 or #)

Literary development against background of social history. Concentration on Renaissance and period since 1870. Key works such as a play by Gil Vicente or a novel by Eça de Queiroz. GrD

3212. READINGS IN BRAZILIAN LITERATURE: ORIGINS THROUGH THE 19TH CENTURY. (4 cr; prereq 1005, SpPt 3104 or Span 3104, or #)

Development of Brazilian literature. Romantic and realistic periods. Relationship between literature and social background. GrD

3213. READINGS IN BRAZILIAN LITERATURE: 20TH CENTURY. (4 cr; prereq 1005, SpPt 3104 or Span 3104, or #)

Modernism to contemporary period. Key works viewed within the social context of modern Brazil. GrD

3501. LUSO-BRAZILIAN CIVILIZATION I. (5 cr; prereq 1005)

Luso-Brazilian culture from origins to 1808. Social and cultural currents that lay the basis for the modern Portuguese speaking world. GrD

3502. LUSO-BRAZILIAN CIVILIZATION II. (5 cr; prereq 1005)

Portuguese-language civilization from Napoleonic invasion to present. Social developments in Portugal and Brazil; their reflection in philosophy and the arts. GrD

3603. MODERN AND CONTEMPORARY BRAZILIAN PROSE FICTION: ITS POLITICAL AND SOCIAL CONTENT. (4 cr; for students who do not speak Portuguese)

Novel and short story of Brazil as reflection of contemporary Brazilian society and as an innovative art form. Modern Brazilian fiction. Taught in English. GrD

Course Descriptions—Major Sequences

- 3721. ORIGINS AND HISTORY OF SPANISH AND PORTUGUESE.** (4 cr, \$Span 3721; prereq 3014 or Span 3014)
Principal stages in the growth and development of the Spanish and Portuguese languages and their role as expression of specific cultures. Fundamental concepts and methodology of Iberian historical linguistics. GrA
- 3910. TOPICS IN LUSO-BRAZILIAN LITERATURE.** (4 cr; prereq 3104 or §)
Sample topics: Portuguese lyric poetry; the Portuguese social novel; contemporary Portuguese literature; the Brazilian novel; recent currents in Brazilian poetry. GrD
- 3970. DIRECTED STUDIES.** (1-5 cr per qtr; prereq Δ)
Guided individual reading or study.
- 5110, 5120, 5130. TOPICS IN PORTUGUESE LITERATURE.** (4 cr per qtr [12 cr max per course number]; prereq 3211 or 3212 or 3213, or three 3xxx or 5xxx Spanish literature courses and Δ)
Topics specified in *Class Schedule*. Major issues of Portuguese literature; important authors, movements, currents, genres, socioaesthetic questions, literary techniques. GrD
- 5210, 5220, 5230. TOPICS IN BRAZILIAN LITERATURE.** (4 cr per qtr [12 cr max per course number]; prereq 3211 or 3212 or 3213 or equiv, or three 3xxx or 5xxx Spanish literature courses and Δ)
Topics specified in *Class Schedule*. Important authors, movements, currents, genres, socio-aesthetic questions, literary techniques. GrD
- 5224. AFRO-PORTUGUESE LITERATURE.** (4 cr; prereq 3211 or 3212 or 3213 or ¶3211 or ¶3212 or ¶3213)
Imaginative writing (poetry, short story, novel, theatre) of Portuguese Africa in historical, social, and political context. Internal structure juxtaposed with external reality. GrD
- 5721. INTRODUCTION TO ROMANCE PHILOLOGY.** (4 cr, \$Span 5721; prereq 3721 or Span 3721 or §)
Origins and development of Romance languages. Effects of language change on the Romance languages, individually and as a group. Medieval texts surveyed in terms of time, place, and cultural setting. GrA
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr [15 cr max]; for MA and PhD candidates; prereq § and Δ)
Guided individual reading or study.
- 5990. DIRECTED RESEARCH.** (1-5 cr per qtr; prereq Δ)

SPANISH-PORTUGUESE (SpPt)

- 3104. THE ART OF READING LITERARY TEXTS.** (4 cr, \$Span 3104; prereq §)
See Span 3104. Sections including reading in Portuguese offered at regular intervals. GrD
- 3605. POLITICS IN SPANISH AND LATIN AMERICAN LITERATURE.** (4 cr)
Civil wars in Spain; national liberation movements and political upheavals in Latin America. Taught in English. GrD
- 3801. HONORS SEMINAR.** (4 cr; prereq 20 cr toward major incl 3104, deptl honors candidate or §)
Theory and practice of humanistic scholarship. Student works with a faculty member on a research paper or thesis. GrD
- 3980. DIRECTED INSTRUCTION.** (1-4 cr per qtr [8 cr max]; S-N only; prereq § and Δ)
Undergraduates serve as teaching assistants in courses they have successfully completed for credit.
- 5021. MEDIEVAL SPANISH, PORTUGUESE, AND CATALAN TEXTUAL READINGS.** (4 cr; prereq Span 3721 or Port 3721 and three 3xxx or 5xxx Spanish or Portuguese literature courses or Δ)
Distinctive linguistic, literary, and cultural features of medieval Iberian languages; reading Spanish, Catalan, and Galatic-Portuguese texts in the original. GrD
- 5950. SELECTED TOPICS IN HISPANIC-LUSO-BRAZILIAN LITERARY INTERRELATIONSHIP.** (4 cr per qtr; prereq reading knowledge of Spanish and Portuguese)
Common conceptions, background, and influences among Peninsular Spanish, Spanish-American, Portuguese, and Brazilian literatures in essay, drama, poetry, and fiction. GrD
- 5960. SELECTED COMPARATIVE PROBLEMS IN THE WORKS OF HISPANIC AND LUSO-BRAZILIAN AUTHORS.** (4 cr per qtr; prereq reading knowledge of Spanish and Portuguese)
Common conceptions, background, and influences among major Peninsular Spanish, Spanish-American, Portuguese, and Brazilian authors. GrD

Speech-Communication (Spch)

Staff—Chairman, Robert L. Scott, 317 Folwell Hall; **Director of Undergraduate Studies,** George L. Shapiro, 401a Folwell Hall; **Interim Advising Office,** 401b Folwell Hall

Professors: Bormann, Browne, Cashman, Goldstein, Howell (on leave 1976-77), Jensen, Miller, Scott, Shapiro, Ziebarth

Associate Professor: Bart

Assistant Professors: Garvin, Geizer (on leave 1976-77), Rarick

Instructor: Bond

Speech-communication is concerned with the study of the communicative dimensions of human experience, focusing particularly on the interpersonal, rhetorical, and broadcast perspectives.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—1101, 1102, 1104

Major Requirements—Minimum of 36 3xxx-5xxx cr, to include: 3211, 3401, 3601 (may not include 3970, 3980, or X registrations)

A program must be selected in conference with and approved by a departmental major adviser.

Cocurricular Activities—Any University student may participate in the forensic program offered by the department and in the operation of student radio station WMMR. Forensic activities include debate, the Freshman-Sophomore Oratorical Contest, and the Pillsbury Oratorical Contest. Majors are encouraged to participate in the activities of the Undergraduate Speech Association.

General Education—The department recommends as courses for nonmajors 1101, 1102, 1104, 3211, 3401, 3605, 3641, 5402, 5431, 5615, 5617.

1101f,w,s,su. FUNDAMENTALS OF SPEECH-COMMUNICATION: ORAL COMMUNICATION. (4 cr)

Oral communication processes and elements. Criticism of and response to oral discourse. Individual speaking. GrA

1102f,w,s,su. FUNDAMENTALS OF SPEECH-COMMUNICATION: COMMUNICATION PROCESS. (4 cr) Garvin

Intrapersonal, interpersonal, and group communication. GrA

1104s. FUNDAMENTALS OF SPEECH-COMMUNICATION: THE CREATIVE PROCESS AND THE MASS MEDIA. (4 cr) Bart, Browne

Mass media structure and its effects on the creative process. GrD

1110f,w. FRESHMAN DISCUSSION AND DEBATE. (2 cr per qtr; open to fr who qualify for fr debate squad; prereq fr with C avg) GrA

3111f,w,s. LEADERSHIP COMMUNICATION. (3 cr [4 cr with ROTC lab], §Air 3401; does not count toward speech-communication major)

Interdisciplinary study of theory and practice of leadership. Theoretical approaches to management. Interpersonal communication skills in leadership practice; persuasion and cross-value communication in effective leadership. Experience in task-oriented small group communication.

3191f, 3192w, 3193s. HONORS COURSE: TUTORIAL SEMINAR IN SPEECH. (4 cr per qtr; prereq honors candidate in speech-communication, Δ, §)

3201f,w,s,su. INTRODUCTION TO BROADCASTING PRODUCTION. (4 cr) Bart

Practice and theory. Projects in performance and scripting; studio equipment and procedures. GrD

Course Descriptions—Major Sequences

- 3202. LABORATORY SECTION: BROADCASTING PRODUCTION.** (1-4 cr; prereq 3201 or ¶3201)
Arts and techniques of television. Cameras, lighting, floor direction; planning and construction of television visuals and setting in professional production environment. GrD
- 3203f,w,s,su. RADIO PRODUCTION.** (4 cr; prereq 3201) Bart, Goldstein, Ziebarth
Equipment and staff organization; program design and presentation. Organization, writing, production, direction, and performance of radio news, music, dramatic, and documentary programs. GrD
- 3204f,w,s,su. TELEVISION PRODUCTION.** (4 cr; prereq 3201) Bart, Rarick
Equipment and staff organization; interrelationships with program design. Exercises. GrD
- 3211. DETERMINANTS OF BROADCAST PROGRAMMING.** (4 cr) Browne, Rarick
Historical development and contemporary aspects of broadcast programming. How governmental, industrial, and public organizations influence program decisions. "Problem" areas of programming. GrC
- 3401. THEORIES OF INTERPERSONAL COMMUNICATION.** (4 cr; prereq 1102 or \$, Psy 1001) Geizer
Theories of interpersonal communication and their usefulness for particular purposes. GrC
- 3402. LANGUAGE, COMMUNICATION, AND RHETORIC IN CONTEMPORARY BLACK AMERICA.** (4 cr; prereq 1101 or 1102 or Afro 1101 or 1102) Bond
Communicative experiences of Black Americans: language acquisition, modes of persuasion, stylistic elaboration. Formal and informal contexts. GrC
- 3431. THE ROLE OF PERSUASION IN THE MODERN WORLD.** (4 cr; soph standing recommended) Cashman, Howell
Persuasion in interpersonal, organizational, intracultural, and intercultural relationships. Contemporary persuasion, with occasional historical segments. GrC
- 3601. APPROACHES TO PUBLIC DISCOURSE.** (4 cr; prereq 1101) Jensen, Scott
Theoretical systems intended to explain or direct the creation of public discourse. Traditional rhetorics to contemporary perspectives. Using theory to explain the practice of public discourse. GrA
- 3605f,w,s,su. PUBLIC SPEAKING.** (4 cr; prereq 1101)
Public speeches: directed practice. Public speaking in contemporary life. GrA
- 3620f,w. INTERCOLLEGIATE DEBATE AND ORATORY.** (2 cr per qtr)
For students interested in intercollegiate speech competition. Performance in speech activities. GrA
- 3641f,w,s,su. DISCUSSION AND CONFERENCE METHODS.** (4 cr; prereq 1101 or 1101H or \$)
Cooperative thinking in task-oriented groups. Planning, preparing for, participating in, and leading private and public meetings. GrA
- 3970f,w,s,su. DIRECTED STUDIES.** (Cr ar; prereq at least one speech-communication course, \$, Δ)
Guided individual reading or study.
- 3980f,w,s,su. DIRECTED INSTRUCTION.** (1-4 cr per qtr [8 cr max]; prereq \$, Δ)
Supervised planning and teaching of undergraduate courses.
- 5202. ADVANCED TELEVISION PRODUCTION.** (4 cr; limited to 14 students; prereq 3204, \$) Bart
Creative problems in production and direction. Program design, lighting, audio, and camera and electronic equipment.
- 5204. WRITING RADIO AND TELEVISION DRAMA.** (4 cr; prereq 3201, \$) Browne, Goldstein
Physical, psychological, and sociological aspects of radio and television and their influence on the writer. Scriptwriting dramatic commercials, dramas, and documentaries. GrD
- 5211. CONTEMPORARY PROBLEMS IN AMERICAN BROADCASTING.** (4 cr; prereq 3211 or equiv, \$) Browne, Rarick
Problems affecting American commercial and educational broadcasting. Cable television, public access to broadcasting, violence on television, financing of public television. GrC
- 5221. EDUCATIONAL TELEVISION PRODUCTION.** (4 cr; prereq 3204 or \$) Goldstein
Television for instructional purposes; research literature used in production of educational materials; experimentation in preparing material. GrD
- 5222. EDUCATIONAL TELEVISION PROGRAMMING AND ADMINISTRATION.** (4 cr; prereq 3211 or \$) Goldstein
Television applied to educational needs; current practices; significant research findings; relative effectiveness of differing types of television utilization; impact of various modes of transmission on programming and administrative concepts. GrC

