

College of Liberal Arts

cla

ABBREVIATIONS AND SYMBOLS

- Departmental prefix 3 or 4 letter abbreviated prefix indicating name of department (e.g., Engl for English)
- Course number 4 digits denoting the course; course number remains the same no matter which quarter offered
- f,w,s Used in bulletin, but not in your registration, to show in which quarter course is offered: (f) fall, (w) winter, (s) spring
- (129) Number in parentheses is *old* course number
- Number of credits Listed for each quarter of course in same order as course number(s)
- 1-001, 1-002, 1-003 Series punctuated by commas may be entered any quarter
- 1-001/1-002/1-003 Series linked by diagonals must be taken in order shown
- † All courses before dagger must be completed before credit is given for any quarter
- § No credit given if credit has already been granted for course preceded by this symbol (section mark)
- ¶ Concurrent registration allowed with course listed after this symbol (paragraph sign)
- # Consent of instructor is required for registration (number sign)
- △ Consent of department or school offering course is required for registration (triangle)
- , Comma means "and" when it appears in a series of prerequisites
- H Honors course or honors section of regular course

Some photos courtesy of
Minnesota Daily.

HOW TO USE THIS BULLETIN

Section I

The "General Information" section is your source of information about the goals and organization of the Arts College, graduation requirements, program planning, registration instructions, regulations, special programs and opportunities, and services of the College and the University.

Section II

Section II describes courses offered and contains information about major sequences.

Section III

This section describes the curricula in the Arts College which lead to entrance to certain professional schools.

Section IV

In this section are the "old" requirements for the B.A. and A.L.A. degrees; the tentative order of registration; and the Departmental and Faculty Index.

MAPS of the Minneapolis Campuses appear on the last pages of this bulletin.

NEW COURSE NUMBERING SYSTEM is explained on page 34 and on inside back cover.

UNIVERSITY OF MINNESOTA

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COLLEGE OF LIBERAL ARTS

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Associate Dean for Humanities and Fine Arts—Gerhard Weiss, 205½ Folwell Hall

Associate Dean for Social Sciences—John W. Webb, 223 Social Sciences Building

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Associate Dean for Undergraduate Studies—Roger B. Page, 106 Johnston Hall

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Director of Student Personnel, Lower Division—John C. Buchanan, 214 Johnston Hall

Director of Honors—D. Burnham Terrell, 115 Johnston Hall

College of Liberal Arts

Section I

GENERAL INFORMATION

Introduction

If you are a new student in the College of Liberal Arts, you have set your feet on a path traveled by many students before you. Your experiences in this college (often called the Arts College, or CLA) will not, however, be the same as the experiences of former students; they will not even be identical to the experiences of any of your classmates. No one, then, can tell you just "what it will be like." The major factor determining the nature of your experiences will be you—your interests, your abilities, your industry, and the choices they lead you to make.

This bulletin has been created for your use as you make the many decisions that, as much as anything else, characterize the life of a CLA student. It contains a great deal of information about course offerings, major programs, special opportunities, graduation standards and requirements, and academic regulations. Familiarity with this bulletin will be a great aid as you make long-range plans and many college-related decisions. There are other publications which you will also come to rely upon in these matters:

- **Class Schedule**—This publication appears quarterly to tell you which courses will be offered each quarter, and when, where, and how often they will meet. Save your fall quarter *Class Schedule*; it alone contains listings for all 3 quarters.
- **Official Daily Bulletin**—This Bulletin appears each day in the *Minnesota Daily* to announce changes in regulations, course offerings, room numbers, and other critical matters. You are expected to keep informed about the information announced here.
- **General Information Bulletin**—In this bulletin will appear tuition rates and the University Calendar; it also has information on special programs throughout the University, and facts about living arrangements, campus activities, and University services.
- **Other College Bulletins**—If you plan to apply later to a professional school (Law School, Medical School, School of Social Work, etc.) you should obtain a bulletin for that school from the Information Window in Morrill Hall, or write to the Office of Admissions and Records. These bulletins, together with Section III of this bulletin, will be needed for your program planning. If you plan to teach in the public school system you will need the *College of Education Bulletin*.

All this literature, while important, is not meant to take the place of the people (advisers, Scholastic Committee representatives, counselors, instructors, and many others) who work in the University and in CLA to help you solve problems and make decisions. But your contacts with them, and all your experiences in the Arts College and the University, will be more pleasant and productive if you are familiar with this bulletin and with the other publications just mentioned.

General Information

Plan well, study this bulletin, and make the best use of the counseling and advising services.

Your education will be as good as the choices you make in the next few years.

Goals of the Arts College

The primary goal of the Arts College is to help you obtain a liberal education. To that end, the college makes available to you a great number of courses of instruction through which you can become acquainted with the tradition and heritage of the liberal arts—the study of the great concepts, techniques, art, problems, and values of civilized life.

But an education is something more than a collection of courses; it is a larger structure with purpose and order. The courses you take are the building blocks you need to create that larger structure, but to choose and use your courses well you will want to plan carefully. Several considerations will help you form your plans.

● DESIGNING YOUR LIBERAL EDUCATION

First of all, a *liberal* education must be a good general education. Although you and your classmates will choose different routes for moving toward this goal, you will all become acquainted with the same basic fields of knowledge:

Communication, Language, Symbolic Systems
The Physical and Biological Sciences
Man and Society
Artistic Expression

The distribution guidelines explained on page 9 are the means by which the college assures that you will receive at least a minimal exposure at the college level to each of these basic fields. Beyond the distribution guidelines, you will do a certain amount of work distributed outside your major field when you are a junior and senior. Throughout your college career you should strive for balance and breadth in your education.

A second major consideration in the design of your education is the need for depth; as you explore a variety of fields you will find one field in which you will want to explore more deeply. This area of concentration can be chosen from the great number of major programs listed in Section II of this bulletin, or you may prefer to design your own interdepartmental major (see page 12). Knowing one subject well is important and valuable in itself, but it will also give you a better perspective for judging what you know about other fields. Depth, then, is an important quality in the design of your liberal education.

● YOUR RESPONSIBILITY

The outcomes of your work in the Arts College will reflect what you *learned*, not what you were *taught*. Education is an open-ended system in which you will be exposed to a variety of views. Those you accept or reject are ultimately your responsibility.

Education is not—and never can be—something that someone else does for you. Rather, it is a process that must go on within an individual if it is to go on at all. The College of Liberal Arts hopes to stimulate and encourage that process and to give it full opportunity to develop, but the process must be conducted individually by each student.

Organization of the College

COLLEGE OFFICES

Every Arts College student is assigned to a college office. Almost all freshmen, and some sophomores, will go to their college office to meet with their adviser. Juniors, seniors, and most sophomores are assigned a faculty adviser who will meet them in his own office, but they will go to their college office to:

1. Change their registration.
2. Consult with a representative of the Scholastic Committee.
3. Obtain certain curricular information such as . . . the list of courses that may be taken through independent study (i.e., without attending classes), the classification of certain courses within the distribution guidelines, registration dates, and changes in graduation standards or major programs.

There are ten such offices. Freshmen and sophomores are assigned to one of the Lower Division offices listed below. Juniors and seniors are assigned to one of the Upper Division offices. Students in the Honors Program use the Honors office as their college office, and students in the Martin Luther King Program use the MLK office as their college office.

Lower Division Offices

For Freshmen

Johnston Hall office—201 Johnston Hall, 373-2912
Walter Library office—16 Walter Library, 373-5086
Temporary North of Mines office—208 TNM, 373-5795

For Sophomores

Sophomore office—220 Johnston Hall, 373-2880
For adviser assignment or change—216 Johnston Hall, 373-5094
For orientation-registration information for new, advanced-standing, and returning students—208 Johnston Hall, 373-7951

Upper Division Offices

Humanities and Fine Arts—206 Folwell Hall, 373-5245
Sciences, Mathematics, Journalism, and Psychology—223 Johnston Hall, 373-2819
Social Sciences—214 Social Sciences Building, 373-4238

Adult Special

Adult Special Office—225 Johnston Hall, 373-2906

Martin Luther King

MLK Office—13 Walter Library, 373-9739

Honors (for all honors students, irrespective of major)

Honors Office—115 Johnston Hall, 373-5116

Classification of Students—You will frequently need to know what your "class" is. The Arts College is divided administratively into a Lower Division (for freshmen and sophomores) and an Upper Division (for juniors and seniors). Students are classified as shown below:

- Freshman—A student with less than 39 credits
Sophomore—A Lower Division student with 39 credits or more
Junior—A student admitted to Upper Division who has less than 135 credits
Senior—An Upper Division student with 135 credits or more
Adult Special—Nondegree candidate; defined more specifically on page 15

General Information

Note—A student who has not been admitted to Upper Division is not a Junior, even though he may have the sufficient numbers of credits to qualify for Upper Division status.

These classifications will determine a student's eligibility for certain courses, and they are of interest to the Selective Service draft boards of male students with student deferments. It is in the interest of any student to make steady progress toward graduation.

See the following pages for explanations of procedures for transferring to Upper Division.

Departments and Schools/Divisional Councils—The basic unit of organization of the college is the department (or school, in the case of four professionally oriented units). Departments have considerable autonomy with respect to faculty personnel matters, though budget decisions are reviewed through college and University channels. Curricular proposals about courses and majors originate in departments, but, again, concurrence of others must be obtained through divisional council review. Each department is represented in one or more of the three Divisional Councils of the College (Social Science, Natural Science, and Humanities and Fine Arts), where final authority lies on all curricular decisions except those which are college-wide, like graduation standards.

Governance of the College—The final legislative authority of the college is the All-College Council, made up of the three Divisional Councils meeting jointly. The council consists of approximately 109 faculty members, elected by departments in proportion to department size, 6 junior staff and 3 graduate students appointed by the dean upon nomination by departments, and 15 undergraduate students (5 on each Divisional Council) appointed by the Student Intermediary Board. There are college-wide faculty-student committees on curriculum and on instruction as well as a faculty-student Student Personnel Council. All standing committees of the college have undergraduate student membership as well as, when appropriate, graduate student and junior faculty representation. Basic educational policy is determined through such faculty-student groups.

Student Intermediary Board—The chief, official voice of students in the affairs of the Arts College is the Student Intermediary Board (sometimes called the CLA Board), the student-elected and -appointed 25-member council through which most students are named to college committees. In addition to its influence through selecting student-faculty committees, the board itself originates proposals and criticizes pending legislation on curricular, instructional, and student personnel issues. The board has played a significant role in most of the college's basic educational decisions of recent years.

The board also sponsors the CLA Freshman Council, providing even first-year students with the opportunity to be heard, especially on questions of particular concern to freshmen. The board gives support and encouragement to student organizations within departments of the college, since so many important issues are settled at the departmental level. The Student Ombudsman Service (SOS), which is discussed in a later section of this bulletin, is one of the board's most valuable aids to all students in the college.

The college has recently designated the Intermediary Board as the first contact point for students who have courses which they wish to propose or who want to increase opportunities to evaluate their own courses and instruction.

Student Participation in College Affairs—As is stated in previous sections, students play a major role in the affairs of the college. They serve on college and department committees and councils, are members of the Intermediary Board, and work on special task forces or in administrative positions of the board. Any

student who wishes to contribute to improvement and change in the college should come to the Student Intermediary Board office, 101 Johnston Hall, and declare his interest. There is always work to be done.

Student Ombudsman Service ("SOS")—SOS is a very special service for students, supported and staffed by fellow students. First sponsored by the Student Intermediary Board in 1968 and modeled after the Scandinavian ombudsman or public defender, the SOS has added a significant and powerful voice for students in their interactions with the college. Whatever your uncertainty, confusion, or complaint, you will find ready assistance from a student ombudsman. Ombudsmen "know the system" and are prepared to give you needed information or to help obtain adequate attention to your problem from faculty, administration, or service office. SOS not only deals with the problems of individual students but also generalizes its experience to bring about needed changes in the procedures of the college. SOS is in 102 Johnston Hall, telephone 373-9788, from 8 to 4 p.m. daily.

Honors Student Council—The Honors Student Council evaluates the honors program and curriculum and proposes and develops new programs, not only to improve the Honors Division for honors students but to improve all students' educational experience at the University. Therefore, the council works closely with the faculty and administration to implement such proposals; it also elects the student members of the Faculty Honors Council. Through HSC's five standing committees—curriculum, research and independent study, programs and facilities, public relations, and publications—members have evaluated courses and proposed new ones, planned coffee hours and informal evening discussion sessions, worked on proposals for independent study and the pass-no credit grading system and developed the Honors One-to-One program. The council also publishes *Academy*, a quarterly literary journal founded on the idea that intelligent and creative students should have a place to publish their literary and artistic work. For further information on the council or *Academy*, visit 115 Johnston Hall.

Equal Opportunity – Regents' Policy

The University of Minnesota is guided by the principle that there shall be no differences in the treatment of persons because of race, creed, color, sex, or national origin, and that equal opportunity and access to facilities shall be available to all. This principle is particularly applicable in the admission of students in all colleges, and in their academic pursuits. It is also applicable in University-owned or University-approved housing, in food services, student unions, extracurricular activities, and all other student services. It is a guiding policy in the employment of students either by the University or by outsiders through the University and in the employment of faculty and civil service staff.

Admissions

Application for admission to the Arts College, as to other colleges of the University of Minnesota, is made to the University Admissions Office. For details, consult the *General Information Bulletin* or contact either the Freshman Admissions Office (49 Johnston Hall, 373-2154, for freshmen) or the Admissions Office (6 Morrill Hall, 373-2144, for nonfreshmen).

Graduation Standards and Requirements

BACHELOR OF ARTS (B.A.) DEGREE

Old Graduation Requirements

The old graduation requirements may still apply to some students. For details of the old requirements and the students to whom they apply, see Section IV of this bulletin.

Current Graduation Standards and Requirements

The graduation requirements and distribution guidelines listed below apply to all students who are now entering CLA (as well as those who entered as freshmen first summer term 1967 and thereafter, and those who entered with advanced standing first summer term 1969 and thereafter).

Summary of B.A. Graduation Requirements

1. Minimum credits**
 - 180 total credits earned
 - 75 credits in Upper Division courses
 - 45 credits in residence after admission to Upper Division
 - 30 credits in the senior year in residence in Upper Division
2. Freshman English requirement
3. Foreign language requirement
4. Breadth
 - Group Distribution requirements
 - 30 Upper Division credits outside departmental major
5. Major field (of concentration)
 - Complete a departmental or interdepartmental major
6. Quality of work
 - C average in all work presented, from whatever source
 - C average in all University of Minnesota courses
 - C average in all CLA Upper Division courses
 - C average in all CLA Upper Division courses in major

Details of Graduation Standards and Requirements

Freshman English—Engl 1-001/1-002/1-003, or Engl 1-311/1-312/1-313 or Comm 1-001/1-002/1-003 or exemption. All students must have an English placement classification before registering for any of these courses. These courses may not be used to satisfy any of the Group Distribution Requirements.

Foreign Language—Complete the sixth-quarter level of a foreign language (approximately 25 credits) or pass a validation examination at that level. Foreign students should consult with a representative of the Scholastic Committee about possible exemption from this requirement.

Courses used to satisfy the foreign language requirement may not also be applied toward the Group Distribution Requirements.

You may progress to the sixth-quarter level in a language entirely by taking college courses, or you may choose to build upon your high school background as follows:

High School Study

4 years
3 years
2 years
1 year
None

Additional in College

5 credits at higher level in same language
10 credits at higher level in same language
15 credits at higher level in same language
20 credits at higher level in same language
25 credits in one language

**Credits of F or N grades do not count toward graduation credit requirements.

Students with 2 or more years of Latin in high school may satisfy this requirement by continuing in Latin on the above schedule or by taking 15 credits in another language. High school study in the other language may also count.

Group Distribution Requirements

The guidelines below are to help you achieve balance and breadth in your education. While this, or any other, categorization of courses must be somewhat arbitrary, it can nevertheless help you identify the courses that represent different areas of the total curriculum. It is usually unwise to take courses only for the reason that they satisfy distribution requirements, but you should certainly be influenced in your course selection by your need to meet these requirements before graduation.

Work toward the distribution requirements can be done in Lower or Upper Division, though most students planning on a B.A. degree devote much of their first 2 years to meeting the minimum distribution requirements. Your first 2 years are a particularly appropriate time to learn more about your interests and abilities while broadening your education and exploring different areas of the curriculum. At the same time, you will be doing course work which is prerequisite to work you may wish to do in Upper Division. Though it is usually desirable to concentrate on these breadth requirements in Lower Division, it is not necessary to complete them before applying for Upper Division.

Details of Group Distribution Requirements

Complete a total of 45 credits distributed as follows:

- 9 credits from one Area in Group A
- 9 credits from one Area in Group B
- 9 credits from one Area in Group D
- 18 credits in Group C, with at least 6 credits in each Area
- At least 3 credits must be taken in a department to count.

Maximum of 12 credits per department may be used for all group distribution requirements, even though courses from some departments are classified in more than one Group or Area.

Courses from no more than two departments may be used in any one Area.

Courses classified in two Areas (American Studies and Humanities courses only) may be used in one area or the other, but not in both.

Honors sections of any course may be used to satisfy the same requirements as their companion, regular sections.

Group Distribution Course List

Below is a list of the courses, and their classifications, which are most often used to satisfy the Group Distribution Requirement. Almost every course in this bulletin may be used in a particular Group and Area. The courses listed here have no or few prerequisites. Information on the classifications of courses not listed here can be obtained in any college office.

Note—This list refers only to courses listed in this bulletin and which have 5 or fewer credits of prerequisites.

General Information

Group A: Communication, Language, Symbolic Systems

Area 1: *Linguistics, Rhetoric, Logic, Philosophic Analysis*

Afro 1-101/1-102/1-103
Clas 1-048, 3-048
ClPh 3-773
Comp 1-027/1-028, 5-101/5-102/5-103
Engl 3-601, 5-633, 5-645, 5-646, 5-666, 5-667, 5-674
Foreign languages—all skill courses not used to meet foreign language requirements.
Jour 1-001, 1-011, 1-012
Lat 3-011
Ling 1-001/1-002/1-003, 3-001/3-002, 3-003, 3-005
Phil 1-001, 1-011, 3-601, 5-101, 5-105, 5-231
Rhet 1-147
Spch 1-101, 1-102, 1-106, 1-108, 1-110, 3-108, 3-601, 3-605, 3-615, 3-620, 3-621, 3-641, 5-404, 5-603, 5-611, 5-616

Area 2: *Mathematics, Statistics*

Mathematics—all courses except 1-005, 1-006
Pol 3-085
Soc 3-801/3-802
Stat 1-051

Group B: Physical and Biological Sciences

Note—If you elect only one area in this group, it must be completed with courses listed below as having laboratory; if you elect to complete both of these areas, only one need be completed with courses “with lab.”

Area 1: Physical Universe

With laboratory

Chem 1-004/1-005
Geo 1-001, 1-002
Geog 1-425, Geo 1-001
NSci 1-004/1-005† plus one of the following: NSci 1-006, Geo 1-001, Geog 1-425,
Ast 1-011
Phys 1-010/1-020/1-030 with 1-015/1-025/1-035; 1-040/1-050/1-060; 1-270/1-280/
1-290; 1-210/1-220/1-230 with 1-215 and either 1-225 or 1-235

Without laboratory

Ast 1-011, 3-051
NSci 1-001/1-002†
Phil 5-601
Phys 1-010/1-020/1-030, 1-210/1-220/1-230

Area 2: Biological Universe

With laboratory

BioC 1-302
Biol 1-001/1-002
All other lab courses listed in this bulletin under: Biochemistry, Biology, Botany,
Ecology and Behavioral Biology, Genetics and Cell Biology, and Zoology

Without laboratory

BioC 3-051
Bot 1-009, 1-012
Ecol 3-001
NSci 1-003
Phsi 1-002
Psy 3-031
All other nonlab courses offered by Biochemistry, Biology, Botany, Ecology and Behavioral Biology, Genetics and Cell Biology, and Zoology

Group C: Man and Society

Area 1: Analysis of Human Behavior and Institutions

Afro 1-036/1-037†, 3-061, 3-091/3-092†, 5-001/5-002, 5-900
AmIn 3-061, 5-121, 5-131
Anthropology—all courses not listed under Group C, Area 2
Criminal Justice Studies—all courses
Economics—all courses except 3-021, 5-021
FamS 1-001, 1-025, 3-001, 3-015
Geography—all courses except 1-425
Jour 1-003, 1-701, 3-021, 5-611, 5-721
Phil 1-003, 1-004, 3-415, 5-054, 5-401
Political Science—all courses except 3-085 and those listed under Group C, Area 2
Psy 1-001/1-002†, 1-004/1-005†, 1-006, 3-970
SW 3-001
SSci 1-201, 3-101, 3-102, 3-103, 3-104, 3-105
Sociology—all courses except 3-801/3-802 and those listed under Group C, Area 2
Spch 1-103, 3-401, 5-602

Area 2: Development of Civilization: Historical and Philosophical Studies

Afro 3-081/3-082†
American Studies—all courses
Anth 1-001, 3-511, 5-111, 5-521, 5-522, 5-331, 5-532, 5-533, 5-591
Arab 3-511/3-512/3-513, 3-531, 3-551/3-552/3-553
Clas 1-001, 1-002, 1-003, 1-004, 1-005, 1-006, 1-042, 1-142
Econ 3-021, 5-021
Geography—all courses except 1-425
Heb 3-501, 3-502
History—all courses
Humanities—all courses
Indc 1-501, 1-502, 1-503, 1-504, 1-505, 1-506
Jour 5-601, 5-603, 5-615
Ortl 3-501, 3-502
Per 3-501, 3-502
Phil 1-002, 3-001, 3-002, 3-003, 3-004, 5-003, 5-005, 5-008, 5-033, 5-034, 5-035,
5-036, 5-041, 5-042, 5-043, 5-044, 5-301, 5-302
Pol 1-041, 3-561, 3-562
SSci 3-201/3-202, 3-508
Soc 5-305, 5-701, 5-705

Group D: Artistic Expression

Area 1: Literature

American Studies—all courses
Clas 1-046
English—all courses except those listed in Group A, Area 1
Foreign languages—all Upper Division foreign literature courses not used to meet
the foreign language requirement
Humanities—all courses
Indc 5-302, 5-401, 5-802
Jour 5-171, 5-606

Area 2: The Arts

Afro 1-301
AmIn 5-211
Art History—all courses
Studio Arts—all courses
Landscape Architecture—LA 1-021, 3-062/3-063
Music—all courses
Theatre—all courses

Upper Division Breadth Requirement—All students seeking a B.A. degree (except students completing requirements for an interdepartmental major) must complete 30 Upper Division credits in courses outside their major.

General Information

There is no requirement for a "minor" except for students completing the old graduation requirements.

Required Background Courses—While you are in Lower Division you will want to take those courses which are listed in Section II of this bulletin as "Required Background Courses" (courses which prepare you to do advanced work in the major of your choice). If you have several majors in mind, plan your program to cover all possibilities. These courses may also be used to satisfy the Group Distribution requirements.

Major Sequence—While you are in Upper Division you will concentrate your efforts in some field of special interest, known as the major sequence. The many major sequences offered to CLA students appear in Section II of this bulletin. Since requirements for majors are revised from time to time, you should check with your adviser, your college office, or the departmental office for your major to obtain up-to-date information. The four types of major sequences are listed below:

1. *Departmental Major*

Departmental majors, listed in Section II as "Major Sequence for B.A.," are designed by the departmental faculty to be balanced, integrated programs of concentration in the discipline. Only the major department can authorize the modifying of a major sequence; consult with your adviser if you wish to seek permission to do this.

2. *Interdepartmental Major*

Established Interdepartmental Major—If your special interests do not center in a single department, you may choose to complete one of the established interdepartmental major sequences listed in Section II of this bulletin. The requirement of 30 credits outside the major department does not apply to these major sequences.

Interdepartmental Major, Individually Designed—Students sometimes have special areas of interest that coincide with no existing departmental or interdisciplinary program. Such students may elect to complete an individually designed interdepartmental major program. These programs must include 75 credits of Upper Division courses. The requirement of 30 credits outside the major department does not apply to these interdepartmental majors. For more details, see Section II.

3. *Major in a Combined Program*

A third type of concentration is a combined program with medicine or dentistry, in which work in the professional school is accepted in lieu of a major. Other requirements for the B.A. degree must be satisfied in the usual way. At least 1 year (45 credits) must be earned in Upper Division residence, and a C average in all Upper Division courses is required. The programs require 7 years and lead to B.A. and M.D. degrees (the latter from Medical School) and B.A. and D.D.S. degrees (the latter from School of Dentistry). Details are listed in Section III.