- 5231. COMPARATIVE BROADCAST SYSTEMS.** (4 cr; prereq 3211 or #) Browne
Historical, sociological, and political aspects of systems of broadcasting throughout the world—American, Canadian, British, French, German, Soviet, others. Regulation, impact on political, social, and economic development. GrC
- 5232. INTERNATIONAL BROADCASTING.** (4 cr; prereq 12 cr in political science or #) Browne
International broadcasting in the U.S., Great Britain, U.S.S.R., Japan, and other countries. Theories of informing and persuading through direct broadcast and exchange of programs; regulatory agreements; spectrum control; social and legal implications of broadcasting via satellite. GrC
- 5233. BROADCASTING AND NATIONAL DEVELOPMENT.** (4 cr; prereq 5231 or #) Browne
Use of radio and television to effect changes in social, political, economic, and cultural life. Use by developing nations to improve agricultural practices, hygienic standards, literacy, awareness of civic responsibility. GrC
- 5402f,w,s. PROBLEMS IN INTERPERSONAL COMMUNICATION.** (4 cr; prereq 3401 or #)
Shapiro
Factors contributing to misunderstanding, not understanding, disagreement, and cessation of contact in dyads. GrC
- 5403. THEORY CONSTRUCTION AND ANALYSIS IN COMMUNICATION.** (4 cr; prereq 3401 or #) Geizer, Rarick
Development of communication theory. Analysis of existing theory. Relationships of theory to research. GrC
- 5404. LANGUAGE, CULTURE, AND EDUCATION.** (4 cr, \$SeEd 5404; prereq 1102, 3401 or #)
Piche
Psychological and social-psychological perspectives for study of language-communication; language variation (dialects, codes, registers); implications for program development and instructional practices. GrA
- 5405. NONVERBAL COMMUNICATION: THEORY AND RESEARCH.** (4 cr) Geizer
Nonverbal interpersonal communication. Nonverbal categories: gesture, facial expression, posture, clothing, environment. GrC
- 5411f,w,s,su. SMALL GROUP COMMUNICATION.** (4 cr; A-N only; prereq 3641 or #) Bormann, Garvin, Elliott
Communication within the small, task-oriented group. Group cohesiveness, leadership, role structure, information processing, decision making.
- 5412. GROUP AND ORGANIZATIONAL COMMUNICATION.** (4 cr; S-N only; prereq 5411)
Bormann
Intra- and inter-group communication. Communication of small task-oriented groups in organizational context. Small group and organizational communication.
- 5414. AUTHORITY AND POWER IN TASK-ORIENTED COMMUNICATION.** (4 cr; S-N only; prereq 3641 or #) Howell, Shapiro
Authority and power in task-oriented groups. Tavistock-type small group, intergroup, and large group laboratory experiences. Verbal and nonverbal processes in and among groups which affect leadership and followership.
- 5421. QUANTITATIVE RESEARCH IN COMMUNICATION.** (4 cr; prereq 3401 or 5403 or #)
Geizer
Experimental and descriptive research; design and procedures; individual projects. GrC
- 5422. INTERVIEWING AND COMMUNICATION.** (4 cr; prereq 1101, 6 cr in social science or #)
Rarick
Theory and practice in the information interview. Interpersonal perception, empathy, and cognitive structure in dyadic communication. Experience in interviewing and communication analysis. Research in interpersonal and mass communication. GrC
- 5431. THE PROCESS OF PERSUASION.** (4 cr; prereq 1102, Psy 1001) Howell
Modern motivational communication. Social control through persuasive speech. GrC
- 5441. COMMUNICATION IN HUMAN ORGANIZATIONS.** (4 cr; prereq 1102 or 3401, 3641 or 5411, or grad student) Shapiro
Communication in organizational settings. Organizational structure and dynamics and their effect upon the communication process. Individual projects. GrC
- 5451. INTERCULTURAL SPEECH-COMMUNICATION.** (4 cr; prereq 3401, Anth 1002, or another course in cultural anthropology, or #) Howell
Successful interpersonal communication across cultures. Linguistic and nonverbal variables. Emphasis on North Americans abroad, communication with host nationals. GrA,C

Course Descriptions—Major Sequences

- 5452f,w,s.** **WORKSHOP IN INTERCULTURAL COMMUNICATION.** (4 cr; prereq $\$$) Howell
Small group training for foreign and United States students in communicating across cultures; group discussions, role playing, simulations, lectures as methods. GrC
- 5602.** **CONTEMPORARY POLITICAL PERSUASION.** (4 cr; prereq 1101 or 1101H, 5431 or $\$$)
Scott
Contemporary political speech. Ideologies in political persuasion. GrC
- 5611.** **CLASSICAL RHETORIC.** (4 cr; prereq 1101 or 1101H) Scott
Greek and Roman theories of speechmaking; historical and philosophical context and influence on education. GrA
- 5615.** **INTRODUCTION TO RHETORICAL CRITICISM.** (4 cr; prereq 1101 or 1101H...3601 recommended) Garvin, Scott
Traditional and contemporary rhetorical theory; application to contemporary public address. GrA
- 5616.** **PUBLIC ADDRESS IN BRITAIN AND THE COMMONWEALTH.** (4 cr; prereq 1101 or 1101H or $\$$) Jensen
British orators—works and historical settings. British rhetorical theory. GrA
- 5617.** **HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS.** (4 cr; prereq 1101 or 1101H, Psy 1001) Bormann
History and criticism of religious and reform speech in the United States, 1620 to 1920. GrA
- 5618.** **HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS.** (4 cr; prereq 1101 or 1101H, Psy 1001) Bormann
History and criticism of political speech in the United States from the Revolution to the present. GrA
- 5621.** **FEMINIST RHETORIC.** (4 cr; prereq 5615 or $\$$) Garvin
Feminist rhetorical activity in the United States focusing on major issues of women's liberation. GrA
- 5970f,w,s,su.** **DIRECTED STUDIES.** (Cr ar; prereq 9 3xxx-5xxx speech-communication cr, $\$, \Delta$)
Guided individual reading or study.

Statistics (Stat)

Staff—*Director*, School of Statistics, Seymour Geisser, 270 Vincent Hall; *Chairman*, Department of Applied Statistics, Stephen Fienberg, 352a Classroom Office Building; *Chairman*, Department of Theoretical Statistics, and *Director of Undergraduate Studies*, Robert J. Buehler, 270 Vincent Hall; *Director of Graduate Studies*, David Hinkley

Professors: Buehler, Collier, Das Gupta, Eaton, Geisser, Fienberg, Hildreth, Lindgren, Sobel

Associate Professors: Berry, Bingham, Cook, Hinkley, Martin, Sudderth

Assistant Professors: Larntz, Weisberg

Statistics, which deals with the collection, analysis, and interpretation of data, provides a logical framework for using data to draw inferences in scientific studies and for making decisions in industrial, business, and governmental enterprises.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Calculus through Math 1231 or 1331 or 1621 (Stat 3091 or 1051 recommended)

Major Requirements—Math 3211 or 3611

Math 3142 or 3511 or Stat 5071

5131-5132-5133 or 5121-5122, 5101

At least 16 cr chosen from 5021, 5022, 5201, 5211, 5301, 5302, 5401, 5421, 5601; IE 5030, 5040, 5550-5551, 5531; QA 5171; PubH 5450-5451-5452-5453-5454-5455; CSci 3101, 5101-5102; Math 5681-5682-5683

- 1051f,w,s. INTRODUCTION TO IDEAS OF STATISTICS.** (4 cr; prereq high school higher algebra)
 Presentation and analysis of data. Probabilistic models for inference. Inference and decision procedures. Emphasis on concepts rather than computation. GrA
- 3091f,w,s. INTRODUCTION TO PROBABILITY AND STATISTICS.** (4 cr, §5121, §5131; prereq differential and integral calculus; one section designated primarily for IT majors)
 Elementary probability and probability distributions, sampling and elements of statistical inference. Treatment more mathematical than that in 1051. GrA
- 5021f,w. STATISTICAL ANALYSIS I.** (5 cr; prereq college algebra or §)
 Frequency distributions; descriptive statistics; elementary probability; binomial, Poisson, and normal distribution; estimation and testing; analysis of variance; multiple comparisons; linear regression. GrA
- 5022w,s. STATISTICAL ANALYSIS II.** (5 cr; prereq 5021 or §)
 (Continuation of 5021) Multiple regression and correlation; multiway analysis of variance, variance components, covariance; elementary principles of design; basic nonparametric methods. GrA
- 5071. STATISTICAL APPLICATION OF MATRIX ALGEBRA.** (3 cr; prereq 5021 and ¶Math 3142, or §)
 Specific matrix operations with vector realizations, presuming no prior knowledge. Uses in analysis of variance and multivariate methods. Correlation structures, characteristic vectors, quadratic forms.
- 5101s. INTRODUCTION TO DECISION THEORY.** (4 cr, §5133; prereq Econ 5111 or Math 1142 or 1211 or §)
 Elements of probability; basic concepts in statistical decision theory; relationship to game theory and other types of decision problems; prediction and inference. GrA
- 5121f-5122w. THEORY OF STATISTICS.** (4 cr per qtr, §5131-5132-5133; prereq Math 1231 or 1331 or 1621)
 Univariate and multivariate distributions, law of large numbers, sampling, likelihood methods, estimation and hypothesis testing, regression and analysis of variance and covariance, confidence intervals, distribution-free methods. GrA
- 5131f-5132w-5133s. THEORY OF STATISTICS.** (4 cr per qtr, §5121-5122; prereq ¶Math 3411 or 3211)
 5131: Probability models, univariate and bivariate distributions, independence, basic limit theorems. 5132-5133: Statistical decision theory, sampling, estimation, testing hypotheses, parametric and nonparametric procedures for one-sample and two-sample problems, regression, analysis of variance. Treatment more mathematical than that in 5121-5122. GrA
- 5201w. SAMPLING METHODOLOGY IN FINITE POPULATIONS.** (4 cr; prereq 5021 or 5121 or 3091)
 Simple random, systematic, stratified, and unequal probability sampling. Ratio and regression estimation. Multistage and cluster sampling. GrA
- 5211. THEORY OF SAMPLE SURVEYS.** (4 cr; prereq 5122 or 5133)
 Mathematical treatment of survey sampling including stratified and multistage sampling, models for nonsampling errors. GrA
- 5271-5272. BAYESIAN DECISION MAKING.** (4 cr, §Econ 5271-5272; prereq 5133 for 5271... 5271 and Econ 3101 for 5272)
 5271: Axioms for personal probability and utility. Elements of statistical decision theory. Bayesian analysis of linear models. 5272: Expected utility models for economic decisions made under conditions of uncertainty. Applications to portfolio selection, forward and future trading, betting, contingency markets, business planning.
- 5301f,s. DESIGNING EXPERIMENTS.** (4 cr; prereq 5022 or 5122 or 5133)
 Control of variation, construction, and analysis of complete and incomplete block, split plot, factorial, and groups of similar experiments. Confounding, crossover, and optimum seeking designs.
- 5302f,s. APPLIED REGRESSION ANALYSIS.** (4 cr; prereq 5022 or 5071 or 5122 or §)
 Simple, multiple, and polynomial regression. Estimation, testing, and prediction. Stepwise and other numeric methods; examination of residuals; weighted least squares; nonlinear models; response surface. Experimental research and economic applications. GrA
- 5401s. INTRODUCTION TO MULTIVARIATE METHODS.** (4 cr; prereq 5071, 5022 or 5122)
 Bivariate and multivariate distributions. Inference on multivariate normal distributions. Discrimination and classification. Multivariate analysis of variance. Partial, canonical correlation and independence. Principal component analysis, factor analysis, analysis of repeated measurements, cluster analysis, profile analysis.

Course Descriptions—Major Sequences

- 5421. ANALYSIS OF CATEGORICAL DATA.** (4 cr; prereq 5022, 5122, or 5133)
Varieties of categorical data, cross-classifications and contingency tables, tests for independence. Multidimensional tables and log-linear models, maximum-likelihood estimation, and tests of goodness of fit. Analysis of incomplete tables. Marginal homogeneity and symmetry in square tables. Analysis of Markov chain data. Smoothing counts. GrA
- 5601w. NONPARAMETRIC METHODS.** (4 cr; prereq 5022 or 5122 or #)
Necessary discrete and continuous probability distributions. Goodness of fit, sign tests, order statistics, rank tests for location and for scale, two-sample and k-sample comparisons, association. Methods and applications.
- 5900. TUTORIAL COURSE.** (Cr ar; prereq #)
Study in areas not met by regular offerings. Directed study.
- 5911-5912-5913. TOPICS IN STATISTICS.** (3 cr per qtr; prereq 5122 or 5133 and #)
Topics vary. May be repeated for credit with department approval.

STUDIO ARTS

See Arts, Studio.

SUMERIAN

See Near and Middle Eastern Studies.

SWAHILI

See Afro-American Studies.

SWEDISH

See Scandinavian.

Institute of Technology

The B.A. degree is available in architecture, chemistry, computer science, geology and geophysics, mathematics, and physics and astronomy. Courses for credit, many of which may be applied to distribution requirements, are offered in all these areas as well as in civil engineering, the history of science and technology, and natural science and technology. See these departmental headings.

Textiles and Clothing (TexC)

College of Home Economics

Staff—Chairman: To be appointed, 381a McNeal Hall

Professors: Grindereing, Johnson

Associate Professor: Franzen

Assistant Professors: DeLong, Ingels, Nemecek, Williams

Instructors and Lecturers: Druy (lecturer), Gahring, Sieben

Courses in this department cover the design, production, distribution, and consumption of textile and clothing products and the physical, aesthetic, social, psychological, and economic aspects of the field. The courses listed below are introductory for some of these areas of study.

3621. TEXTILES. (5 cr; prereq soph, Chem 1005 or NSci 1005 or #)

Basic physical, chemical, and biological characteristics of fiber, yarn, and fabric structures; interrelationships with choice, maintenance, and performance of consumer textiles.