4. *Double Majors*

Students who wish to complete two majors do so by completing all of the requirements of each major. Such students do not need to complete 30 credits outside these majors. They must, however, finish a total of 75 Upper Division credits. Double major programs are not appropriate for many students. Students with objectives too broad for a departmental program will usually find an established or individually designed interdepartmental major fits their needs better than a double major.

Quality of Work—All students seeking B.A. degrees must maintain a C average in their course work in the following categories:

- All work, from whatever source
- All University of Minnesota courses
- All CLA Upper Division courses
- All CLA Upper Division courses in their major

Quality of Work, Advanced Standing Students—If you are entering the Arts College with advanced standing from some other institution, you must complete the same credit and distribution requirements expected of other students. You must earn a C average on all work taken at the University of Minnesota and a C average on all work counted toward the degree, whether earned in the Arts College or elsewhere. Grades earned at other institutions are entered on your University of Minnesota transcript but may not be used to make up a grade point deficiency at the University of Minnesota.

The grades earned in other colleges of this University, except General College, will carry the appropriate grade points, provided the courses are accepted by the Arts College. If you have any failures in acceptable courses taken in other colleges, these also will be entered on your record.

BACHELOR OF FINE ARTS (B.F.A.) DEGREE

Bachelor of fine arts programs are offered in three areas: music, theatre, and studio arts. These programs leading toward the 4-year professional B.F.A. degree are designed to provide the young artist the fullest opportunity to develop his creative abilities while receiving a general education. B.F.A. programs differ from B.A. programs by placing greater emphasis on work leading to professional artistic competence, and less emphasis on general education. Because B.F.A. programs have the advantages and disadvantages of a narrower but more intense concentration on an educational area, students should carefully consider whether the B.F.A. or the B.A. program is more appropriate for them.

General Degree Requirements

- A. Minimum Credits**—180 credits (at least 90 must be in B.F.A. program)
- B. Residence in Upper Division**—Student must be in residence for last 3 quarters before graduation
- C. Distribution Requirements**—
 1. Freshman English—9 to 15 credits
 2. Group Distribution requirements—36 credits (9 from each Group)
 - Group A: Communication, Language, Symbolic Systems (includes foreign language, linguistics, rhetoric, logic, philosophical analysis, mathematics, statistics)
 - Group B: Physical and Biological Sciences (no laboratory required)
 - Group C: Man and Society
 - Group D: Artistic Expression (satisfied by course work in major)
- D. Quality of Work**—Student must have a minimum average of C (higher in some departments). The required grade point average must be attained both on all work presented and on CLA work separately, for students who transfer from other institutions.

Application Procedures

Who Should Apply—Applicants, whether freshmen or advanced standing students, must meet the admission standards of the College of Liberal Arts.

General Information

B.F.A. programs are appropriate choices for the student who plans to become a professional artist in his field. Such a student may wish to pursue an M.F.A. graduate degree, for which the B.F.A. degree is excellent preparation.

Departmental B.A. programs are better choices than B.F.A. programs for the following students:

1. Students wishing to pursue advanced degrees in liberal arts (M.A., Ph.D.).
2. Students whose special interest is in the history and critical tradition of their field.
3. Students wishing to withhold specialization until after completing a broader liberal arts background than the B.F.A. offers.
4. Students who are uncertain of their areas of special interest within their field.
5. Students whose commitment to a professional artistic career is uncertain.
6. Students whose interest in their field may be avocational.

When to Apply—Students should first apply for admission to the College of Liberal Arts. The best time to apply to the B.F.A. program is during the first quarter of the freshman year. In exceptional cases applications may be made later, but no applications will be accepted later than second quarter of an applicant's junior year.

How to Apply—Students interested in the B.F.A. program should discuss their decision with the B.F.A. Committee chairman for their department. Complete and current information on degree requirements can be obtained in the departmental offices, from departmental B.F.A. chairmen, or from the B.F.A. booklets available in the Humanities and Fine Arts Divisional Office, 206 Folwell Hall.

Transfer from Another Institution—The student coming with advanced standing from another institution is admitted provisionally, subject to departmental review of his candidacy not later than the end of his second quarter in residence.

The departmental B.F.A. Committee reviews the progress of all candidates annually on the basis of overall performance and fitness for the program, and not solely on credits or grades.

Bachelor of Fine Arts in Music

Music B.F.A. Committee Chairman: Professor Bernhard Weiser

The B.F.A. program in music is offered for very talented and able students who show an early and serious interest in musical performance and who indicate an intent to pursue careers as professional performers. The program is appropriate for students who plan to attain the M.F.A. degree.

Bachelor of Fine Arts in Studio Arts

Studio Arts B.F.A. Committee Chairman: Professor Katherine Nash

The B.F.A. program in studio arts leads to a 4-year professional degree. The program features a high concentration of studio art courses, and is oriented toward the student seeking professional status or an M.F.A. degree.

Bachelor of Fine Arts in Theatre Arts

Theatre Arts B.F.A. Committee Chairman: Professor Wesley Balk

The B.F.A. degree in theatre arts is a 4-year professional degree specifically intended for students whose notable abilities and committed interests strongly

suggest they will pursue careers as professional production artists or as teachers of artists in community theatre, resident theatre, commercial theatre, or academic theatre. To support their talents and their firm commitment to vocations in theatre, the B.F.A. program provides: (1) grounding in all major areas of production knowledge and skills; (2) specific exploration in depth of an area of special interest—design, directing, or acting; and (3) enriching exposure to the other arts as well as to written and oral communication, science, and the humanities.

Though a student who holds a B.F.A. degree in theatre arts from the University of Minnesota may find he is prepared to pursue an M.A. degree and a doctorate, the B.F.A. program is intended to be terminal or to lead to the additional professional specialization offered by work toward an M.F.A. degree.

TWO-YEAR PROGRAM FOR ASSOCIATE IN LIBERAL ARTS DEGREE

If you are not sure that you will complete the 4-year Bachelor's degree, you may wish to plan for the 2-year associate in liberal arts degree (A.L.A.). It indicates the successful completion of a program devoted largely to general education. Students find this degree desirable as evidence of liberal arts achievement if they are transferring to a professional school or if forced to discontinue for a time.

The following requirements apply to students entering the Arts College after spring quarter 1967. Students who entered with 39 or more credits before June 1969 may elect the OLD distribution plan described in Section IV of this bulletin.

Requirements:

1. Earn at least 90 credits with a GPA of at least 2.00.
2. Earn at least 45 credits in residence. If you enter the Arts College with advanced standing, you must complete the last 45 credits in residence.
3. Meet requirement in freshman English and one of the following two groups of requirements (courses which satisfy requirements of these groups are listed on pages 10 to 11):
 - a. Foreign language through a third-quarter course in college or exemption by examination of high school work; 9 credits of each of the distribution Groups A (Communication, Language, Symbolic Systems), B** (Physical and Biological Sciences), C (Man and Society, with credits in two areas), and D (Artistic Expression).
 - (or)
 - b. 9 credits in Group B** (Physical and Biological Sciences), and 15 credits in each of Groups A (Communication, Language, and Symbolic Systems), C (Man and Society—credits in two areas), and D (Artistic Expression).

If you meet these requirements, you are eligible for the associate degree even though you may enter the Upper Division or a professional school. To apply, inquire at window 14 of the Office of Admissions and Records in Morrill Hall.

ADULT SPECIAL STUDENTS

Students seeking a limited, nondegree program in Arts College courses may be permitted to register as adult special students. Enrollment pressures have forced a more restrictive policy regarding such students. Application is made through the Office of Admissions and Records before the deadline listed in the

**Laboratory required.

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University calendar, but it must be approved in the Arts College office. Ordinarily, a student must be at least 24 years old or have a Bachelor's degree.

You may *not* register as an adult special in the following situations:

1. To improve grade point average for admission to the Graduate School or some other college or professional school.
2. If you would not be admissible to CLA as a regular student.
3. If you have been rejected by the Graduate School.

As an adult special student you will proceed under the following regulations:

1. You may take up to 6 credits per quarter in any course listed in the bulletin for which you have the necessary prerequisites. If your program is predominantly in departments of another college, you should register in that college.
2. If you wish to register for more than one 5-000 level course in a single department, you must have official approval of that department.
3. Credit obtained by work in other institutions or by special examination will not be recorded while you remain in adult special status.
4. You may audit courses according to the procedure described on page 20.
5. Each quarter's registration must be approved in 225 Johnston Hall.
6. Registration dates are the same as for undergraduates.
7. You must maintain a 2.00 grade point average and will be considered for probation and exclusion for a continued low average as well as for repeated irregularities such as incompletes and excessive withdrawals.
8. When for some special reason a student is permitted to register in graduate level courses and later transfers to Graduate School, only the first quarter's work taken as an adult special student may later be petitioned for transfer to Graduate School.
9. Exceptions to CLA regulations for any adult special must be approved by a Scholastic Committee representative in 225 Johnston Hall.

Orientation

Every student entering the Arts College will find that there is much he needs to learn before he can benefit fully from the many opportunities available to him. The process by which students acquire the information they need to begin successful college careers is called orientation.

The Arts College joins with other divisions of the University in conducting short (1- or 2-day) orientation programs for new students over the period of the late summer and early fall. (Similar programs precede also winter and spring quarters.) The program includes an introduction to the college's aims, instructions on registration and program planning, testing, and group activities. The program leads to an appointment with a faculty adviser and concludes with registration. Advanced standing students engage in a similar program but it lasts only 1 day.

Two other very valuable orientation programs are Welcome Week and New Student Camps.

Registration

Registration is enrollment for the particular courses you will take for the next quarter. Your registration is a contract between you and the college, a formal agreement requiring both parties to assume certain responsibilities. One of your responsibilities is to make every effort to register properly. Errors, late registrations, failures to follow registration procedures, and excessive numbers of registration changes are troublesome for you and may deny other students opportunities to enroll in the courses of their choice.

All students receive printed instructions with their registration materials. These should be studied carefully, for they often contain information about new special opportunities or changes in registration procedures.

HOW TO REGISTER

Registration consists of several basic steps:

1. Obtain registration materials, including registration permit.
2. Plan a tentative program of studies.
3. Consult with adviser (approval required in many instances).
4. Reserve place in courses in Class Reservations Office.
5. Turn in registration materials to CLA windows in Morrill Hall; pick up fee statement.
6. Pay fees.

All registrations consist of these same six steps, although there are variations in the way they are accomplished. Registrations which involve special requests usually require approval of a representative of the Scholastic Committee. Some special permissions require the approval of course instructors. No registration is completed until the sixth step, the payment of fees, is completed.

Details on these six registration steps are listed below.

Registration Permits and Materials—New freshman and advanced standing students receive their registration permits by mail from the Office of Admissions and Records. Some students are directed by their orientation-registration invitation to pick up their permits from their college office. They are given the rest of their registration materials during the orientation-registration program.

Students seeking to transfer from another college within the University to the Arts College should apply at the Change of College Window (Room 6C, Morrill Hall) for authorization to transfer. Their registration permits are obtained from their previous college.

Previously registered students, returning after an absence, must seek a registration permit from the Recorder, Window 10 or 14 in 105 Morrill Hall. They will be directed to a college office where they obtain other registration materials.

Continuing students obtain their permits and materials from designated distribution points, usually in or near their divisional offices.

Program Planning—Most students, except those making their first registration, discuss their next quarter's plans with their adviser several weeks before their registration date. Such advance planning simplifies registration while permitting advisers and students a better opportunity to talk than they would have if the interview took place immediately before the student registered.

Adviser Approval—Students who have discussed their program with their adviser prior to their registration date will not need to confer with him again

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to get his signature on their registration cards; as long as their proposed schedules agree with the program he and they discussed, it will quickly be signed.

If a student has not been able to meet with his adviser before registration, he will make an appointment to do so during the registration period. Most Upper Division students do not need to obtain adviser approval in order to register.

Closed Sections Boards—Up-to-date information on which courses and sections of courses are open is available in 18 Johnston Hall.

Reserving Courses—Courses are reserved in the Class Reservations Office, 12 Johnston Hall. There students present adviser-approved registration cards and registration permits to registration clerks who will give them the cards which will reserve places in the courses they have chosen. To reserve a place in a course is not to register for it; registration is not complete until the final two steps have been completed.

Fee Statements—Students obtain fee statements by presenting all registration materials to Window 10 or 14, Morrill Hall. By this time, students must have supplied all information asked of them on the forms and cards in their registration packets.

Payment of Fees—To conclude his registration, a student must pay his fees. The expiration date for registration appears in the University Calendar section of the *Class Schedule*, the *General Information Bulletin*, and in the Official Daily Bulletin of the *Minnesota Daily*. There is an additional fee for late payment. Paying fees by mail is usually more convenient than doing so in person.

Fees and Expenses—For information concerning fees and expenses, see the *General Information Bulletin*.

Registration Dates—Registration for continuing students begins several weeks before the opening of the next quarter and is announced in the Official Daily Bulletin. These dates are controlled for Arts College students according to the placement of their last name within the alphabet. The alphabet rotates each quarter to give every student an equal chance to register early. For more information, see the Tentative Registration Order in Section IV of this bulletin.

Registration after the publicized official expiration date is possible only in exceptional circumstances, and requires approval from the Scholastic Committee and the payment of a special privilege fee.

SPECIAL PERMISSION TO ENTER CLASS

Special permission is needed to enter some courses, typically classes with carefully controlled sizes or requiring special backgrounds. Students seeking to enter such a class will be directed by information in the *Class Schedule* to seek the approval of the instructor or the department before registering for the class.

Closed Section Permit—It is sometimes possible to enter a class, or section of a class, which has closed. To do so it is necessary to have the approval of the instructor of the class, or—in some cases—the approval of the department offering the class. Students seeking special permission to enter closed classes should contact the office of the department offering the class to inquire about the possibility of receiving this privilege.

Class size limits are established sometimes by the maximum number of students who can be properly taught, sometimes by the size of the classroom available. Instructors order books and make other provisions according to the expected enrollment; serious problems arise if these limits are exceeded. Permission to

register for a closed class is, therefore, a special privilege which can only occasionally be extended.

Independent Study—All of the various forms of “independent study” (see page 26) require students to obtain instructor and/or departmental approval before registering for them. Your registration material will contain complete details on the procedures involved. *Note*—the required approval must be obtained before your registration can be completed.

SCHOLASTIC COMMITTEE APPROVAL

Below are listed a number of special registration requests which may require Scholastic Committee approval.

Maximum and Minimum Credits per Quarter—Most students take about 15 credits of work each quarter. To take less than 12 you must secure permission from the Scholastic Committee. If you hold a job requiring more than 20 hours of work a week you are advised to take no more than 12 credits, and if you must work 30 hours or more you should take less. In general it is unwise to work more than 15 to 20 hours a week while going to college.

The maximum number of credits for which you may register is ordinarily 17. After 1 quarter of residence you may register for 18 credits provided you have a scholarship average of 2.50 for the quarter before registration, and no failure for the quarter immediately preceding registration. Registration for credits in excess of these limits must be approved by the Scholastic Committee.

Registration for Courses in Other Colleges of the University—All courses offered in other colleges which are regularly open to Arts College students are listed in Section II of this bulletin. Other courses in those colleges may be taken only with the approval of the college offering the course and the CLA Scholastic Committee. Inquire in your college office about the application of such courses toward specific B.A. degree requirements.

Repeating a Course—You may, without special permission, repeat a course which you have failed; both the old and new grades will then stand on the record. You need not repeat a failed course, however, unless it is prerequisite to other courses you wish to take or is required for graduation.

You may not, without permission of the Scholastic Committee, repeat a course for which you have already received credit. When permission is given, the Scholastic Committee will determine how the second grade shall be counted in the grade point average. Usually it does not count.

Repeating a High School Course—Ordinarily you should register in the college course in mathematics or foreign language for which your high school units in these subjects make you eligible. If for any reason you believe that you are not equipped to take that level of college language course, you should consult with your adviser about the possibility of being assigned to a college course that repeats what you had in high school. If this repetition is approved by your adviser, Scholastic Committee approval is not required. You will receive full credit for the course, but it must be taken on the P-N grading system. No approval is necessary if you must repeat high school trigonometry.

Courses Without Credit—Under certain circumstances you may register for a course without credit, with the permission of the Scholastic Committee. This will entitle you to participate in class activities to an extent agreed upon in advance with the instructor. The usual arrangement, when permission is granted, is for full participation with a final grade recorded on the permanent record, but the credits and grade points do not count in computing grade point averages in the

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Arts College. The procedure is particularly useful for returning students who may wish to repeat a course for review.

Audited Courses—Auditing a course differs from taking it without credit in that you may not normally participate in the activities of the class or take the final examination, and no grade is recorded. Moreover, you may not later take for credit a course that you have audited. If you wish to audit you must obtain the approval of the Scholastic Committee. The course will count as part of the academic load for fee purposes but not for determining credit load. The audited course will appear on your transcript with a grade of "V." Students may not register as auditors until the controlled registration period has ended.

Courses in General Extension Division—(See page 21) Registration in evening or television classes while registered in the Arts College requires Scholastic Committee approval.

Credits in Graduate School—If you are lacking not more than 9 credits for graduation you may, upon petition, get graduate credit for a limited amount of work taken as an undergraduate. No graduate credit will be given unless you have made previous arrangements with the Graduate School. Courses taken for graduate credit will not carry credit toward the Bachelor's degree.

With the permission of the Scholastic Committee, an undergraduate lacking not more than 6 credits for graduation may be registered in the Graduate School while completing requirements for the Bachelor's degree.

Credit for Courses Prerequisite to Courses Accredited—If, by some mistake, you take a course without fulfilling a prerequisite, you may not later take this prerequisite course for credit, except by permission of the Scholastic Committee.

Application to Upper Division

Making the transfer to Upper Division is an important step in your educational career, and it is a step that should be taken as soon as you are eligible. In Upper Division you will usually have an adviser who is a faculty member of your department. Upper Division status is a prerequisite for many courses.

Who May Apply—Any student, seeking a B.A., with at least 84 credits and at least an overall C average is eligible. Admission on probation may be approved in special cases when scholarship average is slightly less than C. *Note*—completion of Distribution Requirements is not required for the transfer to Upper Division.

When to Apply—You must initiate application procedures during the first 4 weeks of the quarter in which you will complete 84 credits. No application forms will be issued during the summer. Make your application just as soon as you become eligible.

Where to Apply—Go to the Upper Division college office appropriate to your major (see page 5).

If you wish to participate in an Upper Division honors program and graduate with honors, you should apply to the Honors Division Office (115 Johnston), rather than to one of the Upper Division offices.

Application Procedures—In the UD office for your major you will receive a form, "Application for Admission," which you complete and return together with two copies of your transcript. These transcripts must show all work transferred from other colleges, and all work—including your current registration—in CLA.

If admitted, you will receive the form, "Major Adviser's Instructions to Upper Division Office," which you will take to the office of your major department for assignment to an Upper Division adviser. He will help you plan your program. This program, with your adviser's approval, must be submitted to your Upper Division office before you will be permitted to register in Upper Division.

When approved by your adviser and accepted by the Upper Division, the Major Adviser's Instructions to Upper Division Office constitutes an agreement which you can change only by filing with the Upper Division an official amendment form approved by your adviser.

Status and Senior Year Balance Sheets—At admission to Upper Division you will receive a status sheet, showing the progress you have made toward your degree.

The Senior-Year Balance Sheet will be sent to you when you have earned about 135 credits. It shows which of the B.A. degree requirements remain for you to meet.

General Extension Division Students—Students not previously registered in CLA and enrolled in the evening classes of General Extension Division (GED) may wish to work toward a B.A. degree from the Arts College. If they later enroll in regular "day school" classes, all applicable credits transfer. If they plan to take all their work in GED, they must nevertheless be admitted to the Arts College in the regular way before they can become degree candidates. Degree requirements for such students are the same as for other students.

The General Extension Division offers courses through the Department of Evening and Special Classes, including regular evening classes and television courses, and through the Department of Independent (Correspondence) Study.

Some restrictions apply to the use toward CLA requirements of courses taken through the General Extension Division. It is essential that any GED student considering applying to the Arts College make an appointment with an Extension Division counselor in the Counseling Office in 314 Nolte Center. The best way to make an appointment is by phone (373-3905).

Students are also urged to obtain a copy of the *Evening and Special Classes Bulletin*.

Change of Registration

Changing your registration is done with a Cancel-Add form, and is often called "cancel-adding." Changing your registration involves the same six steps required for registration, and may require additional approval for special requests discussed below.

Your registration is the official record of your academic obligations until an officially approved Cancel-Add form is turned in at the CLA window in Morrill Hall. This is particularly important when you are in the process of canceling a course. Informal approval of a cancel by your instructor and your adviser is not sufficient. You should continue to attend any course you are in the process of canceling until the cancellation process is complete, as you will be held responsible for the work of any class for which you have registered until and unless that class is officially canceled.

Careful attention to these procedures will be well worth your time. Incorrect, incomplete, and late registration changes can be troublesome for you, and often deny other students the chance to take the classes they want.

General Information

Cancel-Add Procedures—The general procedures are the same as for registration:

1. Obtain a Cancel-Add form from the receptionist in your college office.
2. Get your adviser's approval on Cancel-Add form (Lower Division only).
3. Get instructor and/or Scholastic Committee approval (when applicable).
4. Clear change with Class Reservations Office, 12 Johnston Hall. This step is not necessary after the second week of the quarter, or if none of the courses being canceled or added is a reserved class.
5. Turn in Cancel-Add form at the CLA window, Window 10 or 14, in Morrill Hall.
6. Sometimes a change of fees results, if the Cancel-Add takes you above or below 12 credits.

Cancel-Add Dates—You may not change your registration until after the end of the controlled reservations period, so that all students will have a chance to register before anyone gets a second chance. Exceptions to this rule are extended only for students with hour conflicts in their original schedules, or who have schedule problems which are the result of errors of college or University staff.

Adjustments in your schedule should be made as soon as possible. Any class you wish to enter after the first week of the quarter is a "late addition." Any class you wish to cancel after the second week of the quarter is a "late cancellation." Such late changes are not always possible, and they are subject to the restrictions listed below. See current registration instructions for dates for changing to and from P-N registrations.

Late Addition—Though adding a course after the quarter begins is discouraged, it is permitted through the first week of the quarter. After the first week, addition is permitted only with the written approval of the instructor and the Scholastic Committee.

Late Cancellation—Cancellations after the first 2 weeks of the quarter will be permitted only once in an academic year. Students seldom receive approval for a second late cancellation, and it is given only in recognition of pressing extenuating circumstances.

Cancellations made before the end of the sixth week will show the symbol W (withdrawn) on the transcript. Cancellations made after the sixth week of classes will result in a W only if you are passing at the time of cancellation. If you are failing, F is recorded. You must obtain your instructor's initials on the Cancel-Add form and an indication of your grade if you seek to cancel after the sixth week.

Cancellations during the last week of classes or thereafter are permitted only under the most unusual extenuating circumstances and require Scholastic Committee approval.

Cancellations to Below 12 Credits—Normal progress requires 45 credits per year and, in any event, all students are expected to complete satisfactorily at least 36 credits per year (or an average of 12 credits per quarter). Students may cancel to fewer than 12 credits (except in the last week of classes and assuming the cancellation is not their second late cancellation in the year) without the written approval of the Scholastic Committee. Lower Division students canceling to below 12 credits must consult with a Scholastic Committee representative before submitting the Cancel-Add form to the Recorder's Office. Upper Division students canceling below 12 credits must file a form on which they indicate their reasons for the cancellation; the form calls attention to the requirement of a minimum of 36 credits per year.

Note—Although there are no restrictions on canceling courses in the second week of the quarter, students should be aware of the difficulty of receiving permission to add courses after the first week of the quarter. Thus it will not often be possible to balance second week cancellations with courses to be added.

Canceling Out of School—A student leaves school by canceling all his classes. If he cancels classes before the end of the sixth week, the grade of W will be recorded for each class. If he cancels after the sixth week, his grades will be W only if he is passing, and F for courses he is failing.

If you should need to cancel out of college during a quarter or plan not to return in the succeeding quarter, you should report to the Arts College window (Window 10 or 14) in 105 Morrill Hall to check on your financial status, cancel courses for the current or succeeding quarter, and generally clarify your relationship with the University. This always involves referral to the Arts College office, since members of the Arts College staff are interested in being of any assistance possible. You probably will want to discuss your academic standing and possibilities of return or transfer, grades to be awarded, wisdom of the decision to cancel, financial needs, job placement, or other topics.