Theatre Arts (Th)

Staff—Chairman, Kenneth L. Graham, 208 Middlebrook Hall; **Director of Undergraduate Studies,** Jean Congdon, 232 Middlebrook Hall; **Director of Graduate Studies,** Wendell Josal, 204 Middlebrook Hall

Professors: Ballet, Fredricks, Graham, Hurrell, Josal, Moulton, Nolte, Thompson

Associate Professors: Balk, Congdon, Huffington

Assistant Professors: Brockman, Crellin, Gadberry, McIntyre, Montgomery, Nash

Instructor and Lecturer: Bond, Loppnow (lecturer)

Theatre arts is the study of the theory and practice of dramatic performance. This department incorporates study in seven subfields: acting, creative drama and children's theatre, design and technical problems, directing, history and dramatic literature, oral interpretation, playwriting and dramatic theory. Productions of the University Theatre provide a laboratory for courses.

B.A MAJOR SEQUENCE

Required Preparatory Courses—1101, 1321, 1504

Major Requirements—3513, 3515, 3801, 3708 or 3711 or 5711

12 cr in other 3xxx or 5xxx courses chosen in consultation with adviser

Recommended Outside the Major—Courses in art history, dramatic literature in language departments, humanities, music, psychology, studio arts

B.F.A. MAJOR SEQUENCE

Information on this degree with emphasis in acting is available from the department office.

General Education—Courses that may be of interest and value to nonmajors are 1101, 1321, 1405, 1504, 1804, 3801, 5131, 5171, 5172, 5173, 5181, 5182, 5186, 5802, 5803.

All University students are invited to participate in productions of the University Theatre.

History and Dramatic Literature

1101f,s,su. INTRODUCTION TO THE THEATRE. (4 cr) Ballet

History and theory of plays and playwrights. GrD

1405f,w,s. HONORS COURSE: INTRODUCTION TO THE THEATRE. (2 cr; prereq 1101, #)

Enrichment course for students who have completed 1101 with outstanding records. Laboratory. GrD

5171, 5172, 5173. HISTORY OF THEATRE. (4 cr per qtr; prereq sr or grad theatre major or #)

Plays, arts, and crafts of the theatre from beginnings to present. Reports and projects. **5171:** Ancient and medieval. **5172:** Renaissance through mid-19th century. **5173:** Late 19th and 20th centuries. GrD

Course Descriptions—Major Sequences

- 5181. CONTEMPORARY BLACK THEATRE.** (4 cr; prereq 1504 or Afro 1045 or 3055 or AmSt 1101 or Engl 5175 or §) Bond
Black consciousness manifested on the American stage. Black plays, playwrights, and the forces that brought them into being. GrD
- 5182. BLACK MAN: AMERICAN THEATRE 1820-1959.** (4 cr; prereq 1504 or Afro 1045 or 3055 or AmSt 1101 or Engl 5175 or §) Bond
Theatrical events in the Afro-American's evolution from White stereotypes to Black self-definition; theatres, plays, and players in the social, economic, and political fabric of their ages. GrD
- 5186. AMERICAN THEATRE.** (4 cr; prereq sr or grad theatre major or §)
The theatre as an aspect of American culture, 1752 to present. GrD

Oral Interpretation

- 1804. ORAL TRADITIONS, MYTH TO MODERN.** (4 cr)
Oral performance of mythic, folk, and modern literature. Oral interpretation of the epic, lyric, dramatic voices of literature. GrD
- 3801f,w,s,su. ORAL INTERPRETATION OF FICTION.** (4 cr; prereq 1504 or 1804 or Spch 1101)
Selected short stories. Solo and group readings. GrD
- 3801Hf,w,s. HONORS COURSE: ORAL INTERPRETATION OF FICTION.** (4 cr; prereq 1504 or 1804 or Spch 1101)
For description, see 3801. GrD
- 5802. ORAL INTERPRETATION OF POETRY.** (4 cr; prereq 1504, 3801 or grad student)
Fredricks
Lyric poems. Solo and group readings. GrD
- 5803. ORAL INTERPRETATION OF DRAMA.** (4 cr; prereq 1504, 3801 or grad student) Congdon
Plays. Solo and group readings. GrD
- 5811. HISTORY OF ORAL INTERPRETATION.** (4 cr; prereq 1504, 3801 or grad student)
Thompson
Oral and literary traditions from ancient times to the present. GrD
- 5813. THEORY OF READING AND ACTING.** (4 cr; prereq 1504, 3801 or grad student)
Aesthetic and literary theories as they relate to oral interpretation and acting. GrD
- 5823. ORAL INTERPRETATION OF SHAKESPEARE.** (4 cr; prereq 1504, 3801 or grad student)
Thompson
Trends in oral performance of Shakespeare's plays on the stage and by readers. Recording and criticism of Shakespearean theatre. Performance of selected scenes. GrD

Playwriting

- 3115. INTRODUCTION TO PLAYWRITING.** (4 cr; prereq 1101, 1504, 1321 or §) Nolte, staff
GrD
Techniques of playwriting; completion of original one-act play.
- 5115-5116-5117. PLAYWRITING.** (4 cr per qtr, §3115 or 5115; prereq 1321 or § for 5115...
3115 or 5115 for 5116...5116 for 5117) Nolte
Students with established competence in the well-made play move to more experimental forms.
5115: One-act play. 5116-5117: Full-length play. GrD

Acting

- 1321f,w,s,su. BEGINNING ACTING: CREATIVE APPROACH.** (4 cr; prereq 1504 or ¶1504 and
soph or 3rd-qtr fr)
Creation and presentation of original scenes and skits. Ability to respond with individuality and effectiveness stressed. GrD
- 1326f,w,s. BEGINNING ACTING: TECHNIQUE.** (4 cr; prereq 1321)
Fundamentals of body movement, rhythms, and acting technique. Individual and group performances. GrD
- 1328. MIME.** (2 cr; prereq 1321)
Techniques and the domain of mime explored through class participation. GrD
- 3311-3312-3313. VOICE PRODUCTION FOR THE THEATRE.** (2 cr per qtr; prereq 1321 or
¶1321; lab fee) Nash
Exercises to free the human voice from inhibitions and tensions. Work on prose, poetry, drama, and songs. GrD

- 3314-3315. STAGE FENCING AND COMBAT: HISTORY AND EXECUTION.** (2 cr per qtr; prereq 1326; lab charge required)
History of weapons through the ages; fighting and fencing; use of weapons in stage combat. GrD
- 3321. ADVANCED ACTING: CHARACTERIZATION.** (4 cr; prereq 1326)
Presentation of scenes from plays with emphasis on characterization. GrD
- 3322. ADVANCED ACTING: DIALECTS.** (4 cr; prereq 1326)
Scenes performed with emphasis on dialects. GrD
- 3326. THEATRE DANCE.** (2 cr; prereq 1326; lab charge required) Moulton
Dance techniques; practice and performance of dances in the theatre. GrD
- 3328. ADVANCED MIME.** (2 cr; prereq 1326, 1328)
Techniques of mime put to use in scene study and in creation of original mimetic pieces for performance. GrD
- 5321. PROBLEMS IN PROFESSIONAL ACTING.** (3 cr; prereq 3321, \$ for srs and grad students)
Exploration by students and a professional actor of acting techniques needed for professional careers. GrD
- 5323. ACTING: FOR THE CAMERA.** (4 cr; prereq 1326)
Laboratory course. Differences between stage acting and acting for camera. Scenes enacted and played back on videotape for class criticism. Students operate cameras. Attendance mandatory. GrD
- 5330. DIRECTED PROJECTS IN ACTING.** (1-3 cr per qtr; prereq jr, sr, 3321 or grad theatre major; ¶8711, ¶8712, ¶8713 not permitted)
Students prepare roles in scenes directed by students in the graduate direction seminar (8711, 8712, 8713) as laboratory demonstration of direction techniques. GrD
- 5334f-5335w-5336s. ACTING FOR MUSIC-THEATRE.** (4 cr per qtr; prereq 1326, \$) Balk
Acting and staging problems in music-theatre. GrD

Creative Drama and Children's Theatre

- 5131. CREATIVE DRAMA.** (4 cr; prereq 1101 or ¶1101 or elementary education major or \$...1321 recommended) Graham
Principles and methods of developing original dramatizations with children. Observation of children's classes in creative dramatics. Readings, projects, term papers. GrD
- 5132. THEATRE FOR CHILDREN.** (4 cr; prereq 3708 or 3711 or 5711 or \$) Graham
Selection, direction, and production of plays for children's audiences, coordinated with current productions of the Young People's University Theatre. GrD
- 5133. PRODUCING THEATRE FOR CHILDREN.** (2-4 cr; prereq 1321 or ¶1321, \$)
Techniques and practice of performing for audiences of children. GrD

Design and Technical

- 1502f,w,s,su. MAKEUP FOR THE ACTOR.** (2 cr; prereq 1504)
Theory and practice in stage makeup. GrD
- 1504f,w,s,su. ELEMENTS OF TECHNICAL THEATRE.** (4 cr; prereq 1101 or ¶1101)
The arts and crafts of the theatre: scenery, construction and painting, stage operation, theatre lighting, costuming. Laboratory. GrD
- 3513. TECHNICAL THEATRE PRODUCTION I.** (4 cr; prereq 1504) Josal, Brockman
Theory and practice of design and execution of stage scenery and properties. Laboratory. GrD
- 3515. TECHNICAL THEATRE PRODUCTION II.** (4 cr; prereq 1504) Montgomery
Theory and practice in design and execution of stage costuming and lighting. GrD
- 5510. DRAWING AND RENDERING FOR THEATRE DESIGNERS.** (2-4 cr per qtr; prereq 3513 or 3515 or grad student, \$)
Drawing and rendering skills for presentation of scene and costume designs. GrD
- 5512. ADVANCED PROBLEMS IN COSTUMING.** (4 cr; prereq 3515 or \$)
Theory and design of costumes. Projects. Laboratory. GrD
- 5514. ADVANCED PROBLEMS IN SCENE DESIGN.** (4 cr; prereq 3513 or \$) Josal
Theory and design of stage scenery. Reports and projects. Laboratory. GrD
- 5516. ADVANCED PROBLEMS IN STAGE LIGHTING.** (4 cr; prereq 3515, 3711 or \$) Montgomery
Theory of stage lighting. Projects and reports. Laboratory. GrD

Course Descriptions—Major Sequences

- 5518. ADVANCED PROBLEMS IN STAGE PROPERTIES.** (4 cr; prereq 3513 or §) Josal
Theory and design of stage properties. Projects and reports. Laboratory. GrD
- 5519. SOUND FOR THE THEATRE.** (2 cr; prereq 1504, §) Brockman
Theory and technique of producing and amplifying sound. Laboratory. GrD
- 5520. COSTUMING CRAFTS AND TECHNIQUES.** (4 cr per qtr [8 cr max]; prereq 3515, 5512 or §)
Theory and practice in costuming in professional and repertory theatres. Taught at Guthrie Theatre costume shop. GrD
- 5580. PROPERTIES CRAFTS AND TECHNIQUES.** (4 cr per qtr; prereq 3513, 5518 or §)
Theory and practice in creating stage properties in professional and repertory theatres. Taught at professional prop shop. GrD

Directing

- 3708. PLAY PRODUCTION IN THE SECONDARY SCHOOL.** (4 cr, §3711, §5711; prereq 1321)
Analysis and production of selected scenes. GrD
- 3711. STAGE DIRECTION.** (4 cr, §3708, §5711; prereq 1321, jr or sr)
Theory of direction: concept and analysis. Blocking and production of short scenes. GrD
- 5711. STAGE DIRECTION.** (4 cr, §3708, §3711; prereq 1321, sr or grad student)
For description, see 3711. GrD
- 5712. STAGE DIRECTION.** (4 cr; prereq 3708 or 3711 or 5711 and 3513, 3515, 3801) Adey
Theory of rehearsal and production problems and direction of two one-act plays. GrD
- 5714su. STAGING THE HIGH SCHOOL MUSICAL COMEDY.** (4 cr; prereq teaching experience or secondary education major, or §)
Experience by college students with high school students in staging musical comedy. Solo and group composition of musical numbers. Organic relation of form and content. Compositional elements: rhythm, dynamics, space, body design and gesture. Coordination of total musical comedy. GrD
- 5716. STAGE MANAGEMENT FOR THE THEATRE.** (4 cr; prereq written permission only)
Montgomery
Stage management as a specialized area. Theory and technique of rehearsal and performance: organization and management in educational, repertory, and regional theatre. GrD
- 5718. THEATRE MANAGEMENT AND PROMOTION.** (4 cr; prereq 1504, sr or grad student or §) Loppnow
Theory and practice in ticket office procedures, house management, publicity and promotion; problems in college, community, children's and professional theatre. GrD
- 5720f,w,s. PLAYS IN PRODUCTION AND PERFORMANCE.** (2-4 cr [limited to 6 cr]; prereq 5712 and written permission) Adey
Work on campus or with a community, high school, touring, or professional theatre group for experience in stage direction. GrD
- 5721, 5722. PRODUCTION OF TELEVISION DRAMA.** (4 cr per qtr; prereq 5712 or equiv and § for 5721...5721 for 5722)
Televised drama produced and analyzed with reference to adaptation of techniques and theory from stage production. Primarily for theatre majors. GrD
- 5780f,w,s. ADVANCED STAGE MANAGEMENT.** (2-4 cr [limited to 6 cr]; prereq 5716 and written permission) Montgomery
Practical experience in stage management for specific University Theatre productions; rehearsal and performance. GrD

General

- 3412f,w,s. HONORS COURSE: TUTORIAL SEMINAR IN THEATRE ARTS.** (0-3 cr or [limited to 3 cr for cum laude, magna cum laude...3412X up to 3 cr for summa cum laude]; prereq candidate for honors in theatre arts and Δ)
Independent reading and research in preparing honors thesis or creative project.
- 3980f,w,s,su. DIRECTED INSTRUCTION.** (1-3 cr per qtr [8 cr max]; prereq completion of course in which teaching will be done and Δ)
- 5100. THEATRE PRACTICUM.** (2-6 cr per qtr; prereq Δ, §) Josal
Individual creative projects in production of approved plays. Playwriting, directing, acting, design. GrD

5110f,w,s,su. THEATRE PERFORMANCE. (1 cr per qtr [9 cr max]; S-N only; prereq written permission after casting and/or assignment to a production) Adey
Participation in rehearsals and performances of a University Theatre major production. Credit given for the quarter the performance takes place. GrD

5950. TOPICS IN THEATRE. (1-5 cr per qtr [12 cr max]; prereq * and Δ)
Credits and prerequisites designated according to the nature of the topic. For topics, see current *Class Schedule*.