Regulations and Procedures

Credits—Amount of work is expressed in credits. Each credit demands, on the average, 3 hours a week of a student's time; that is, 1 class hour with 2 hours of preparation, or 3 hours of laboratory work.

Grades—The Arts College employs two grading systems, the A-F system and the P-N system. Students indicate on their registration blanks the system by which they are to be graded in each class. They may not change from one grading system to the other at any time after the end of the first week of classes.

In the A-F system, there are four passing grades: A (highest), B, C, D (lowest). The grade of F indicates a student did not successfully complete (or pass) the course. The grade of D, while a passing grade, reflects substandard work, and must be balanced by grades of B or A in order to maintain the C average required for graduation.

The registration symbol I (incomplete) is assigned when a student neither earns a final grade by completing a course nor qualifies for a W (withdrawal—see below). A student may earn a permanent grade in place of an I with the permission of the instructor (or of the department, in case the instructor is unavailable). For the convenience of both students and instructors, I's should be made up early in the next regular quarter of attendance. The date for completion of the remaining course work is established by the instructor, although the time may be extended if the instructor believes a delay is warranted. Students do not have to be registered in order to make up I's.

An I which is not made up remains on the student's record; it does not count in the grade point average. When an I is made up, it is removed from the record.

The registration symbol of W is given when a student officially withdraws from a course in which he was registered. The policies governing cancellation are discussed above in the section on Change of Registration. The W is assigned in all cases of official cancellation *during the first 6 weeks of classes* irrespective of the student's standing. *After 6 weeks*, the registration symbol of W is given only to students who are not failing at the time of official cancellation.

There is a symbol X which may be reported in continuation courses for which a grade cannot be determined until the sequence is completed. When the sequence is completed the X is changed to a permanent grade.

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A registration symbol V (visitor) indicates registration as an auditor or visitor.

P-N Grading System—The college is continuing its experiment with a new grading system, directed toward encouraging students to take a greater variety of courses. Freed to some extent from the pressure of grades, legitimate and realistic as those pressures may be in general, students may be encouraged also to pursue their learning more for its own sake, studying for personally motivated inquiry rather than as a response to specific classroom demands. Whether these goals are accomplished and the system continued will depend largely on how wisely students use P-N.

P stands for "Pass" and N for "No credit." Neither counts in the grade point average, but credits of P count toward graduation. N grades will undoubtedly be noted by those who review records even though the GPA is unaffected by them. The dividing line between P and N is approximately the same as that between D and F.

Restriction on Use of P-N—A student may not register on the P-N basis for courses in his major (unless they are offered on P-N only) or courses identified by the department or professional school as specific requirements or prerequisites.

A student may not present toward his B.A degree more than 25 percent of his total residence course credits on P-N.

Courses in education, public health, and business administration are not available on P-N.

● **Grade Points**—Quality of work is indicated by *grade points*. Grade points are assigned to course grades as follows: to each credit with grade of A, 4 grade points; to each credit with grade of B, 3 grade points; to each credit with grade of C, 2 grade points; to each credit with grade of D, 1 grade point. An F carries no grade points. Thus for a 3-credit course completed with a grade of B a student would be assigned 9 grade points.

● **Grade Point Average**—Grade point average is defined as the number of grade points earned divided by the total number of credits for which grades (A,B,C,D,F) have been recorded. A grade point ratio of 2.00 (C average) is the minimum standard required for satisfactory progress toward the college's degrees. The 2.00 grade point average must be maintained also in Upper Division courses in the major and in all Upper Division courses. (For students under the OLD graduation requirements, the 2.00 is in Upper Division residency rather than in Upper Division courses.)

● **Satisfactory Progress**—A student in the Arts College is expected to make "satisfactory progress"—a C average. The cases of students who are not reaching this standard are considered by the Scholastic Committee. A student who believes he is in difficulty should see his class instructor or his adviser immediately rather than wait until he has received a poor grade.

Scholastic Probation—Whenever a student's record indicates that he is in serious academic difficulty, he is placed on probation. This is to alert him to the urgent need to improve his grades and to afford him special assistance in analyzing his problems. If a student on probation does not demonstrate the likelihood of going ahead successfully in the college by showing significant improvement, he will be dropped. A student who believes that heavy outside work, extra-curricular participation, or other competing activities may be interfering with his academic achievement should make immediate adjustments; such factors will not be acceptable as excuses for failure to improve.

Students will be placed on probation because of frequent cancellations and incompletes as well as below-average grades. If a student is *admitted* to either

Lower or Upper Division with less than a C average, his admission is probationary.

Performance in courses taken on P-N will also be taken into account in determining a student's scholastic status in the college. A student is removed from probation when he has an overall C average; in Upper Division this rule applies to all three areas noted above.

Exclusion from the Arts College—Students are excluded from the college when all available evidence suggests that they are currently unable to make sufficient academic progress to qualify for graduation. Such students are often accumulating so many credits of substandard work that they are jeopardizing their chances of ever graduating from the Arts College or transferring elsewhere; continued registrations are not in their best interest, and do not represent the best use of the college's resources.

The determination to exclude a student is made by the Scholastic Committee and is based on all the evidence available. Students may appeal an exclusion action if they believe they have significant information which was not known when the action was taken. Such appeals are not likely to be granted unless the new evidence suggests that the student will make immediate and drastic change in his academic performance.

Students excluded from the college are urged to discuss their situation with a representative of the Scholastic Committee. He can offer advice on alternatives to college, transfer to other institutions, and the prospects for possible readmission to CLA.

Readmission to the Arts College—Students excluded from the Arts College are allowed to return only with the approval of the Scholastic Committee. Such approval is given only when there is reason to believe that the factors which previously caused poor performance have been corrected and that, upon readmission, the student's work will improve enough to qualify him for his degree.

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

Students who return after being excluded will be registered on strict probation. They may be dropped at any time that their work is unsatisfactory.

Extension courses or work in another college, taken while a student is excluded from the Arts College, will not be recognized for eventual credit in the Arts College unless approved by the Scholastic Committee.

Class Attendance—Every student in the Arts College has a responsibility for class attendance. All departments hold students responsible for work in a course but differ somewhat in their treatment of absences. The student must, therefore, learn the policy of his particular instructor and (if he has a legitimate excuse such as illness) arrange with him for making up the work. Either the instructor or student may consult with the Scholastic Committee concerning the validity of the excuse. In some departments students who miss opening classes lose their places in the courses.

Final Examinations—The all-University final examination schedule is published each quarter in the *Class Schedule*. Students are required to take examinations at the scheduled time. If any student has a conflict in examinations or if he has three examinations in a 16-hour period, he should report that fact to his college divisional office for possible adjustment on or before the date indicated in the examination announcement of the current *Class Schedule*.

If a student misses a final examination, an I (incomplete) is assigned. The student must obtain the instructor's permission to complete the work.

Petition for Exemption from College Regulations—The faculty has set up

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certain regulations to help students achieve a good education and to facilitate operations of the Arts College. If a college regulation seems to conflict with your educational goals, the Scholastic Committee might be able to help.

You may petition for exemption from a college regulation in your college office. Often it is not necessary to submit a written petition, while in some cases you will need to make an appointment with a Scholastic Committee representative. Describe your request to the receptionist; she will advise you on the appropriate procedures for presenting it.

Appeals and Suggestions for Improvement—Any student who wants an explanation of a regulation or procedure of the college or who has recommendations for change is invited to discuss his concern with a Scholastic Committee representative or his adviser.

The Student Ombudsman Service is another place to register a complaint or make suggestions. The Student Intermediary Board can also be instrumental in bringing about improvement in the college, based upon evidence brought to them from fellow students.

The college does all it can to maintain open channels of appeal and protest for its students, whatever their complaint. The first place to register a dissatisfaction is with the person or office which appears to be its source. If this does not resolve the issue, students are invited to seek advice from their college divisional office as to appropriate steps of further review.

Special Opportunities and Programs

Special Examinations—A student may earn credit, demonstrate proficiency, or meet group distribution requirements by examination.

Credit by Examination—Credit for material mastered outside of class (exclusive of high school work) may be obtained by special examination. A student who believes that he is as well informed in a particular subject as the student successfully completing the course should apply to the Scholastic Committee for a special examination. If the application is approved, the committee will appoint a special faculty committee to administer the examination. The fee for such examination is \$20. Usually no grade is assigned. "Student" is defined as someone registered in a degree program at the time he takes the examination. The Scholastic Committee may in some cases allow a student to carry less than 12 credits in a quarter in which the student is preparing for such examinations.

Proficiency by Examination—If a student wishes to carry a course for which he does not have the prerequisite he may apply to the Scholastic Committee for permission to take an examination to demonstrate his proficiency in the prerequisite. A satisfactory showing in the examination will admit the student to the course but will not entitle him to credit in the prerequisite course. There is no fee for this examination.

Independent Study—The college has developed a number of special arrangements under which students can study a regular course almost completely on their own or, with an instructor, design courses to investigate topics not covered in current courses. These independent study opportunities are outlined below.

Y Registration—With instructor and departmental permission, a student may include as part of his regular registration a course which he plans to study on his own, without class attendance. He takes such examinations and submits such work as the instructor requires, but ordinarily has little or no contact with the instructor. The usual registration procedures—fees, deadlines, grades, etc.—apply. His transcript shows the course number plus the suffix Y.

Extra Credit Registration—With his instructor's and the department's approval, a student may register for extra credit (1 to 3) in a course he has taken or is taking, to pursue in greater depth a topic of the course or to add a closely related topic. If the department offers a separate course on the topic, the student should register for that course. The record shows the course number plus the suffix X.

Directed Study and Directed Research—Most departments offer courses designated directed study (usually numbered 970); some also offer directed research (990). With instructor and department approval, a student may design and complete for credit a study project (1 to 5 credits; in some departments, to 15 credits), relevant to the discipline and not covered in a regular course. The student works largely on his own, with general assistance and supervision of the instructor. Credit assignments are difficult to determine, but the general guideline is 3 hours of student work per week over the quarter for each credit. Regular registration procedures and the usual student evaluation methods apply to such study.

University College 3-075—When study similar to that described above is interdisciplinary (assuming it is not properly assigned to SSci 3-970 or Hum 3-970), a student may apply to register for UC 3-075. A maximum of 15 credits may be taken under this course number, with a given registration ranging from 3 to 15. For registrations in the 9-15 credit range, CLA usually expects the project to have more than one monitor (or instructor). Further information may be obtained from 106 Nicholson Hall or 106 Johnston Hall.

Directed Instruction—A few departments have created opportunities for students to assist in teaching a course they themselves have already studied, believing that one of the best ways to learn is by teaching others. Such registrations require permission of the instructor and the department. The usual course number is 3-980, the credits from 1 to 5, with a maximum of 5 credits applicable toward the B.A. degree.

Scholarships and Awards—In addition to the all-University aids available through the Office of Student Financial Aid, 107 Armory, there are a number of scholarships and awards given by the following departments: Art, Classics, English, German, History, Journalism and Mass Communication, Library School, Music, Political Science, Scandinavian Area Studies, Sociology, and Speech, Communication, and Theatre Arts, as well as the Arts College offices. Students seeking further information concerning these awards should apply directly to the department office concerned.

HONORS PROGRAMS

The Arts College offers an extensive program of honors opportunities that provide challenging educational experiences appropriate to students of superior ability. These opportunities, which call on the resources of the entire University and of the community of which it is a part, are available to both Lower Division and Upper Division students.

Lower Division Honors Opportunities—Lower Division students may register in the Honors Division by invitation at the time of admission or upon achievement of a 3.25 grade point average in the Arts College. Selected freshmen and sophomores meet for weekly colloquium discussions with distinguished members of the faculty and are assigned to special advisers, usually senior faculty members in the department of each student's intended major. These advisers may approve extra-credit loads, advanced courses or audited courses, and make other exceptions justified by high motivation and achievement. Many departments have also instituted honors sections in Lower Division courses that provide for more in-

General Information

tensive study, additional reading, and other special learning experiences. (Grade distributions in honors sections and courses take into account the high quality of all the students.)

Upper Division Honors Opportunities—Every department of the college has established an honors program for its juniors and seniors (individual descriptions can be obtained from the Honors Division office, 115 Johnston Hall). These programs provide a number of opportunities such as honors sections, seminars, individual research, and tutorials. Honors students are also encouraged—by some departments, required—to elect one or more College Honors Seminars. In contrast to departmental honors courses, which emphasize depth of learning in major fields, College Honors Seminars are directed toward serving the interests of students outside the major at a level of sophistication presupposing basically high intellectual ability and motivation.