5970f,w,s,su. DIRECTED STUDIES. (2-6 cr per qtr; prereq 9 cr in theatre, *, Δ)
Guided individual reading or study.

Theological Study Preparation

Staff—Chairman, Richard B. Mather, 321a Folwell Hall

Adjunct Faculty—Professors: Altholz (History), Hopkins (Philosophy), Johnson (Sociology), Mather (East Asian Languages)

Associate Professor: Kraabel (Classics)

Assistant Professor: Paradise (Middle Eastern Studies)

The pretheology major is one of a number of approaches to preparation for study at a seminary; departmental majors such as history, sociology, classics, Hebrew, or philosophy are acceptable to most seminaries. Students interested in religious studies but not in entering a seminary should not select this program (see Religious Studies listing). Those preparing for seminary training, whether they elect this program or not, are urged to consult the adviser in 114 Johnston Hall. Approval of one of the staff listed above is needed to major in the program.

Students preparing to enter particular seminaries or graduate theology departments should procure statements of specific requirements or recommendations from the seminary or department.

The current catalogs of most seminaries in the United States and Canada are on file in 114 Johnston. The program adviser can help with arrangements for interviews or visits to nearby seminaries.

B.A. MAJOR SEQUENCE

Required Preparatory Courses—Phil 1001 or 1002; Psy 1001; Greek and/or Hebrew strongly recommended (depending on seminary selected)

Major Requirements—Phil 3002, 3003, 3004

3xxx and 5xxx courses (no more than 25 percent on S-N grading) selected as follows: two from studio arts, art history, music, or theatre arts; two in ancient history, one in medieval-Renaissance history, two in modern history; two English courses; two humanities, classics, foreign literature in translation, modern foreign language, Greek, Hebrew, or Latin courses; three anthropology, economics, geography, political science, sociology, speech-communication, or psychology courses.

All courses for the major, whether specifically required or not, must be completed at C or higher levels.

TURKISH

See Near and Middle Eastern Studies.

Urban Studies (Urbs)

Staff—*Coordinator*, John S. Adams, 909 Social Sciences Building

Adjunct Faculty—Professors: Berman (History), Borchert (Geography), Clemence (Architecture), Coen (Economics), Donohue (Sociology), Gerlough (Civil Engineering, urban transportation), Harris (Social Studies), Lukermann (Geography), Maki (Agricultural Economics), Naftalin (Public Affairs), Raup (Agricultural Economics), Rowe (Anthropology), Snyder (Psychology), Zaidi (Industrial Relations Center)

Associate Professors: Adams (Geography), Modell (History), Scott (Political Science), Wattenberg (Social Work)

Assistant Professors: Aldrich (Sociology), Dewar (Public Affairs), Gleeson (Public Affairs), Krieger (Public Affairs), Nimtz (Political Science)

Instructors: Ismach (Journalism), Prell-Foldes (Anthropology)

This cross-disciplinary major provides integrative urban studies courses, accredited fieldwork experiences, and introductory work in a number of urban-oriented disciplines. The three "degree tracks" are designed to provide foundations for students who wish to enter the urban professions to develop the needed specialized skills as well as to undertake graduate study in: urban planning, law, social welfare, or the social and environmental sciences. The Urban Studies advising office, 952 Social Sciences Building (373-4613), offers current information on fieldwork, courses, research, and community service opportunities. Advisers from the contributing disciplines are available.

B.A. AND B.S. DEGREE PROGRAMS

Three degree programs are available: 1) a general B.A. program that provides a broad survey of urban-related disciplines; 2) a B.S. program with emphasis on quantitative skills, fieldwork and/or internship experience; and 3) a B.A. degree preparatory to graduate work in one of the disciplines contributing to urban studies.

Although each student develops an individual major program, there are certain required components in all programs. They include: two urban studies colloquia, two workshops or approved advanced seminars, at least 8 credits in quantitative skills courses, and at least 8 credits in electives. Fieldwork and a disciplinary concentration are also required. Full listings of required and recommended components may be obtained at 952 Social Sciences Building.

3101f, 3102w, 3103s. URBAN STUDIES COLLOQUIA. (2 cr per qtr; S-N only; prereq ♯, limited to 20 students per group) Staff
Introduction to urban problems and problem-solving techniques. Typically two or more colloquia are offered each quarter. GrC

3500f,w,s. WORKSHOPS. (4 cr per qtr; prereq Jr or sr, ♯) Staff
Project-focused workshops, usually with substantial field-experience components. Typically two or more workshops offered each quarter.

3900f,w,s. INTERNSHIP. (1 to 6 cr per qtr [15 cr max]; prereq jr, sr, and Δ) Staff
Internships arranged for any quarter or summer term. A weekly seminar to integrate the internship experience with the academic program should be taken during the internship.

3950. HONORS SEMINAR. (Cr ar; prereq approval of Urban Studies honors representative)

3970. DIRECTED STUDIES. (Cr ar; prereq ♯)
Guided individual reading or study.

URDU

See South Asian Studies.

Women's Studies (WoSt)

Staff—Chairwoman, Gayle Graham Yates, 492 Ford Hall

Adjunct Faculty—Associate Professors: Faunce (Psychology), McNaron (English, on leave 1976-77)

Assistant Professors: Register (Women's Studies), Roshwald (Comparative Literature), Spector (Anthropology), Yates (Women's Studies)

Instructors: Jones (Anthropology), Kingston (Psychology), Truax (Minnesota Women's Center)

Lecturer: Short (Law)

The Women's Studies program provides opportunity to examine the myths and unquestioned assumptions that have characterized generalizations about women. Its scholars and students have opportunity to review the viability of the dichotomous vision of reality that has dominated Western thought—the perception of intellect and emotion, learning and experience, male and female gender as discontinuous.

B.A. MAJOR SEQUENCES

Required Preparatory Courses—1005, 1006

Major Requirements—Sequence A—48 cr in adviser-approved courses, 24 of them in WoSt courses (including 12 cr in 3900)

Sequence B—48 cr in adviser-approved courses (including 12 cr in 3900)

A list of courses in other disciplines that may be included in major programs may be obtained from the Women's Studies office.

Courses supplementing and expanding the curriculum described below are continually being added to the program. The *Class Schedule* or the Women's Studies office can provide current information.

1005, 1006. INTRODUCTION TO WOMEN'S STUDIES. (4 cr per qtr)

History of feminism, nationally and locally; women's issues; biological and/or learned behaviors. GrC

1977. THE PSYCHOLOGICAL ENVIRONMENT OF WOMEN. (4 cr)

Behavioral and social sciences principles and theories that have unique applications to the development, growth, and behavior of women. GrC

3001-3002. WOMEN: BIOLOGY AND BEHAVIOR. (4 cr per qtr; prereq Biol 1011 or Phs1 1001 or *)

Biological aspects of being a woman. Material from many disciplines. For women and men. GrB (3001 only)

3103. THE MODERN FEMINIST NOVEL. (4 cr; prereq English composition or equiv)

Twentieth-century novels by British and American women. GrD

3301. WOMEN: A SENSE OF IDENTITY. (3-5 cr, \$5301; prereq #)

Sex roles (social expectations, personal values, and personal behaviors). Applications of success analysis, strength identification, communication training, goal setting, and behavior rehearsal to affirm and develop the potential of women.

3302, 3303. COMPARATIVE STUDY OF WOMEN. (4 cr per qtr; prereq introductory courses in one or two social sciences)

Comparative treatment of and theories about women from the points of view of social science disciplines. Research methods for asking questions about women. GrC

3501. WOMEN AND LITERATURE. (4 cr; prereq introductory work in literature)

The position of women, white and nonwhite, as writers and critics and as subjects for other writers. Usually limited to Western literature. GrD

3502. WOMEN AND THE ARTS. (4 cr; prereq introductory work in music, art, drama, dance, film, or other arts)

The position of women, white and nonwhite, as performing artists or subjects for others. Focuses will vary. GrD

Course Descriptions—Major Sequences

- 3631. WOMEN IN THE OLD TESTAMENT.** (4 cr)
The Hebraic concept of womanhood, feminine virtue and vice, woman's roles and functions, her status, the ideals and symbols she represents. GrD
- 3701. WOMAN'S LITERARY QUEST FOR SELF-REALIZATION.** (4 cr; prereq 5 cr in literature)
Woman's quest for self-fulfillment, explored through classics in modern fiction. English, French, Russian, and Hebrew writers, to provide a wide comparative perspective. GrD
- 3900. SENIOR SEMINAR.** (4 cr per qtr; prereq sr and Δ)
Directs knowledge and methodology gained from courses and experience toward topics of an interdisciplinary nature with focus on women.
- 3910. TOPICS IN WOMEN'S STUDIES.** (4 cr per qtr [12 cr max])
Topics specified in the *Class Schedule*.
- 3970. DIRECTED STUDIES.** (1-15 cr per qtr; prereq * and Δ)
Independent study to pursue individual interests.
- 3980. DIRECTED INSTRUCTION.** (1-5 cr per qtr; prereq * and Δ)
Undergraduates serve as teaching assistants for courses in which they are qualified.
- 3990. DIRECTED RESEARCH.** (1-5 cr per qtr; prereq * and Δ)
- 5011. IMAGES OF WOMEN WITHIN THE COURTLY LOVE TRADITION.** (4 cr)
Literature, art, and music of the 12th to 17th centuries in France, Italy, and England; conventional postures and images for women within courtship patterns. GrD
- 5301. WOMEN: A SENSE OF IDENTITY.** (3-5 cr, §3301; prereq *)
For description, see 3301. GrC
- 5311. WOMEN AND THE LAW.** (4 cr)
The legal system as it relates to women. Areas of criminal law, welfare law, employment law, corporate law, alternative delivery systems for legal service, and legal education. GrC
- 5910. TOPICS IN WOMEN'S STUDIES.** (4 cr per qtr [12 cr max])
Topics specified in *Class Schedule*.
- 5970. DIRECTED STUDIES.** (1-5 cr per qtr [12 cr max]; prereq * and Δ)
Guided individual reading or study.

YIDDISH

See German.

Zoology (Zool)

College of Biological Sciences

Staff—Head, Magnus Olson, 108 Zoology; *Director of Undergraduate Studies,* Martin Blumenfeld, 317 Zoology

Professors: Herman, Kerr, McKinnell, Merrell, Olson, Schmid, Underhill, Wallace, Warner

Associate Professors: Barnwell, Birney, Gilbertson, Goldstein, Huver, Johnson, Regal, Sheridan, Sinha

Assistant Professors: Blumenfeld, Rottmann

Zoologists study animals: their form, function, development, systematics, and evolution.

General Education—A course especially appropriate for nonmajors is Biol 1106.

Biol 1106f,w,s,su. GENERAL ZOOLOGY. (5 cr; prereq Biol 1011) Olson, Schmid, Underhill
Survey of animal phyla; considerations of structure, function, behavior, adaptation, and evolutionary relationships. GrB

3097w. POPULATION BIOLOGY. (4 cr; prereq Biol 3032 or GCB 3022) Merrell
Population biology. Adaptation of natural populations to physical and biological environments; genetic mechanisms by which they respond to environmental change. GrB

3333f. THE BIOLOGY OF CANCER. (2 cr; prereq Biol 1011) McKinnell
Biological aspects of etiology, phylogeny, and cellular processes involved in neoplasia. Growth and differentiation of normal and cancer cells. History of cancer research.