Continuation in the Honors Division—Continued registration in the Honors Division is based upon academic achievement and active participation in one or more of several opportunities, both academic and extracurricular, designated by the Faculty Honors Council.

Graduation with Honors—Graduation *cum laude*, *magna cum laude*, or *summa cum laude* is achieved by fulfillment of college requirements, which include successful completion of the departmental honors program in the student's major. Most honors students are admitted to departmental honors programs at the end of their sophomore year. Requirements for admission are at least a 3.00 grade point average overall and in prerequisite courses for the major, as well as approval of the major adviser or departmental honors representative. All students hoping to graduate with honors must register in the Honors Division.

MARTIN LUTHER KING PROGRAM

The Arts College, in cooperation with other appropriate units of the University, is able to offer a wide range of special services to the students enrolled in the CLA Martin Luther King (MLK) Program. The program provides financial aid, tutoring, and intensive counseling for students who otherwise might not be able to pursue higher education. The aim of the program is to make every legitimate effort to help MLK students make progress toward a degree, although nothing is done to alter or lower the standards finally required for graduation. Admission is not limited to students from particular racial or ethnic minority backgrounds, but centers on those with the most critical financial needs and most serious limitations in previous educational opportunities.

UNIVERSITY COLLEGE

This college draws upon the entire University for its courses. The college has no fixed curriculum, its purpose being to provide flexibility in the educational program of the undergraduate who finds none of the standard curricula of the other school and colleges suited to his interests or particular objectives. Such a student, with the approval of the University College Committee, may arrange a study program including work in two or more schools or colleges to fit his individual needs. One of the criteria for admission is that the program must be in more than one college. (For interdepartmental programs in CLA, see Section II of this bulletin. Upon completing this approved program, he is granted either a B.A. or a B.S. degree. An applicant for admission should be at least a third-quarter sophomore who has completed at least 1 full quarter at the University of Minnesota.

University College also has made available to students from every undergraduate college in the University an opportunity for off-campus independent

study. A student may earn from 3 to 15 degree credits by registering for independent study projects under UC 3-075. The student designs his own project and consults with an appropriate faculty member who supervises and evaluates the work.

A second opportunity for involvement in interdisciplinary educational experiences is available through the new Living-Learning Center (1425 University Avenue S.E.). The center is a service unit of University College designed to assist students, faculty, and community persons, individually or as small groups, to develop and carry out off-campus field study projects. No credits are granted through the Living-Learning Center.

Information about University College and its independent study opportunities is available from the University College Office, 106 Nicholson Hall.

Services

COLLEGE OF LIBERAL ARTS

Faculty Advisers—As you go through college you may need help with such matters as getting registered, selecting courses, choosing your vocation, arranging finances, participating in campus community affairs, or solving personal problems. Much of this assistance is provided by the Arts College staff, though for some problems you may wish to take advantage also of the all-University personnel services. You will be given the services of a faculty adviser as follows:

1. When you enter the Arts College as a freshman or sophomore, an adviser will discuss your objectives and plans with you, and assist in planning a program of courses. If you are a freshman without previous college work, the person you see will usually be your adviser for the remainder of the year. Feel free to go to him with any problem that arises. You can reach him through the Lower Division Offices, 201 Johnston Hall, 16 Walter Library, or 206 TNM.

If at any time you decide to enter one of the following programs, you should report to 216 Johnston Hall for referral to a special adviser: medical technology, occupational therapy, physical therapy, and mortuary science.

If you have had previous college work, you will be assigned to a faculty adviser chosen on the basis of your major.

2. Before registering for the fall quarter of your second year, you will have the opportunity to express a preference for your new faculty adviser.
3. When you are a third-quarter sophomore and almost ready to enter the Upper Division or a professional school.
4. Upon admission to Upper Division you will be assigned or will select a major adviser to help plan your work for the junior and senior years. This choice is usually made in the departmental office of your major.

Before seeing your adviser, you should study the bulletin carefully and present a tentative program and any specific questions you have in mind. You should bring any records from the Office of Admissions and Records indicating credit already earned at this University or elsewhere.

Changing Your Adviser—Should you wish to change your adviser, apply at 216 Johnston Hall for Lower Division, or at the Upper Division office appropriate to the department to which you want to change.

Scholastic Committee—From time to time almost every student needs to consult the Committee on Student Scholastic Standing (usually called the Scholastic Committee).

General Information

This committee is a group of administrators, faculty, and students of the college charged with interpreting and enforcing faculty regulations. It is empowered to make exceptions to faculty regulations when those regulations work to the educational disadvantage of a student, provided the basic spirit of the regulation is maintained.

Often a student is in doubt about his obligations or has a question about a rule that seems to stand in the way of his legitimate educational objective. The Scholastic Committee seeks to help resolve such problems. Its special counselors available for consultation often can help work out adjustments. A representative of the Scholastic Committee is available in every Arts College divisional office.

Conduct Committee—The Committee on Student Scholastic Conduct, composed of an equal number of student and faculty members, is charged with investigating allegations of academic dishonesty and taking appropriate action on problems referred to it by the faculty. Actions taken by the committee are based on its responsibility for aiding students in maintaining the college's standards of integrity. The committee has authority to place students on disciplinary probation, fail them in courses, suspend them from the college, or take such other actions as the behavior seems to justify.

A faculty member may take appropriate action in a given instance if the student is in the Arts College and if his action is limited to modification of the grade in the course. A report must be filed with the committee, and the student will be informed of his right to request a hearing before the committee.

The office of the executive secretary of the committee is in 220 Johnston.

Disciplinary matters of a nonacademic nature or those involving two or more colleges are handled by the All-University Committee on Student Behavior.

College Placement Services—Assistance to graduates in finding appropriate employment is provided both by the students' major departments and by the College Placement Service, 17 Johnston Hall. You should check with your departmental office and also register with the Placement Service very early in your senior year.

The College Placement Service will aid you in finding job opportunities that fit with your wishes and your capacities. Many recruiters from business, industry, and governmental agencies visit the campus each year, chiefly in winter quarter, for interviews with seniors.

ALL-UNIVERSITY SERVICES

In addition to your faculty adviser and college office counselors, the University provides the following specialized services for all students (see *General Information Bulletin* for details):

Emotional Problems—Mental Health Clinic, University Health Service Building

Financial Help—Office of Student Financial Aid, 107 Armory Building

Foreign Student—Foreign Student Adviser, 717 E. River Road

Health Problems—University Health Service Building

Housing—Housing Office, 201 Eddy Hall

Legal Problems—Legal Aid Clinic, 214 TNM

Part-time Job (on or off campus)—Student Employment Service, 30 Wulling Hall

Personal Problems—Student Counseling Bureau, 101 Eddy Hall

Religious Activities—Religious Activities Coordinator, 306 Walter Library

Selective Service Information—National Services Adviser, 105 Morrill Hall

Speech and Hearing Difficulties—Speech and Hearing Clinic, 110 Shevlin Hall

Student Activities—Student Activities Bureau, 110 TNM; or Coffman Union Program office, 229 Coffman Memorial Union

Study Skills Improvement—Reading and Study Skills Clinic, 101 Eddy Hall

Veterans' Benefits—105 Morrill Hall

Vocational Choice—Student Counseling Bureau, 101 Eddy Hall

Work-Study Jobs—Work-Study Program, 107 Armory Building







Section II

COURSE OFFERINGS AND MAJOR SEQUENCES

NEW COURSE NUMBERING SYSTEM

Courses in this bulletin are identified under a new numbering system, which will be in effect throughout the University beginning Fall Quarter 1970. If one spends a few minutes learning its general rationale, it should present few difficulties for returning students, and none for new students. In the course description section of this bulletin, the old course number for that course appears in parentheses. A master conversion guide will also be available.

To avoid re-registering for a course already taken, returning students should fill out a complete schedule of work they have completed, using the new numbers.

A unique feature of the new numbering system is that course numbers ending in zero identify courses which may be repeated for credit. Thus, a student registering for a second quarter of a course whose number ends in zero writes that same course number on his registration when registering for it the second time. These courses will usually be of a less structured nature, such as field work, independent research, directed teaching, directed study, practicums, and seminars whose content changes each quarter.

Note—Some courses listed in this bulletin may not be repeated for credit, even if their numbers end in zero. Such courses will be those offered by the Departments of Biochemistry, Botany, Chemistry, Naval Science, Physics, Public Health/Biometry, and Zoology. Courses offered for CLA students by the Schools of Business Administration and Home Economics are also exceptions to the general rule that courses with numbers ending in zero may be repeated for credit.

NEW NUMBERING SYSTEM KEY

<i>First digit (level designator)</i>	<i>Meaning</i>
0-xxx	No degree credit
1-xxx	Lower Division course, primarily for freshmen and sophomores
3-xxx	Upper Division course, primarily for juniors and seniors. Also open to sophomores with at least C averages overall and in all prerequisite work
5-xxx	Open to juniors, seniors, and graduates; also open to 3rd-qtr sophomores by special permission of the Scholastic Committee; 3rd-qtr sophomores should submit a petition in their college office
8-xxx	Graduate courses; generally not open to undergraduates (see <i>Graduate School Bulletin</i> for these listings)
 <i>Other digits and numbers</i>	
3-970 or 5-970	Directed Studies or Directed Readings courses
3-980 or 5-980	Directed Instruction courses
3-990 or 5-990	Directed Research courses
Final digit of zero	May be repeated for credit

ABBREVIATIONS AND SYMBOLS

- Departmental prefix 3 or 4 letter abbreviated prefix indicating name of department (e.g., Engl for English)
- Course number 4 digits denoting the course; course number remains the same no matter which quarter offered
- f,w,s Used in bulletin, but not in your registration, to show in which quarter course is offered: (f) fall, (w) winter, (s) spring
- (129) Number in parentheses is *old* course number
- Number of credits Listed for each quarter of course in same order as course number(s)
- 1-001, 1-002, 1-003 Series punctuated by commas may be entered any quarter
- 1-001/1-002/1-003 Series linked by diagonals must be taken in order shown
- + All courses before dagger must be completed before credit is given for any quarter
- § No credit given if credit has already been granted for course preceded by this symbol (section mark)
- ¶ Concurrent registration allowed with course listed after this symbol (paragraph sign)
- # Consent of instructor is required for registration (number sign)
- △ Consent of department or school offering course is required for registration (triangle)
- , Comma means "and" when it appears in a series of prerequisites
- H Honors course or honors section of regular course

ACCOUNTING

See Business Administration

AEROSPACE STUDIES

(Air Force ROTC)

The Air Force ROTC program enables qualified young men to pursue a course toward a commission as an officer in the United States Air Force while completing requirements for a degree from the University. The student blends Air Force ROTC course work with his college curriculum and is commissioned a second lieutenant in the United States Air Force upon graduation. Emphasis in the Air Force ROTC curriculum is on the development of the student's leadership and management skills and on improvement of his ability to communicate. The student also receives a solid background concerning the nature and purpose of the military forces.

Arts College will accept credits from Aerospace Studies courses to fulfill a minor toward the B.A. degree or for credits outside the major and minor. For specific information concerning the requirements and opportunities of this program see

Course Offerings and Major Sequences

the *Army, Navy and Air Force ROTC Bulletin* of the University of Minnesota or call the Aerospace Studies office in room 3 of the Armory.

LOWER DIVISION COURSES

- 1-101f (101). **FOUNDATIONS OF NATIONAL POWER.** (1 cr; prereq Δ)
Study of the meaning and scope of war with emphasis on factors and instruments of national power and how these instruments are employed to attain national objectives.
- 1-102w (102). **DEFENSE ESTABLISHMENTS.** (1 cr; prereq Δ)
Study of the mission of the Defense Establishment showing relationship and role of each of the armed services in accomplishing this mission. Familiarization with doctrine and mission of the United States Air Force.
- 1-103s (103). **STRATEGIC FORCES.** (1 cr; prereq Δ)
Study of the functions of strategic offensive and defensive forces.
- 1-201f (201). **LIMITED CONFLICT RESOURCES.** (1 cr; prereq Δ)
Examination of role and functions of U.S. general purpose forces.
- 1-202w (202). **AEROSPACE SUPPORT: RESEARCH AND DEVELOPMENT.** (1 cr; prereq Δ)
Study of Aerospace Support Forces, concentrating on contribution of support functions to overall military posture.
- 1-203s (203). **TRENDS AND IMPLICATIONS.** (1 cr; prereq Δ)
Study of the basis of present conflicts. Familiarization with international security alliances. Examination of contemporary actions and proposals in pursuit of peace.

UPPER DIVISION COURSES

- 3-301f (131). **DEVELOPMENT OF AIR POWER.** (3 cr; prereq Δ)
Study of fundamentals of a nation's power, nature of war, and application of aerospace forces in support of national goals. History of air power. Seminars with oral and written reports. Emphasis on communication skill development. Field trips.
- 3-302w (132). **AEROSPACE POWER TODAY.** (3 cr; prereq Δ)
Analysis of the mission and organization of the Defense Establishment; aerospace concepts, doctrine, and use in relation to a nation's resources. Importance of the United States' space program. Seminars developing individual skills in research and oral reporting. Field trips to selected Air Force bases.
- 3-303s (133). **ASTRONAUTICS AND SPACE OPERATIONS.** (3 cr; prereq Δ)
Intensive examination of space vehicle systems and ground support equipments; space exploration; orbits and trajectories; spatial environment; future development of astronautics and space operations. Seminars stressing research skills and communication techniques. Field trips.
- 3-401f (141). **PROFESSIONALISM.** (3 cr; prereq Δ)
Study of professionalism including the meaning of professionalism, foundations of military professionalism and its ethical characteristics and responsibilities, case studies in human relations, meaning and function of military discipline and cases in military law.
- 3-402w (142). **AIR FORCE LEADERSHIP.** (3 cr; prereq Δ)
Study of leadership including the philosophy and scope of leadership. Interaction of individuals and groups in large scale organizations. Role playing, conference and discussion methods, communication and problem solving.
- 3-403s (143). **MILITARY MANAGEMENT.** (3 cr; prereq Δ)
Study of management including functions of the military executive; planning, organizing, directing, coordinating, and controlling. Surveys application of management functions to the organization. Explores management tools, concepts, practices, controls, and techniques to assure successful mission achievement.
- 3-404f,w,s (144). **FLIGHT INSTRUCTION PROGRAM.** (3 cr; prereq Δ)
Ground school in conjunction with flight training of 36:30 hours leading to FAA certification as a private pilot. Includes instruction and practice on federal aviation regulations, aircraft instruments, meteorology, radio aids, air navigation, flight theory, and other subjects pertaining to safe and efficient operation of aircraft.

AFRO-AMERICAN STUDIES (Afro)

Although a major sequence leading to the B.A. degree is being planned, specific details are not available as this bulletin goes to press. Information on the major

program will be available in the departmental office, 374 Social Sciences, as soon as the program is fully developed.

The Afro-American Studies Department has been born out of the struggle of Black Students and all Black people for an education that would provide a meaningful definition of the Black existence.

In the department, Black ideologies will be examined, disputed and evaluated by the Black student and the community. Articles which research, document and analyze the Black experience will be published, so that theory is balanced with fact, and ideology with information.

The content of an Afro-American studies curriculum will include the experience of Black people in the broadest possible geographical and chronological setting. It will include course work bearing not merely upon the Black experience in the United States, but upon the African and Latin American experiences as well.

The department sees a Black studies curriculum as serving the following purposes. (1) It should provide for Black undergraduate majors a comprehensive understanding of Black culture and society in Africa and America that will enable them to provide service roles in their own communities. (2) It should provide for white undergraduate majors an understanding of Black culture that will help them promote greater understanding in the white community. (3) It should provide for non-majors service courses that will at the very least introduce them to the most salient features of Afro-American history, Black culture and society.

LOWER DIVISION COURSES

1-036/1-037† (36-37†). BLACK PARTICIPATION IN AMERICAN POLITICS. (3-3† cr)

E. Craig

The course will examine the participation of the American Black man in administrative, judicial, electoral and confrontation politics in the United States.

1-101f/1-102w/1-103s (1-2-3). LANGUAGE ARTS FROM A BLACK PERSPECTIVE. (4-4-4 cr)

1-101: Interdisciplinary survey of minority culture. 1-102: Minority history. 1-103: Current developments in the minority communities (especially Black and Chicano).

1-221f/1-222w/1-223s (21-22-23). BEGINNING SWAHILI. (5-5-5 cr)

1-221: Beginning grammar and vocabulary with emphasis on conversational drill. 1-222: Grammar and vocabulary continued. Introduction to reading and writing. 1-223: Reading and discussion of simple texts. Additional conversation and writing.

1-301 (30). MUSIC OF BLACKNESS. (4 cr)

Lectures, discussion, demonstration of Black music in America.

UPPER DIVISION COURSES

3-061/3-062† (60-61†). BLACK FAMILY. (4-4† cr) Johnson

This course will deal with the basic fabric of family life. In the course we will attempt to help arrive at a fuller understanding of the Black family, both as a unit within Black society and within society as a whole.

3-081/3-082† (80-81†). BLACK PHILOSOPHY. (5-5† cr) Williams

An outline of the sum total of the history, culture, and social thought of Black people in the United States, which supplies the raw goods out of which we endeavor to develop a system of logical reasoning. The course will examine the substance which gives clarity and continuity which links the past, present, and future. It will cite the variables and the constant.

3-091/3-092† (90-91†). DEVELOPMENT OF A BLACK POLITICAL STRATEGY. (4-4† cr)

E. Craig

This will be a research course concerned with (a) contemporary political attitudes and behavior of American Black people; (b) sources of community power; and (c) a history of Black political thought.

3-970 (70). DIRECTED STUDY. (1-15 cr) Anthony and staff

Special assignments in Afro-American studies supervised by department faculty.

Course Offerings and Major Sequences

5-001, 5-002 (101, 102). LAW AND SOCIETY—A MINORITY POINT OF VIEW. (3,3 cr)
Ward

A look at Afro-American history from the point of view of American Constitutional development as it relates particularly to the American Black minority.

5-900f,w,s (111, 112, 113). SENIOR SEMINAR: BLACK RE-EVALUATION OF THE AFRO-AMERICAN HISTORICAL EXPERIENCE. (2-4 variable cr by ar with instructor; prereq jr, sr, or grad student) Anthony and staff

The course will re-evaluate different periods of Afro-American History.

AMERICAN INDIAN STUDIES (AmIn)

The principal goals of the Department of American Indian Studies are: to offer undergraduate education, including a B.A. degree in American Indian Studies, that is based on sound scholarship and contributes to an understanding of contemporary problems and issues; and to offer upper division and graduate students courses that will contribute to their training in education, law, medicine, public health, social work, and other professional fields. The Department will also act as a resource base for programs conducted in cooperation with Indian communities and organizations.

The Department will propose a major sequence of courses in 1970-71 when enough new courses have been developed. The major will consist of two categories of courses: (1) core courses in American Indian Studies; and (2) supporting courses in other departments of CLA and other colleges. An up-to-date list of supporting courses can be obtained from the Departmental office. The Office also has information about new courses approved too late to be contained in this bulletin.

Freshmen and sophomores in CLA who wish a background for majoring in American Indian Studies should take Anth 1-002, Introduction to Cultural Anthropology, and Hist 1-301, 1-302, American History. Students in General College who want to prepare themselves to transfer to CLA and major in American Indian Studies should take GC 1-811, 1-812, and 1-813, Minnesota Indian History, American Indian Culture, and Minnesota Indians in the Sixties. These General College courses are also open to a limited number of CLA students.

LOWER DIVISION COURSES

1-021, 1-022, 1-023 (21, 22, 23). BEGINNING CHIPPEWA. (5 cr)

Speaking and oral comprehension of basic Chippewa speech patterns. Reading knowledge developed in later part of course.

UPPER DIVISION COURSES

3-061 (60). AMERICAN INDIANS IN THE MODERN WORLD. (3 cr; prereq Anth 1-002 or an introductory social science course or GC 1-811 or 1-812 or 1-813)

Brief review of the history of Indian-White contacts. Impact of federal policy on American Indians. Adaptation of American Indian cultures to contemporary social conditions.

3-970 (70). DIRECTED STUDY. (Cr ar; prereq #) Staff

5-121 (121). URBAN INDIANS IN THE UNITED STATES. (3 cr, \$\$\$ci 3-209; prereq AmIn 3-061 or Anth 1-002 or Anth 3-211 or GC 1-811 or 1-812 or 1-813)

Application of social science and historical analysis to a major and relatively recent phenomenon in Indian American life; the rapid cityward migration taking place since World War II.

5-131 (130). INDUSTRIALIZATION, EMPLOYMENT, AND THE INDIAN AMERICAN. (3 cr; prereq AmIn 3-061 or GC 1-811 or 1-812 or 1-813 or #)

Sources of unemployment on Indian reservations; efforts to promote industrialization; employment problems of urban Indians.

5-211 (140). THE ARTS OF THE AMERICAN INDIANS. (3 cr; prereq AmIn 3-061 (60) or 3 cr in art history or #) Morrison

Emphasis on visual arts of North American Indians. Some attention to the other arts and to Latin American Indians.

AMERICAN STUDIES (AmSt)

● Major Sequence in Arts College —

Required Background Courses:

AmSt 1-101, 1-102, 1-103 (Hum 21, 22, 23) or AmSt 3-111, 3-112, 3-113 (Hum 71, 72, 73)

A major in American Studies for the B.A. is offered under the general provisions of an interdepartmental major (see page 12).

Major Sequence:

The Upper Division courses that constitute this major include 15 cr in courses dealing with foreign civilization and 51 cr in courses concerned with civilization in the United States as follows:

A. 42 cr in approved courses, including at least 9 cr in each of four fields: American history; American literature; American art and philosophy; social sciences in United States. For courses in the participating departments (history, English, philosophy, sociology, etc.) that are accepted for the B.A. degree in American Studies, see *Program in American Studies* and the annually revised lists of approved courses.

B. 9 cr in AmSt 3-301/3-302/3-303

Honors Opportunities and Graduation with Honors — Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the departmental office.

LOWER DIVISION COURSES

1-101, 1-102, 1-103 (Hum 21, 22, 23).** AMERICAN LIFE. (3, 3, 3 cr)

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

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

3-111, 3-112, 3-113 (Hum 71, 72, 73).** INTRODUCTION TO AMERICAN CIVILIZATION. (3, 3, 3 cr)

Introduction to American cultural history. Each quarter organized around topics that disclose a major conflict of ideals—for example, liberty and property in early republic, individualism and majority rule in pre-Civil War era, or materialism and idealism in present industrial age.

3-301/ 3-302/ 3-303 (90-91-92). PROSEMINAR: AMERICAN STUDIES. (3,3,3 cr; prereq sr and #)

Proseminar and individual conferences. Each quarter organized around problem presented by some representative theme, figure, or period.

3-970 (70). DIRECTED STUDIES. (1 to 15 cr; prereq # and Δ)

Course devised for the independent study program and designed to permit student to pursue his interests in special reading and/or study.

ANATOMY (Anat)

(College of Medical Sciences)

For a complete list of courses in human anatomy, see the *Medical School Bulletin*.

**A student may take any combination of AmSt 1-101, 1-102, 1-103, 3-111, 3-112, 3-113 (Hum 21, 22, 23, 71, 72, 73) up to a maximum of 9 cr. Upper Division students are urged to take the AmSt 3-111, 3-112, 3-113 (Hum 71, 72, 73) sequence if possible.

Course Offerings and Major Sequences

LOWER DIVISION COURSES

1-004f,s (4). **ELEMENTARY ANATOMY.** (4 cr; prereq students registered in paramed fields, 1 qtr college biology)

ANTHROPOLOGY (Anth)

● Major Sequence in Arts College—

Prerequisites:

Anth 1-001 and 1-002 or 5-101 and 5-111

Requirements:

A. 3 cr of New World archaeology or Old World archaeology to form a sequence with an ethnology course (e.g., if Anth 3-211, Indians of North America, is chosen, the New World archaeology requirement will be met by Anth 3-511, North American Archaeology; if Anth 5-222, then Anth 5-521).

B. 3 cr of New World ethnology.

C. 3 cr of Old World ethnology.

D. 9 cr of social/cultural anthropology which may include linguistics.

E. 3 cr of physical anthropology.

(Anth 5-101 and 5-111 cannot be counted toward credit for a major.)

Students planning to take graduate work in anthropology should immediately consult with the director of graduate studies for assignment to a major adviser for detailed planning of major program.

The fact that anthropology concerns itself with man and his cultures in all times and places, lends to it a uniquely appropriate quality for general and liberal education. The two introductory courses (1-001, 1-002) are recommended for general educational background.