- 3960s. RESEARCH TOPICS IN ZOOLOGY.** (1 cr; S-N only; prereq sr or 3rd-4th jr zoology major)
Lectures and discussion on current research in the department.
- 3980f,w,s. UNDERGRADUATE SEMINAR.** (1 cr; prereq sr, CBS major, §)
Biological topics of current interest.
- 3990f,w,s. INDIVIDUAL WORK IN SOME SPECIAL DISCIPLINE.** (Cr ar; prereq Biol 1106 or 3011, §)
- 5052f. GENERAL AND COMPARATIVE EMBRYOLOGY.** (5 cr; prereq Biol 1106 or 3011)
McKinnell
Embryological development of vertebrates. GrB
- 5066f,s. HISTOLOGY.** (5 cr; prereq Biol 1106 or 3011) Olson
Microscopic structure of tissues and organs. GrB
- 5071s. INVERTEBRATE BIOLOGY.** (5 cr; prereq Biol 1106 or 3011 or §) Barnwell
Morphology, physiology, behavior, ecology, and evolution of the invertebrate groups.
Laboratory study of living marine, freshwater, and terrestrial representatives. GrB
- 5077s. INTRODUCTORY ORNITHOLOGY.** (5 cr; prereq Biol 1106 or 3011) Warner
Laboratory and field course in structure, classification, distribution, migration, habits, habitats, and identification of birds. Weekend trips. GrB
- 5093f. INTRODUCTION TO ANIMAL PARASITOLOGY.** (5 cr; prereq Biol 1106 or 3011)
Wallace
Parasitic protozoa, worms, and arthropods and their relation to diseases of human and animal life. GrB
- 5096su. EVOLUTION.** (4 cr; prereq Biol 1106 or 3011) Merrell
Evidence for and causes of biological evolution. GrB
- 5104s. COMPARATIVE ANIMAL PHYSIOLOGY.** (5 cr; prereq Biol 1106 or 3011, Chem 3302 or §) Schmid
Passive environmental stresses upon organisms; lack of equilibrium. Physiological adaptations that allow maintenance of homeostasis. Biological mechanisms by which stresses are counteracted.
- 5107f. PROTOZOOLOGY.** (4 cr; prereq §) Kerr
Taxonomy, morphology, physiology, development, and genetics of free-living protozoa.
- 5114f,w. GENERAL PHYSIOLOGY.** (3 cr; prereq Biol 3011, 3021, Phys 1106 or 1295) Goldstein, Sheridan
Quantitative study of cell function; application of physical and chemical principles. Transport, electrical activity of cell membranes, cell contractility.
- 5115f,w. LABORATORY IN GENERAL PHYSIOLOGY.** (2 cr; prereq 5114 or ¶5114 or §)
Goldstein, Sheridan
Electrophysiological phenomena. Recitation and practical laboratory.
- 5121s. ICHTHYOLOGY.** (4 cr; prereq 15 cr incl Biol 1106 or 3011) Huver
Biology of fishes—development, systematics, anatomy, physiology, and ecology.
- 5124w. VERTEBRATE BIOLOGY.** (4 cr; prereq Biol 1106 or 3011) Underhill
Vertebrates—their biology, taxonomy, and distribution. GrB
- 5125f. VERTEBRATE FAUNA LABORATORY.** (2 cr; prereq 5124 and §; offered 1977 and alt yrs) Underhill
Vertebrate groups native to Minnesota and neighboring states.
- 5127s. COMPARATIVE MAMMALIAN REPRODUCTION.** (5 cr; prereq 5052 or 5104 or 6 cr equiv, §; offered 1977 and alt yrs) Sinha
Interdisciplinary evaluation of biological phenomena of reproduction—basic problems, current concepts and ideas. Lectures, discussions, independent studies/research or laboratory.
- 5128s. HERPETOLOGY.** (5 cr; prereq 5124 or §) Regal
Distribution, classification, and evolution of amphibians and reptiles. Physiological, morphological, and behavioral aspects of adaptive trends. Laboratory and lecture.
- 5129f. MAMMALOLOGY.** (5 cr, §Ent 5129; prereq 5124 or §) Birney
Recent families and orders of mammals of the world; genera and species of mammals of North America. Morphology, evolution, and zoogeographic history.
- 5132s. INTERCELLULAR COMMUNICATION.** (4 cr; prereq 5114, Biol 3032 or §; offered 1978 and alt yrs) Sheridan
Mechanisms of various forms of intercellular communication: synaptic transmission, hormone action, and transfer of small molecules via low resistance junctions. The role of the cell membrane in these processes. GrB

Course Descriptions—Major Sequences

- 5134w. GENERAL AND COMPARATIVE ENDOCRINOLOGY.** (3 cr; prereq Biol 3011, 3021, Chem 3302 or §; offered 1977-78 and alt yrs) Herman
Structure and function of invertebrate and vertebrate endocrine systems.
- 5135s. GENERAL AND COMPARATIVE ENDOCRINOLOGY LABORATORY.** (2 cr; prereq 5134, §; offered 1977-78 and alt yrs) Herman
Basic endocrine techniques. Research projects arranged in consultation with instructor.
- 5136w. ADVANCED GENERAL AND COMPARATIVE ENDOCRINOLOGY.** (2 cr; prereq 5135 or §; offered 1976-77 and alt yrs) Herman
Lectures on areas of current endocrinological interest.
- 5144w. PARASITIC PROTOZOA.** (4 cr; prereq 15 cr incl Biol 1106 or 3011, §) Wallace
Structure, life histories, and economic relations of protozoal parasites of man and animals; laboratory diagnosis.
- 5146w. EXPERIMENTAL PARASITOLOGY.** (4 cr; prereq 5093 or §; offered 1976-77 and alt yrs) Gilbertson
Discussion and laboratory to illustrate relationships between metazoan parasites and their hosts.
- 5164s. FINE STRUCTURE OF ANIMAL CELLS.** (4 cr; prereq Biol 3032 or GCB 5051, §) Johnson
Cell structure and function approached on an organelle basis; ultrastructural research. Cell membranes, macromolecular synthesis, bioenergetics, cell movement.
- 5171f. GENETICS AND SPECIATION.** (4 cr; prereq 15 cr biology incl genetics, §) Merrell
Application of genetic principles to problems of speciation and evolution.

Courses Offered at Lake Itasca Field Biology Station

- 5807su. PROTOZOOLOGY.** (5 cr; prereq Biol 1106)
- 5814su. NATURAL HISTORY OF INVERTEBRATES.** (5 cr; prereq Biol 1106)
- 5819su. NATURAL HISTORY OF VERTEBRATES.** (5 cr; prereq Biol 1106)
- 5834su. FIELD ORNITHOLOGY.** (5 cr; prereq Biol 1106)
- 5843su. ANIMAL PARASITES.** (5 cr; prereq Biol 1106)
- 5869su. PHYSIOLOGICAL ECOLOGY.** (5 cr; prereq course in physiology or ecology)

III. CLA PREPARATION FOR DEGREE WORK IN OTHER COLLEGES

Undergraduate study in the College of Liberal Arts or a comparable institution is necessary for admission to many baccalaureate or professional degree programs, at Minnesota or elsewhere, and to graduate programs without exception. The requirements commonly include English composition and minimum grade averages (usually C for undergraduate programs, B or higher for graduate). Other requirements vary; consultation with appropriate offices and bulletins on such questions—for example, the acceptability of S-N grades for graduate admissions—is always advisable.

Admission and achievement policies of University of Minnesota professional and advanced programs that involve CLA preparatory study are described briefly in the following pages. Bulletins of University colleges and programs may be obtained at the Morrill Hall information window (first floor).

CLA professional baccalaureate or graduate programs are available in the Schools of Journalism and Mass Communication, Library Science, Public Affairs, and Social Work.

School of Architecture and Landscape Architecture

The School of Architecture and Landscape Architecture offers two professional degrees: master of architecture (M.Arch.) and bachelor of architecture (B.Arch.). The M.Arch. degree normally requires 4 years of undergraduate and 2 years of graduate study. For a limited period, the school will continue to offer the 5-year B.Arch., an undergraduate professional program.

The M.Arch. degree may be based on the 4-year B.A. program with a major in architecture, the bachelor of environmental design program in the Institute of Technology, or similar programs offered at other institutions.

Applicants for admission should consult an adviser in 110 Architecture (373-2198). Applicants must file for admission on form AR110 by May 1 before the September for which admission is sought. See also the Architecture section of this bulletin and the 1975-77 *Institute of Technology Bulletin*.

College of Biological Sciences

B.S. degrees with majors in biology, biochemistry, botany, microbiology, and zoology and individually designed programs, available in this college, require 84 credits of background in biology, the mathematical and physical sciences, and the liberal arts. Specific requirements are Biol 1011, Chem 1004-1005 or 1031-1032, and Math 1211-1221 (1231 recommended). Students planning to enter CBS should consult its bulletin and advisers in PI90 Kolthoff Hall.

(B.A. degrees in biology and microbiology may be earned in CLA. See the alphabetical listings in Section II.)

College of Business Administration

The College of Business Administration offers two programs for the bachelor of science degree: regular and accounting. Students interested in admission to the college should obtain a Prebusiness Planning Folder from a college counseling office or from 225 Business Administration Tower.

The prebusiness program combines liberal education with introductory courses in accounting, statistics, and economics. Because of the widening social responsibilities of business management, students are urged to choose elective courses outside of business itself.

CLA Preparation for Degree Work in Other Colleges

To be considered for admission to the college a student must present a minimum of 80 credits from a recognized college or university. A 2.50 GPA is required for admission to the regular program, and 2.70 for admission to the accounting program.

CLA students preparing to enter the college must meet these prebusiness requirements:

English composition requirement.

Mathematics—10 or more cr, including calculus. (Math 1111 or 1131 or 1201, 1142 or 1211 and 1221); Psy 1001; Soc 1001. Students with inadequate preparation may be required to take Math 0009 before taking 1111 or 1131. Students who plan to go beyond elementary calculus should take 1211 and 1221 rather than 1142.

Group B (8 cr)—Courses including laboratory chosen from biological or physical science. Among courses that may be used to meet this requirement are Ast 1015; BioC 1302; Biol 1011, 1103, 1106; Bot 1009; Chem 1004-1005; Geo 1001, 1002, 1011; NSci 1004-1005, 1006; Phys 1015, 1025, 1031, 1032, 1041, 1042, 1051, 1052, 1061, 3801. The Prebusiness Planning Folder lists others.

Group C (8 cr)—Econ 1001, 1002.

Group D (8 cr)—All courses in Afro, AmIn, ArtH, ArtS, English and foreign literature, Hum, Mus, Th; AmSt 1101 through 3970; Arch 1021, 5051, 5052, 5053, 5054, 5055, 5056; Clas 1001 through 1046; Spch 1104, 3201, 3202, 3203, 3204, 5201.

Business courses (12-13 cr)—Acct 1050-1051; QA 1050

Students planning to enter the accounting program—Comp 1027.

Electives to complete 80 credits.

School of Dentistry

The program in dentistry for the D.D.S. degree, open to men and women, admits a beginning class once a year, in the fall. A B.S. degree is granted to students who have satisfactorily completed 3 years of pre dental liberal arts study and 2 years of dentistry.

Admission—A minimum of 135 credits from an accredited liberal arts college is required. The scholastic average necessary for consideration is C. Admission is on a competitive basis, however, and an average well above C is necessary to achieve admission.

Required Courses and Credits—(science courses must include laboratory instruction):

English—12 cr in basic English, with such courses as composition, literature, etymology, speech, or humanities.

Mathematics—Background at least through college algebra as demonstrated by college validation or credit: 1111 or 1201. For graduate work beyond the D.D.S., additional credits in higher mathematics and the sciences are recommended.

General Chemistry—12 cr: 1004-1005-1006 or 1004-1005 and 3100-3101.

Organic Chemistry—8 cr: 3301-3302.

Biology—10 cr: 2 quarters of biology or 1 quarter each of biology and zoology—Biol 1011, 1106, or 3011.

Physics—10 cr. Calculus-based physics should be taken by students who plan advanced work in dentistry: 1031-1032 or 1104-1105-1106.

Psychology—5 cr: 1001.

Required courses must be completed by the end of the academic year prior to the fall of enrollment. Courses taken in the summer preceding fall admission are not acceptable.

Only under unusual circumstances will S credits be accepted for required courses. S credits in elective courses should not exceed 10 percent for 3-year applicants (135 credits) and 15 percent for 4-year applicants (180 credits). I (incomplete) grades are looked on with disfavor by the Admissions Committee. All I grades and excess of one W (withdrawal) grade per year of academic study must be explained in the application.

Admission Tests—The required Dental Admission Test (DAT) is given three times a year, usually in October, January, and April. It is wise to take the test soon after required science courses are completed; it must be taken no later than October in the academic year prior to the fall of requested enrollment. Although the test generally measures aptitudes rather than special knowledge, review of biology, general chemistry, and organic chemistry is advisable. Application forms for the DAT may be obtained from the Office of Admissions and Records (6 Morrill Hall), the School of Dentistry, or 30 Johnston Hall.

All candidates must take the Minnesota Multiphasic Personality Inventory and the Strong-Campbell Interest Inventory. Instructions for taking these tests will be sent to each applicant after application through the American Association of Dental Schools Application Service. The service reports test scores to the school.

Residence Requirements—First priority is given to Minnesota residents, second to residents of neighboring states that do not have dental schools, and third to other nonresidents who have acceptable reasons for attending the University School of Dentistry. Nonresidents are accepted only if their scholarship and other qualifications indicate unusual promise.

Further information about application procedures, admission, qualifications, and related matters may be obtained from the CLA Health Sciences advising office, 30 Johnston Hall; the School of Dentistry office, 15-106 Health Sciences Unit A; or the *School of Dentistry Bulletin*.

College of Education

Students seeking state of Minnesota teacher's certificates upon graduation from the University of Minnesota (Minneapolis and St. Paul Campuses) must complete the B.S. program in the College of Education. Students usually begin as CLA freshmen and transfer to the College of Education after 1 or 2 years of general education.

Admission—Admission to the College of Education after 1 or 2 years of preeducation studies requires at least a 2.00 average in college course work and at least a 2.50 in courses in the major field. Students who have met the freshman and sophomore requirements as specified in the *College of Education Bulletin* will be given preference.

Since 1974 the college has admitted virtually all applicants who met admission criteria. Secondary teaching programs admit for fall and spring quarters. Elementary and physical education programs admit for fall and winter quarters.

Students applying for elementary education and recreation and park administration must apply before the second week of the regular quarter preceding that in which admission is desired. Applications for other programs should be filed early in the regular quarter preceding that in which admission is desired.

Requirements in Drug Education and Physical Education—Minnesota law requires that candidates for teaching certificates complete, before graduation, a

CLA Preparation for Degree Work in Other Colleges

course in drug education (PubH 3004) and 3 credits in appropriate physical education activity courses (they may complete this work before applying for transfer to the college).

One-Year Preeducation Programs in CLA—Students planning to enter College of Education programs in art education, business education, distributive education, music education, physical education, and recreation and park administration normally spend 1 year in CLA. To transfer, they must complete 45 credits with 2.00 overall and 2.50 major-course averages. Those seeking art, industrial, music, and physical education majors must meet special requirements; information about these requirements is available in the *College of Education Bulletin*.

Requirements for Transfer to Elementary Education—Course requirements for the 2 preparatory years before entering the elementary education curriculum are specifically outlined; prospective applicants should obtain full information from the Education Career Development Office or from the college bulletin. A grade average of 2.00 is required (preference is given to those with averages of 2.50 or higher). Only A-N credits are accepted, except in elective and minor courses. Students are admitted to this program only in fall and winter quarters.

Two-Year Preeducation Programs in CLA—Most other College of Education programs require 2 years of CLA work—about 90 credits. Applicants must meet substantially the English composition and distribution requirements necessary for CLA B.A. degrees, and must present 15 credits in the proposed major field with a 2.50 average and sometimes 10 credits with a 2.00 average in a minor field (all graded on the A-N basis). School health major requirements differ.

Information about education programs is available at the Education Career Development Office, 1425 University Avenue Southeast, Minneapolis, Minnesota 55455.

School of Journalism and Mass Communication

A B.A. or its equivalent is the minimum requirement for admission to the Master's and Doctor's programs. If the undergraduate major is not in journalism, 15 to 18 credits of preparatory work is usually required. Selection of preparatory courses must be approved by an adviser. Acceptable professional experience may sometimes be applied toward prerequisite requirements.

M.A. programs may lead to professional work in news and editorial, broadcast, science, photographic, or urban journalism or in advertising, or they may be preparatory for further graduate work. The doctoral program, usually though not always leading to academic careers, offers specializations in communication theory and research methodology, history of journalism, communication agencies as social phenomena, or international mass communication.

Additional information is available in the school office, 111 Murphy Hall (373-3565).

Law School

Requirements for Admission and for Degrees in Law—The Law School offers the professional degree juris doctor (J.D.), which qualifies those who earn it for the bar examination and for admission to practice. The course of study requires 3 academic years in the Law School.

Admission to the Law School requires the B.A. or its equivalent. No particular prelaw college program is recommended; in fact, the Law School is interested in a

student body with varied backgrounds, and students are encouraged to follow their own interests in deciding on their undergraduate majors. Applications for admission must be submitted by March 1 for the class entering the school the following September.

Details of admission requirements and the Law School program may be found in the *Law School Bulletin*. Prelaw scholastic records and the results of the Law School Admission Test given by the Educational Testing Service are among admissibility criteria. The test is given five times each year at the University and at test centers throughout the world. Students must take the test by February of the year in which they make application for admission; taking it earlier, however, is recommended. Information pamphlets and application blanks for the test may be obtained at the office of the Law School, 125 Fraser Hall; the Student Counseling Bureau, 101 Eddy Hall; or the Educational Testing Service, Princeton, New Jersey.

Library School

Minimum preparation for a professional career in librarianship is provided by an M.A. degree. The prerequisite for admission to the M.A. program is a B.A. degree with a broad academic preparation in the humanities, social sciences, and sciences and a strong concentration in at least one subject field. Inquire at the Library School office, 419 Walter Library, about preprofessional planning during the junior and senior years.

Medical School

Most students admitted to the Medical School complete 4-year degrees before they begin medical study. Prospective students must plan such programs.

Premedical Advising—Premedical advisers are available in the CLA Pre-Health Science Advising office, 30 Johnston Hall, for aid in premedical planning and guidance in application to medical schools. The Pre-Health Science Library, 30 Johnston Hall, provides career information about medical and paramedical fields and admission information for all U.S. and Canadian medical schools. Information about tests required of applicants to the Minnesota schools is also available.

Premedical Requirements—There is no prescribed premedical major—any recognized collegiate-level major is acceptable. Natural science majors, contrary to common belief, have no advantage over liberal arts majors for admission; indeed, the Medical School believes that liberal arts studies contribute greatly to rounded professional preparation.

The Admissions Committee has approved the following courses as fulfilling the premedical requirements for the Minneapolis Campus Medical School: 12 cr English (Engl 1001-1002 or Comm 1001-1002, literature); mathematics through calculus (Math 1142 or 1211, 1221); Chem 1004-1005, 3100, 3101, 3301, 3302 (25 cr); Biol 1011 plus 5 cr of biology, zoology, or genetics; Phys 1104-1105-1106 or 1271-1281-1291 and 1275-1285-1295; at least 27 cr graded A-N in humanities, social science, foreign language, or other liberal arts courses (humanities and literature recommended).

Premedical students with outstanding academic records in science and mathematics, especially those who contemplate careers in research or academic medicine, will be strongly advised to elect work in these fields beyond the basic requirements. Reading knowledge of a foreign language, though not a requirement for admission, is recommended for students interested in medical research or graduate medical training.

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Application Procedures—Application forms for the American Medical College Application Service (AMCAS) may be obtained in 6 Morrill Hall or in the Pre-Health Science Advising office. They must be filed before November 15 preceding the fall quarter in which entry is desired; it is advisable to submit them as soon after July 1 as spring quarter grades are available. Each applicant must take the Medical College Admission Test (spring MCAT preferred), the Strong Vocational Interest Blank, and the Minnesota Multiphasic Personality Inventory. Information about registering for these tests is available in the Pre-Health Science Advising office.

The Medical School will request further information from an applicant after receiving the AMCAS application. Letters of evaluation will be requested, and students should plan for them early in their college program by selecting special programs, small classes, or other opportunities leading to direct and meaningful faculty contact.

Medical Schools in Minnesota—The University of Minnesota, Duluth, offers 2 years of rural-oriented medical education. Students who complete that program take 2 final years of training at the Minneapolis Campus Medical School. Mayo Medical School in Rochester is a 4-year school. The three Minnesota medical schools give preference to residents of Minnesota for admission.

Division of Medical Technology

The 4-year program in medical technology leads to the degree bachelor of science.

After completing 90 CLA credits, including all required courses, with satisfactory academic performance, a student may apply for admission to the professional program.

The following courses or their equivalents are prerequisites for admission to the junior year: Comp 1001-1002 or Comm 1001-1002 or exemption; Chem 1004, 1005, 1006, 3100, 3101, 3301, 3302; Biol 1011, 1106; Anat 1004; Math 1111 or 1201; Phys 1031, 1032; and MedT 1010, 1030, 1031, 1032. Electives must be limited to subjects that satisfy distribution requirements.

The *Medical Technology Bulletin*, which may be obtained at the Office of Admissions and Records, contains a suggested program for the first 2 years of preprofessional study. Students may also consult advisers in the Medical Technology office, 5307 Powell Hall (373-9670). Registration each quarter must be reviewed by an adviser.

Department of Mortuary Science

The 4-year curriculum of the Department of Mortuary Science leads to a bachelor of science degree. Students preparing to apply for licenses in states requiring less than a 4-year degree may receive verification of their attendance and indication of satisfactory completion of certain courses, supported by official transcripts, if they are in good standing and have completed minimum requirements set forth by the American Board of Funeral Service Education and the requirements of the state in which they wish to practice.

For entrance to the department, a student must have completed 90 quarter credits with grades of A, B, C, or S in the College of Liberal Arts of the University or in any other accredited university, college, or junior college.

Freshman and sophomore students in CLA will be assigned department advisers to assist in course selection, registration, and academic decisions. Registration must be approved by the adviser each quarter.

Program in Occupational Therapy

Each student should determine a core area of interest and select prerequisite courses in preparation for advanced courses. The department requires 15 3xxx or 5xxx credits outside the major area.

Admission Requirements—The 90 credits required for admission must include work in the following courses or areas; Engl 1001-1002 or Comm 1001-1002 and speech, 15 cr; accounting, 3 cr; introductory courses in biology, chemistry, human anatomy, microbiology, public health, 23 cr; psychology, sociology, social science, anthropology, 16 cr; art, music, literature, theatre arts, humanities, 9 cr.

Students who plan to seek licenses in states other than Minnesota should request information about specific requirements. Information is available at the department office, 114 Vincent Hall (373-3870) and in the *Department of Mortuary Science Bulletin*.

School of Nursing

A 4-year curriculum leads to the B.S. degree; 1 year may be taken in CLA or any other accredited liberal arts college. The program, open to men and women, is designed to prepare students for entry-level positions in all fields of professional nursing.

Selection for admission is based on tests of academic ability and previous scholastic rank. Current information about admission requirements may be obtained from the School of Nursing office, 3313 Powell Hall (376-5562), or by consultation with faculty members. A CLA adviser in 30 Johnston Hall is assigned to assist prenursing students with course selection, registration, and academic planning.

The 45-credit requirement for the first prenursing year must include English composition (6 cr) or exemption, general chemistry (8 cr), general biology (4 cr), cultural anthropology (3 cr), and introductory sociology (3 cr). Remaining credits must be chosen from the distribution groups (since School of Nursing programs are heavy in Groups B and C, special attention to Groups A and D is recommended).

After admission as sophomores, students continue general education courses and start courses in the nursing major. An approximate balance between the two areas is maintained. Further information about admission procedures appears in the School of Nursing minibulletin.

Program in Occupational Therapy

The course in occupational therapy, requiring 4½ years of study, leads to the bachelor of science degree.

Preparation for professional study in occupational therapy requires 90 credits in a college of liberal arts in courses selected to meet the group distribution requirements outlined in the *Occupational Therapy/Physical Therapy Bulletin*. Students who complete these courses with a high C average in the sciences are eligible to apply for admission.

During the junior and senior years hospital and community agency practice is coordinated with theoretical courses. In the senior year, 6 months of full-time individual fieldwork education is scheduled in hospitals, institutions, and community centers.

Freshman students should see advisers in the CLA Health Sciences advising office, 30 Johnston Hall. Sophomores should follow the registration procedure outlined in the *Occupational Therapy/Physical Therapy Bulletin*. For detailed

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information, see the bulletin or call the program office, 271 Children's Rehabilitation Center (373-9024), for an appointment with a faculty member.

College of Pharmacy

The College of Pharmacy awards two professional degrees.

The B.S. in pharmacy is offered for 3 years of professional study preceded by a 2-year preprofessional program. The degree is one of the qualifications for examination for licensure as a registered pharmacist.

The doctor of pharmacy (Pharm.D.) is a professional degree offered to selected candidates who have either completed the second year of the 3-year professional curriculum in pharmacy at Minnesota or who have been awarded a B.S. degree in pharmacy from any accredited college of pharmacy. The goal of the Pharm.D. program is to prepare therapeutic consultants for work in clinical settings in which expertise in patient drug use is necessary.

The 2-year preprofessional program, comprising 90 credits, is offered to students in the College of Liberal Arts as a prerequisite for admission to the professional program. The program includes Chem 1004-1005-1006, 3301-3302-3303, 3305-3306; Biol 1011, 1106; Math 1111 (higher level courses recommended for qualified students); Phys 1031-1032 (higher level courses recommended for qualified students); Econ 1001-1002; Comm 1001-1002 or Comp 1001-1002; and electives to fulfill distribution requirements in Groups C and D.

Application for admission to the College of Pharmacy is made through the Office of Admissions and Records, 6 Morrill Hall. Applications, accompanied by an official transcript, should be filed between October 15 and April 15 of the academic year preceding the fall term of desired enrollment. A Pharmacy College Admission Test is required of all applicants. Dates for this examination are published annually. In making judgments on admissibility of applicants, the Admissions Committee considers such criteria as honesty, industry, leadership ability, maturity, motivation, and moral character. The committee reviews completed applications and notifies students of acceptance as quickly as possible.

Additional information can be obtained from the College of Pharmacy office, 100 Appleby Hall (373-7997) or the health sciences adviser, 30 Johnston Hall (373-2912).

Program in Physical Therapy

The 4-year course in physical therapy leads to a bachelor of science degree. The first 2 years are spent in the College of Liberal Arts. To be considered for entrance to the professional program, a student must have completed 90 credits, including specified required courses or their equivalents, with a high C average in basic sciences. The last 2 years plus a summer term are spent in the Department of Physical Medicine and Rehabilitation. The student must complete 600 hours of supervised clinical practice in physical therapy departments of affiliated hospitals.

For information about admission, students should consult advisers in the Physical Therapy office, 271 Children's Rehabilitation Center, or in the CLA Health Sciences Advising office, 30 Johnston Hall. Detailed information is available in the *Occupational Therapy/Physical Therapy Bulletin*.

School of Public Affairs

Professional study in the School of Public Affairs, a part of the College of Liberal Arts, is at the graduate level. It is designed to prepare public policy analysts, decision makers, administrators, and planners for positions in public service or for involve-

ment with public policy issues and planning in positions outside of government. The program consists of required courses in the policy process, program analysis, and quantitative methods, two substantive concentrations, and an arranged internship in the student's area of interest. The program normally covers 2 academic years and 1 summer. Further information is available in the *Graduate School Bulletin*.

School of Social Work

Recommended preparation for graduate study is described under the Social Work heading in Section II of this bulletin. A B.A. in social welfare or a B.S. in social work is a desirable prerequisite for entry into the master of social work (M.S.W.) program, but is not an absolute requirement; a Bachelor's degree in any field will be considered if the applicant presents 39 social science credits. Entrance requirements are described in the *Graduate School Bulletin* and the *Social Work Bulletin*.

Theological Study Preparation

Students preparing for seminary training may consult the adviser for this kind of study in 114 Johnston Hall. The CLA major program for pretheology students is described in Section II of this bulletin. The adviser can assist in devising individual programs, either through the specialized major or through other patterns of study. The major in religious studies, designed for those with interest in broad understanding of religious movements and values, may also serve preprofessional students.

University College

University College is the University's mechanism to provide University-wide flexibility in degree planning to undergraduates whose needs are not met by standard curricula. UC houses four degree programs on the Minneapolis Campus.

The Inter-College Program (ICP) allows students to design individual curricula leading to Bachelor's degrees. The degree is based on a student-designed, faculty-approved program of 190 or more credits with concentrations in two or more colleges. Additional information is available in 105 Walter Library.

Experimental College (EC) is based on the "community of learners" principle. Students take wide responsibility for creating their own degree programs and for assisting other students, as well as for maintaining the college as a self-governing unit. Additional information is available in Room 306, 1507 University Avenue S.E., Minneapolis, Minnesota 55414.

University Without Walls (UWW) allows students who find it impossible to use the University's resources in the usual manner to pursue degree programs. Students who are unable to attend classes on campus but who have clear learning objectives may gain additional information in 201 Westbrook Hall, University of Minnesota, Minneapolis, Minnesota 55455.

The University Scholars Program allows a student and a faculty adviser the freedom to construct a baccalaureate degree program based on individually tailored educational goals and learning experiences. To be eligible, a student should have completed 2 years of college work and must be nominated by a faculty sponsor who agrees to serve as the student's adviser, supervising and assessing the student's work. Additional information is available in 105 Walter Library.

University College also sponsors a variety of cross-college course work and pilot experimental programs, including a foreign studies degree program. Information on current offerings may be obtained at 105 Walter Library.

IV. GROUP DISTRIBUTION AND ROUTE II COURSE LISTS

Courses Commonly Used to Meet Group Requirements

Listed below are courses often used to meet CLA liberal education (group distribution) requirements described on pages 8-9. A number of advanced Group B courses are not listed because their prerequisites satisfy requirement B. Lists of all acceptable courses, updated quarterly, can be consulted in college offices. Group designators follow descriptions of most courses in Section II of this bulletin. Group designations are not assigned to most directed studies, directed instruction, directed research, and topics courses. Such courses, when appropriate, may be used to meet group requirements upon approval of the Scholastic Committee.

These guidelines will aid in planning group distribution programs:

1. No more than 12 credits from any one department may be used to meet these requirements; but courses from one department may be used in different groups if so classified.
2. Honors courses or sections may be substituted for regular courses or sections unless otherwise specified.
3. Distribution requirements (except the Group B laboratory requirement) may be met by examination (consult your college office). CLEP examinations may be used for partial fulfillment.
4. Courses used to meet the English composition requirement and the B.A. second language requirement (including those used in Route II, part B) may not be used to meet distribution requirements.
5. Only students transferring from General College to CLA may use the GC courses in the group distribution course list to meet requirements.
6. At least one Group B course must include a laboratory. Courses accepted to meet this requirement are marked with asterisks (*).
7. The B.E.S. degree has no specific distribution requirements, though B.E.S. students are urged to meet the University's recommendations for programs of a broadly liberal nature.
8. Distribution requirements for B.F.A. programs may differ from those for B.A. or B.S. programs. A statement of B.F.A. requirements is available in the Music, Studio Arts, and Theatre Arts offices.

Group A—COMMUNICATION, LANGUAGE, SYMBOLIC SYSTEMS

The processes and methods of communication; spoken and written language; "silent language"; the rhetoric of mathematics, logic, and fallacy; linguistic structures. (Requirement: 8 to 10 credits—normally two courses)

Acct 1050; 1051
Afro 1101, 1102, 1103; 1221-1222-1223;
3225-3226; 3253
AmIn 1021-1022-1023; 1031-1032-1033;
3024-3025; 3034-3035
Anth 5161; 5413
CDIS 3101
Chic 1201, 1202, 1203; 3405; 3406; 3411
Clas 1015; 1048; 3048; 5101; 5107; 5120
ClPh All courses except 5970
Comm 1001-1002-1003 if not used to meet
English composition requirement
Comp (1001, 1002; 1003; 1006, 1007, 1008 if
not used to meet English composition re-
quirement); 1027; 3030; 3085; 3090;
5107; 5108

CSci All courses except 3002
Engl 3851; 5211; 5815; 5821; 5831; 5843;
5851; 5860; 5871; 5876

Foreign Languages

All non-English language skill courses not used to meet the second language requirement may meet the Group A requirement unless their group assignment in Section II indicates C, D, or no assignment.

GC—Students transferring from GC to CLA may use the following GC courses toward satisfaction of the Group A distribution requirement:

1402; 1405; 1411; 1414; 1416; 1442;
1443; 1451; 1452; 1454; 1461; 1462;
1463; 1464; 1465; 1471; 1472; 1474;

Group Distribution and Route II Course Lists

1533; 1824; 1884; 1886; 3463; 3464; 3466; 3472
Geog 3311; 3511; 3531; 3551; 5011; 5511; 5512; 5521; 5522; 5531
Hist 5011, 5012
Hum 1101
Jour 1001; 1011; 1101
Ling All courses except 3970; 5970
Math All courses except 0009; 1005-1006; 5005-5006; 5090; 5703
NSci 3201
Phil 1001; 3201; 3202; 3231; 3631; 5037; 5101; 5105; 5201; 5202; 5203; 5211; 5221; 5231; 5232; 5601; 5602; 5631
Psy 3801; 5841; 5861
PsyF 5121
PubH 5400; 5430; 5431; 5432; 5450; 5451; 5452; 5453; 5454; 5455; 5459; 5462
QA 1050
Soc 3801; 3802; 3803; 5801
Spch 1101; 1102; 1110; 3601; 3605; 3620; 3641; 5404; 5451; 5611; 5615; 5616; 5617; 5618; 5621
Slav 5701-5702
Stat All courses except 5071; 5301; 5401; 5601; 5900; 5911-5912-5913
SW 3989

Group B—THE PHYSICAL AND BIOLOGICAL SCIENCES

The observation, identification, description, experimental investigation, and theoretical explanation of natural phenomena; the explorations and methods of scientists of earth, space, matter, and life. (Requirement: 12 to 15 credits—normally three 4- or 5-credit courses, one to include a laboratory)

Courses listed are the ones most often used to satisfy this requirement. Those with asterisks carry laboratory credit; if they carry fewer than 4 credits they must be taken in conjunction with appropriate lecture courses to satisfy Group B.

Ast 1011; 1015*; 1021; 1025*; 1201
BioC 1301-1302*
Biol 1011*; 1101; 1102; 1103*; 1104; 1105; 1106*; 1107; 3011*; 3012*; 3051
Bot 1009; 1012; 3003*; 3071; 3109*; 3201*; 5103*; 5105*; 5111*
CDis 5301
Chem 1001-1002†*; 1004-1005†*; 1006*; 1031*; 1032*; 1132*; 1133*; 3100 with 3101*; 3301*
EBB 3001; 3004; 3101; 3111; 5014; 5029
FScN 1010; 1012; 1212; 1213
GC—Students transferring from GC to CLA may use the following GC courses toward satisfaction of the Group B distribution requirement:
1111; 1112; 1113; 1132; 1161; 1162; 1163; 1166; 1171; 1172; 1181; 3114; 3115; 3134; 1111 with 1177*; 1131*;
1132 with 1137*; 1133*; 1163 with Phys 1015 or 1025*; 1171 with 1177*; 1172 with 1177*
GCB 3002 (if 4 cr); 3022; 3201; 5030*; 5043
Geo 1001*; 1002*; 1007; 1008; 1011; 1012; 1013; 1014; 1111; 1601; 3101*; 3112; 3401
Geog 1425; 3431; 5423; 5445
MicB 3103*
NSci 1004*; 1005; 3011*; 3101; 3301
Phsl 1001; 1002; 1003; 3051
Phys 1014-1024; 1015-1025*; 1031-1032*; 1061*; 1071; 1075*; 1104-1105-1106*; 1121-1122*; 1271; 1281; 1291; 1275; 1285; 1295*; 3801*; 5091*
Psy 3031; 3061
WoSt 3001
Zool 3097; 5052*; 5066*; 5071*; 5077*; 5093*; 5124; 5132

Group C—MAN AND SOCIETY

Man's experiences and behavior in social environments seen through modes of governance, societal structures and customs, patterns of interaction and communication, religious forces, philosophical and psychological concepts, and the perspectives of history. (Requirement: 16 to 20 credits—normally four courses)

Afro 1015; 1025; 1036; 1441; 1442; 3001; 3002; 3003; 3011-3012; 3021-3022; 3061; 3062; 3072; 3075-3076†; 3081-3082†; 3091-3092†; 3098; 3340; 3401; 3455; 5001; 5002; 5072; 5101; 5102; 5103; 5401; 5402; 5551-5552; 5553
AgEc 3610; 5600; 5620; 5630
AmIn 1101; 1102; 3026; 3036; 3041; 3061; 5048; 5112; 5121; 5131; 5214; 5215; 5322; 5332; 5341; 5423; 5570
AmSt All courses except 1920; 3920; 3970
ANEJ 3117; 3501; 3502
Anth All courses except 3960; 3970; 3980; 3991; 5161; 5301; 5413; 5910; 5920
Arch 1001; 1002; 1003
Chic 1105; 1106; 1107; 3112; 3113; 3114; 3116; 3211; 3212; 3221; 3324; 3330; 3335; 3345; 3615; 3991-3992-3993
Chn 5463
Clas 1001; 1002; 1003; 1004; 1005; 1006; 1007; 1008; 1011; 1022; 1033; 1044; 1055; 1066; 1012; 1019; 1042; 1043;

Course Commonly Used To Meet Group Requirements

1045; 1061; 3042; 3070; 3071; 3072; 3073; 3219; 5004; 5005; 5006; 5007; 5008; 5013; 5014; 5017; 5018; 5020; 5061; 5070; 5071; 5072; 5073; 5085; 5086; 5089; 5110; 5145	IntR All courses except 3091; 5831; 5901; 5902; 5903
CJS All courses except 5970	Ital 3502; 3555; 5559; 5701-5702
CPSy All courses except 1970; 3980; 5310; 5970; 5990	Jour 1003; 1701; 3021; 3776; 5252; 5501; 5559; 5601; 5603; 5611; 5615; 5721; 5801; 5825
EAL 1001, 1002; 1032	JwSt 1034; 3034; 3115; 3125; 3126; 3142; 3143; 3521; 5621
Econ All courses except 3105; 3960; 3970; 5271; 5272; 5970	LAS 5101
Fren 3501; 3502; 3503; 3599; 3604	Lat 5794
FScN 1600	Lib 5101; 5221
FSoS 1001; 1002; 1025; 3015; 3260; 5001	MidE 3001; 3005; 3036; 3511; 3512; 3541-3542-3543; 3545; 3551-3552; 3555; 5001; 5121; 5123; 5125; 5405; 5406; 5546
GC—Students transferring from GC to CLA may use the following GC courses toward satisfaction of the Group C distribution requirement:	PA 3101, 3102; 3121; 3151; 5121; 5151; 5152; 5161, 5162; 5181; 5301; 5319; 5401; 5505; 5506; 5516; 5517; 5550; 5601-5602; 5691
1182; 1211; 1212; 1213; 1221; 1222; 1226; 1227; 1231; 1232; 1233; 1234; 1235; 1236; 1241; 1242; 1243; 1251; 1252; 1261; 1271; 1272; 1273; 1281; 1282; 1283; 1285; 1291; 1295; 1296; 1297; 1351; 1355; 1357; 1381; 1385; 1386; 1501; 1511; 1701; 1721; 1722; 1723; 1731; 1733; 1735; 1811; 1813; 1815; 1817; 1825; 1861; 1922; 3232; 3243; 3292; 3352; 3354; 3355; 3356; 3842; 3843; 3844; 3845; 3847	Phil 1002; 1003; 1004; 1410; 3001, 3002, 3003, 3004; 3302; 3614; 5003; 5004; 5005; 5008; 5012; 5020; 5021; 5033; 5034; 5035; 5036; 5041; 5042; 5043; 5044; 5046; 5052; 5054; 5055; 5068; 5076; 5301; 5302; 5311; 5321; 5324; 5414; 5415; 5521; 5611; 5612; 5613; 5615; 5621; 5701; 5781
Geog All courses except those assigned to Group A and Group B and 3950; 3970; 3990; 5701; 5900	Pol All courses except 3085; 3109; 3110; 3970
Ger 3501; 3511; 3512; 3513; 5331	Psy All courses except those assigned to Group A and Group B and 3950; 3960; 3970; 3990
Grk 5794	ReLS All courses except 5960; 5970; 5980
Heb 3131-3132	Russ 3501, 3502, 3503; 5501
Hist All courses except 3150; 3961; 3970; 3990; 5011, 5012; 5100; 5970	Scan 1504; 3501
HMed 5024; 5025; 5026; 5102; 5120-5130	Slav 1501, 3501, 3502, 3503
HSci 1711, 1712, 1713; 1811, 1812, 1813; 3211, 3242; 5111; 5825; 5924; 5925	Soc All courses except 1010; 1960; 3801; 3802; 3803; 3811; 3960; 3961; 3970; 3980; 5561; 5801; 5960; 5961-5962; 5970
Hum All courses except 1101; 3014; 3044; 3055; 3071; 3755; 3910H; 3970; 3980; 5030; 5063; 5910	Spch 3211; 3401, 3402; 3431; 5211; 5222; 5231; 5232; 5233; 5402; 5403; 5405; 5421; 5422; 5431; 5441; 5451; 5452; 5602
Indc 1504; 1506; 3411; 3501, 3502; 3506; 3507; 3533; 5411; 5491; 5510; 5511-5512; 5520; 5530; 5531-5532; 5533; 5535	SSci 3101; 3402
	SW All courses except 3989; 3990; 5010
	UrbS 3101, 3102, 3103
	WoSt 1005, 1006; 1977; 3302, 3303; 5301, 5311

Group D—ARTISTIC EXPRESSION

Man's accomplishment in music, literature, painting, sculpture, the stage, the film; appreciation of the life of the imagination; interpretation of life through visual, oral, and literary expression. (Requirement: 12 to 15 credits—normally three courses)

Airo 1301; 3055; 3057; 3101, 3102; 3105; 3108; 3301; 5201; 5301; 5595; 5597	CICv 3940
AmIn 3221; 3242; 5214; 5215	CLit 5111, 5112; 5311; 5321; 5331, 5332-5518; 5588; 5591
AmSt All courses except 1920; 3920; 3970	Comp 1111-1112; 1113-1114; 3101; 3104; 5101, 5102, 5103; 5104, 5105, 5106
Arch 1021; 1022; 1023; 5051; 5052; 5053; 5054; 5055; 5056	CSci 3002
Arth All courses except 5950; 5960; 5970; 5990	Dsgn 1501; 1521; 1541
ArtS All courses except 3970; 3980; 5970	Engl All courses except 1005; 3851; 3963; 3970; 3980; 5211; 5815; 5821; 5831; 5843; 5851; 5860; 5871; 5876
Chic 3507; 3508; 3510; 3511; 3513	Foreign Languages
Clas 3081; 3082; 3083; 3152; 3162; 3181; 3282; 3383; 5002; 5003; 5081; 5082; 5083; 5102; 5103; 5104; 5105; 5106; 5107; 5108; 5109; 5115; 5400	All non-English language literature courses not used to meet the second language requirement may meet the Group D re-

Group Distribution and Route II Course Lists

requirement unless their group assignment in Section II indicates A, C, or no assignment. GC—Students transferring from GC to CLA may use the following GC courses toward satisfaction of the Group D distribution requirement:

1311; 1312; 1313; 1331; 1333; 1335;
1361; 1362; 1365; 1366; 1367; 1371;
1372; 1373; 1374; 1382; 1383; 1384;
1391; 1481; 1483; 1485; 1486; 1536;
1812; 1816; 1822; 1831; 1832; 1841;
1842; 1862; 1924; 3335; 3374; 3393;
3503; 3846

Hum All courses except 1101; 3009; 3044;
3061; 3099; 3204; 3501; 3502; 3503;
3910H; 3970; 3980; 5023; 5030; 5910

Jour 5171; 5221; 5606

Mus All courses except 3970; 3980; 5950

PE 1024; 1124; 1224; 1324; 1325; 1425;
1426; 1515-1615-1715; 1517; 1518-
1618-1718; 3180; 3390; 3391; 3392;
3395; 3396; 3397

Phil 3502; 5501; 5512; 5911

Spch 1104; 3201; 3202; 3203; 3204; 5204;
5221

Th All courses except 3412; 3980; 5950; 5970
WoSt 3103; 3501; 3502; 3631; 3701; 5011

B.A. Second Language Requirements

The CLA second language requirement for the B.A. degree may be met by either of two "routes."

Route I: Complete through the fifth-quarter level (at least 23 credits) study in a language other than your native tongue, or pass a validation examination at that level.

High school language study usually relates to the requirement as follows:

High School Study

4 years

3 years

2 years

1 year

Additional College Study

at least 3 cr in same language at higher level

at least 8 cr in same language at higher level

at least 13 cr in same language at higher level

at least 18 cr in same language at higher level

Students with 2 or more years of high school Latin may satisfy the requirement by continuing in Latin on the schedule above or by taking 15 credits in another language (high school study in a second language counts toward the 15 credits in accordance with schedule II A below).

Route II: Complete at least 27 credits, as follows:

A. At least 15 credits in a second language or validation at that level. High school study usually relates to the requirement as follows:

High School Study

3 years or more

2 years

1 year

Additional College Study

none in college (validation not required)

5 cr in same language at higher level

10 cr in same language at higher level

B. 12 credits (7 for those with 4 years of high school study in one language) in courses concerned with a country or countries that use the language chosen. A list of courses that may be so used appears below; it is available, frequently updated, in college offices. Courses elected for this purpose may not be used to satisfy group distribution requirements. (Study in the language beyond the 15-credit level may be used as part of this 12-credit requirement.)

ROUTE II COURSE LIST

Courses that may be used to meet the "cultures and societies" portion of Route II (II, B) are listed below. Students following Route II should check with a

B.A. Second Language Requirements

college office or the Scholastic Committee office, 113 Johnston Hall, to learn of changes or additions. Courses marked with asterisks (*) are appropriate only for students transferring from GC to CLA.

ARABIC

MidE 1036; 3201-3202; 3531; 3541-3542-3543; 5121; 5523; 5525; 5545

Anth 5251
Arth 3909
Hist 3434-3435

CHINESE

Anth 5281
Arth 5711; 5765; 5766
EAS 1001-1002; 1032; 3161-3162
GC 1271*
Geog 3511; 5211
Hist 1461, 1462, 1463; 3462, 3463; 3464, 3465; 3467, 3468; 5461, 5462; 5464, 5465; 5467, 5468; 5477
Pol 5454

FRENCH

Fren 3599; 3601-3602-3603; 3604; 3605; 3606; 3607
Arth 3303; 5357; 5441; 5442
GC 1385*; 1386*
Hist 5211, 5212; 5231; 5430
Phil 5034

GERMAN

Ger 3531 (Extension only); 3541 (Extension only); 3601, 3602, 3603; 3604; 3610; 5601, 5602, 5603
Arth 5443
Hist 5241, 5242, 5243; 5247
Hum 1003; 3003; 3014
Mus 5661; 5662
Phil 5036; 5046; 5052

GREEK

Clas 1001, 1002, 1003; 1007; 1011; 1015; 1022; 1033; 1042; 1045; 1046; 1061; 1083; 1142; 1222 (Extension only); 3070; 3071; 3081; 3082; 3083; 3152; 5001; 5002; 5003; 5004; 5005; 5006; 5007; 5017; 5020; 5061; 5070; 5071; 5081; 5082; 5083; 5085; 5086; 5101; 5102; 5103; 5106; 5108; 5110; 5115; 5145; 5308; 5400
Arth 3152; 5102; 5103; 5106; 5108
GC 1384*

Hist 1052; 3052; 5061, 5062, 5063; 5276 (can also be used for Modern Greek)

Hum 1011; 3011
Math 3071
Phil 3001, 3002; 5005; 5008; 5012
Pol 5664
Spch 5611

For MODERN GREEK only

Clas 1001, 1002, 1003; 1007; 1015; 1042; 1061; 1083; 1142
Hist 5274; 5275; 5276; 5774
Hum 3204

HEBREW

Heb 1501, 1502, 1503; 3501, 3502, 3503 (all Extension only)

Hum 3403-3404

MidE 3101; 3107-3108; 3115; 3117; 3125; 3126; 3315; 3142; 3143; 3501-3502

ITALIAN

Ital 3304; 3555; 3606; 5601, 5602, 5603; 5609
Arth 5306; 5307; 5313; 5314
Hist 5254, 5255
Mus 5663

JAPANESE

Anth 5281
Arth 5712; 5767
EAS 1001-1002; 1032; 3163-3164
Geog 3211; 5211
Hist 1462, 1463; 3462; 3463; 3471; 3472; 3491; 3492
Pol 5453

LATIN

Clas 1004, 1005, 1006; 1008; 1015; 1042; 1044; 1045; 1046; 1055; 1066; 1083; 1142; 3070; 3073; 3081; 3083; 3162; 5001; 5002; 5003; 5004; 5006; 5008; 5013; 5018; 5020; 5070; 5073; 5081; 5083; 5101; 5104; 5105; 5107; 5109; 5110; 5115; 5145; 5308; 5400

Arth 3152; 5104; 5105; 5107; 5170

GC 1384*
Hist 1053; 1063; 3053; 3112; 5071, 5072, 5073
Hum 1012; 3012
Phil 3001, 3002; 5004; 5020
Pol 5664
Spch 5611

OJIBWE AND DAKOTA

AmIn 3026; 3036; 3061; 5121; 5131; 5211; (5960; 5920 accepted upon approval of petition)
Anth 3211
GC 1811; 1812; 1813 (CLA students may enroll for CLA credit)

PERSIAN

MidE 3511-3512; 3555; 5601-5602
Anth 5251
Arth 3142; 3909

POLISH

Plsh 3601-3602-3603
Hist 5244, 5245; 5294, 5295
Slav 1501

PORTUGUESE

Port 3603; 3605
Anth 5221
Econ 5311; 5341
GC 1272*; 1383*; 1841*; 1842*
Geog 3121; 5132
Hist 1401, 1402; 3401, 3402; 5401, 5402, 5403; 5420; 5421, 5422
Mus 5704, 5705, 5706
Pol 5455; 5456
Soc 5315; 5671
Span 1501; 1502; 1503; 3601; 3604; 3614

Group Distribution and Route II Course Lists

RUSSIAN

Russ 3501, 3502, 3503; 3601, 3602, 3603;
5201, 5202, 5204; 5301, 5401, 5403;
5404; 5406; 5407; 5409; 5501 (for Rus-
sian literature in translation, see depart-
ment)
Econ 5313
Geog 3181
Hist 5134, 5135, 5136, 5244, 5245; 5264,
5265, 5266; 5294, 5295
Slav 1501

SCANDINAVIAN (Danish, Finnish, Nor- wegian, Swedish)

Scan 1504; 3501; 3601; 5501; 5502; 5503;
5601; 5613; 5631; 5632; 5633 (5611;
5614; 5616; 5617; 5631; 5632; 5633 by
permission only)
ArtH 3654; 3655; 5105; 5641; 5642; 5644;
5645
GC 1382°; 1831°; 1832°
Geog 5173
Hist 5271, 5272, 5273
Phil 5054
Pol 5444; 5445
Finnish only: Scan 3604; 5421

SOUTH ASIAN LANGUAGES (Bengali, Hindi, Marathi, Sanskrit, Urdu)

Indc 1001; 1201; 1202; 1203; 1504; 1506;
3501; 3502; 3506; 3507; 3533; 5001;
5011; 5090; 5201; 5202; 5203; 5301;
5302; 5401; 5491; 5501; 5502; 5503;
5504; 5505; 5506; 5510; 5511-5512;
5520; 5531-5532; 5533; 5535; 5710;
5801; 5802
Anth 5261; 5263

ArtH 3014; 5775; 5776; 5777
Geog 5212
Hist 3481; 3482; 5458; 5459; 5489
Mus 5665; 5811
Phil 5801; 5802; 5803; 5804; 5805
Pol 5446

SPANISH

Span 1501; 1502; 1503; 3601; 3602; 3604;
3605; 3610; 3614; 3615
Anth 5221; 5222
Arab 5501-5502-5503
ArtH 5911
Chic 1106
Econ 5311; 5341
GC 1272°; 1382°; 1841°; 1842°
Geog 3121; 3131 (old 5131); 5132
Hist 1401, 1402; 3401, 3402; 5215; 5419;
5420; 5424, 5425; 5426
Mus 5704, 5705
Pol 5455; 5456
Port 3603
Soc 5315; 5671

SWAHILI

Afro 3001; 3002; 3003; 3011; 3012; 3301
Anth 5241, 5242, 5243; 5251; 5252
GC 1273°
Geog 3141; 5141
Hist 1431, 1432, 1433; 3430; 3431; 3432;
3433; 5441, 5442, 5443, 5444, 5445,
5446; 5447
Pol 5448

TURKISH

MidE 3561-3562-3563; 5561
Anth 5251
Hist 5274; 5774

1976-1978 TENTATIVE REGISTRATION SCHEDULE—CLA RESERVATIONS OFFICE

A registration schedule that gives each CLA student one early registration period a year appears below (further breakdown by hours will be made for winter and spring quarter registrations). The system helps students to plan programs on a long-term basis. The schedule does not apply to new students (freshman or advanced standing) who take part in orientation programs.

Day	Fall 1976	Winter 1977	Spring 1977	Fall 1977	Winter 1978	Spring 1978
1st	Cop-Fim	McE-Nz	Xa-Bi	Joh-Lal	Shf-Til	Ff-Hal
2nd	Fin-Hall	Oa-Rad	Bj-Col	Lam-McC	Tim-Won	Ham-Jen
3rd	Halm-Iz	Rae-Sch	Com-Ern	McD-Nic	Woo-Ben	Jeo-Kri
4th	Ja-Kon	Sci-Sv	Ero-Gra	Nid-Pl	Beo-Cas	Krj-Man
5th	Koo-Lur	Sw-Weh	Grb-Hol	Pm-Sa	Cat-Dul	Mao-Nas
6th	Lus-Mom	Wei-Anderson, K	Hom-Ker	Sb-Stam	Dum-Gan	Nat-Pes
7th	Mon-Om	Anderson, L-Bon	Kes-Lio	Stan-Van	Gao-Hat	Pet-Ruf
8th	On-Reh	Boo-Com	Lip-Mig	Vao-Zz	Hau-Johnson, D	Rug-Sod
9th	Rei-Sch	Con-Em	Mih-Olm	Aa-Berf	Johnson, E-Kra	Soe-Tri
10th	Sci-Ste	En-Gen	Oln-Rac	Berg-Buz	Krb-Lue	Trj-Won
11th	Stf-Vas	Geo-Harr	Rad-Schri	Bv-Dec	Luf-Mig	Woo-Bd
12th	Vat-Wz	Hars-Jac	Schrj-Stoe	Deo-Fen	Mih-Nu	Be-Bux
13th	Xa-Bars	Jad-Ki	Stof-Vz	Fed-Gov	Nv-Ph	Buy-Deu
14th	Bart-Brot	Kj-Lh	Wa-Wz	Gow-Hen	Pi-Ro	Deo-Fe
15th	Brou-Coo	Li-McD		Heo-Jog	Rp-She	

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