Honors Program—Consult departmental major adviser (see Section IV).

LOWER DIVISION COURSES

1-001f,s (1A). **INTRODUCTION TO ANTHROPOLOGY: PREHISTORIC MAN AND CULTURE.** (5 cr) Johnson

Origins of man and development of modern races. Growth and differentiation of cultures of man from Dawn Stone Age of early glacial times through Old and New Stone Ages to dawn of civilization in Bronze and Iron Ages.

1-002w,s (2A). **INTRODUCTION TO ANTHROPOLOGY: CULTURAL ANTHROPOLOGY.** (5 cr) Spencer

Human behavior as revealed through study of societies in all parts of world. Scientific analysis of ways in which men organize their lives, directed toward broader understanding of human capacities and purposes.

1-002Hw,s (2AH). **HONORS COURSE: INTRODUCTION TO ANTHROPOLOGY: CULTURAL ANTHROPOLOGY.** (5 cr; prereq GPA 3.0 or #) Staff

Human behavior as revealed through study of societies in all parts of world. Scientific analysis of ways in which men organize their lives, directed toward broader understanding of human capacities and purposes.

1-201 (42). **INTRODUCTION TO COMPARATIVE ETHNOGRAPHY.** (3 cr) Currier, Spencer
Systematic survey of pre-industrial cultures, by culture-area. Categories of ethnographic data. Comparative approach to the study of the principal institutions of human society and basic categories of human behavior.

UPPER DIVISION COURSES

Anth 3-211 and 3-511 are open to sophomores who have a grade of at least C in Anth 1-002. Other Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

3-121 (99). **HISTORY OF ANTHROPOLOGY.** (3 cr; prereq 12 cr in Upper Division anthropology courses) Kiste

Beginnings of anthropology as a discipline; associated intellectual climate and context. Developments within sub-fields of archaeology, ethnology, physical anthropology, and linguistics.

- 3-970 (190-191-192). DIRECTED STUDIES. (1 to 15 cr ar; prereq sr or #)
- 3-991 (95H). HONORS SEMINAR. (3 cr; prereq admission to anthropology honors program or #) Staff
Problems of theory and method in various branches of anthropology.
- 5-101 (100). PRINCIPLES OF CULTURAL ANTHROPOLOGY. (3 cr, §1-002; may be taken in lieu of 1-002) Staff
Intensive introduction to elements of cultural anthropology. Analysis of range and variability of human behavior. Principles of cultural dynamics.
- 5-111 (101). PRINCIPLES OF BIOCULTURAL EVOLUTION. (3 cr, §1-001; may be taken in lieu of 1-001) Staff
Intensive survey human biological and cultural origins and evolution. Emphasis on interpretation of paleontological and archaeological record.
- 5-971 (196). PROSEMINAR: EAST AND SOUTH ASIA. (3 cr; prereq sr)
(Same as Geog 5-299, Pol 5-486, Ortl 5-551, and Hist 5-549) Integrating course for students majoring in East and South Asia Area Studies program.

Attention of students is called to Ortl 3-501, 3-502, Asian Civilizations (see East and South Asian Languages).

- 5-981/5-982/5-983 (193-194-195). TOPICS IN ANTHROPOLOGY. (Cr ar; offered by visiting professors when available; whenever offered, topic will be listed in Class Schedule and prereqs stated at that time)
Special courses in all branches of anthropology.

Group I—Ethnology

- 3-211 (80). INDIANS OF NORTH AMERICA. (3 cr; prereq 1-002 or 5-101) Johnson, Spencer
Survey; aboriginal cultures of North America. Effects of culture contact. Contemporary problems of Indian reservations and communities.
- 5-212 (115). INDIANS OF THE GREAT PLAINS. (3 cr; prereq 1-002 or 5-101 or #) Hoebel
Prehistoric origins of tribes. Cultures of Missouri River tribes and nomads of the Plains.
- 5-215 (128). ANTHROPOLOGICAL PERSPECTIVES ON AMERICAN CULTURE. (3 cr; prereq 1-002 or 5-101 or #) Rowe
Anthropological perspectives on contemporary American culture and society with emphasis on the study of values, family organization, socialization and kinship, education and community integration.
- 5-221 (117). INDIANS OF SOUTH AMERICA. (3 cr; prereq 1-002 or 5-101) Currier, Gudeman
Ethnographic survey. Prehistory of various areas. Spanish and Portuguese contact and adjustment of various tribes to modern conditions.
- 5-222 (119). PEOPLES AND CULTURES OF MIDDLE AMERICA. (3 cr; prereq 1-002 or 5-101, waived for majors in Latin-American Area Studies) Currier, Gudeman
Survey of both Indian-Spanish-speaking people of Middle America. Analysis of processes of acculturation that have produced contemporary cultures of Mexico and Central America.
- 5-231 (118). CULTURES OF THE MEDITERRANEAN. (3 cr) Currier
Ethnographic survey of populations on or near the Mediterranean Sea. Special attention on the principal Mediterranean cultures. Historical contact among Mediterranean cultures. Mediterranean as a single culture-area.
- 5-241, 5-242, 5-243 (120). PEOPLE AND CULTURES OF AFRICA. (3,3,3 cr; prereq 1-002 or 5-101 for 5-241 and 5-242, 5-241 and 5-242 or # for 5-243) Gerlach
5-241: Survey of the cultures of Western and Central Africa. Ecological adaptation, races, languages, social organization, economic systems, political systems, aesthetic expression.
5-242: Survey of the cultures of Eastern and Southern Africa. Ecological adaptation, races, languages, social organization, economic systems, political systems, aesthetic expression.
5-243: Review of significant theoretical issues and problems in African anthropology. In depth focus on subjects of particular interest, such as ecological adaptation, urbanization, migration, change.
- 5-251 (127). ISLAMIC CULTURE SPHERE. (3 cr; prereq 1-002 or 5-101 or #) Gerlach, Spencer
Mohammed and founding of Islam. Development and spread of Islamic religion, laws, government and other institutions in Middle East, Africa, and Asia. Culture and society in contemporary Middle East.

Course Offerings and Major Sequences

- 5-252 (129). **ISLAM IN AFRICA.** (3 cr; prereq 1-002 or 5-101 or #) Gerlach
Survey of the influence which Islam has had upon the peoples and cultures north and south of the Sudan. Discussion of how Islam has spread and why and how it has caused change in the indigenous African cultures.
- 5-261 (110). **INDIAN CULTURE SPHERE.** (3 cr; prereq 1-002 or 5-101 or #) Rowe, Spencer
Survey of tribes, caste society and culture history of South Asia. Cultural influences from India in Southeast Asia.
- 5-262 (111). **MODERN INDIA: THE VILLAGE COMMUNITY.** (3 cr; prereq 1-002 or 5-101 or #) Rowe
The socio-cultural process in contemporary Indian villages; impact of technological and social change on the individual, caste and community.
- 5-263 (112). **MODERN INDIA: TOWNS AND CITIES.** (3 cr; prereq 5-262 or #) Rowe
Development of Indian towns and cities from anthropological perspective; urban life, city growth and urban migration.
- 5-271 (126). **PEOPLES AND CULTURES OF SOUTHEAST ASIA AND INDONESIA.** (3 cr; prereq 1-002 or 5-101 or #) Spencer
Cultures of peoples of Burma, Siam, French Indochina and Malaysian archipelago. Influences from India on the area. Islamic influences on Indonesia. Modern ethnic and national problems.
- 5-281 (124). **CULTURE AND SOCIETY IN CHINA AND JAPAN.** (3 cr; prereq 1-002 or 5-101 or #) Gerlach
Development of Chinese institutions and other cultural manifestations. Their influence on cultures of Japan, Korea, and Vietnam. Analysis of and comparison between contemporary Chinese and Japanese societies.
- 5-291, 5-292, 5-293 (121, 122, 123). **ETHNOLOGY OF OCEANIA.** (3,3,3 cr; prereq 1-002 or 5-101) Kiste, Ogan
Survey of South Pacific culture. Emphasis on comparative ethnology of Polynesia (5-291), Micronesia (5-292), and Melanesia (5-293). Impact of western culture on island societies; significance of Oceanic ethnology to anthropological theory.

Group II—Cultural Anthropology

- 3-341 (68). **RELIGION AND CULTURE.** (3 cr; prereq 1-002 or 5-101; no cr for majors)
Kiste
Introduction to comparative study of religion in its cultural context.
- 5-301 (169). **COMPREHENSIVE SURVEY.** (3 cr; prereq sr, #) Staff
Integrated review of major anthropological concepts, methodologies and theories.
- 5-312 (164). **SOCIAL ANTHROPOLOGY: KINSHIP AND MARRIAGE.** (3 cr; prereq 1-002 or 5-101 or #) Gudeman, Ogan
Examination of 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.
- 5-315 (157). **COMPARATIVE PEASANT SOCIETY.** (3 cr; prereq 1-002 or 1-201 or 5-101 or #) Currier
Geographical and historical distribution of peasant societies. Basic economic, political and legal institutions of peasant society. Comparative analysis of several representative peasant societies.
- 5-321 (163). **ECONOMIC ANTHROPOLOGY.** (3 cr; prereq 1-002 or 5-101; waived for majors in economics and business administration) Gerlach, Gudeman
Analysis and comparison of varied systems of production and distribution; special reference to nonindustrial societies. Relationship between economic and social, political, religious, psychological and environmental factors.
- 5-322 (162). **COMPARATIVE TECHNOLOGY.** (3 cr; prereq 1-002 or 5-101; offered when feasible) Adams
Ideas and techniques involved in manufacture of foodgetting equipment, means of transportation and communication, and other devices for satisfaction of human needs examined in historical and ecological context.
- 5-331 (160). **ANTHROPOLOGY OF LAW.** (3 cr; prereq 1-002 or 5-101; waived for majors in other social sciences) Hoebel
Theory and method of comparative legal systems. Law: cultural background and relation to society. Functions and evolution of law as revealed in analysis of cultures ranging from primitive to complex.
- 5-341 (161). **ANTHROPOLOGY OF RELIGION.** (3 cr, §3-341; prereq 1-002 or 5-101 and 6

- Upper Division anthropology cr or #) Currier, Kiste, Spencer
 Varieties and range of religious beliefs and practices. Relation of religion to other aspects of culture.
- 5-351 (166). **PRIMITIVE ART.** (3 cr; prereq 1-002 or 5-101 or #; waived for art majors)
 Technique, style, and symbolism. Art and artist in relation to primitive culture and society.
- 5-352 (167). **FOLKLORE.** (3 cr; prereq jr, sr, grad, 1-002 or 5-101 or #) Spencer
 A comparative treatment of folktale, myth, and oral literature in historical and functional contexts.
- 5-361f,w,s (165). **CULTURE AND PERSONALITY.** (3 cr; prereq 1-002 or 5-101 or #; waived for majors in public health, nursing, psychology, sociology and social work) Currier, Rowe, Sarles
 Role of culture in formation of personality. Problems of individual adjustments to demands of culture. Psychological approach to culture.
- 5-371 (168). **ANTHROPOLOGY AND EDUCATION.** (3 cr, §Hed 5-170; prereq 1-001 or 1-002 or 5-101 or 5-111) Holt
 Cross-cultural perspectives in examining educational patterns; implicit and explicit cultural assumptions underlying them. Methods and approaches to cross-cultural studies in education.
- 5-375 (156). **INNOVATION IN HIGHER EDUCATION.** (3 cr; prereq 5-371 or 5-381 or #)
 Miller
 Social organization and cultural values of educational institutions. The role of decision-making in the process of innovation. Analysis of specific changes in higher education.
- 5-381 (150). **CULTURAL CHANGE AND DEVELOPMENT.** (3 cr; prereq 1-002 or 5-101)
 Kiste, Miller, Ogan
 Processes of cultural change; invention, diffusion, and acculturation. Effects of colonialism, urbanization, and modernization. Analysis of developing societies.
- 5-382 (151). **APPLIED ANTHROPOLOGY.** (3 cr; prereq sr or 5-381, or #; offered when feasible)
 Gerlach, Kiste
 Application of anthropology to current problems of government, industry, education, and social welfare planning. Role of anthropology in such administrative activities as technical aid, public health.
- 5-383 (155). **ANTHROPOLOGY OF SOCIAL MOVEMENTS.** (3 cr; prereq 1-002 or 5-101 or #)
 Gerlach
 Cross-cultural comparative study of nature, process and function of social, political and religious movements of change. Examination of different theoretical approaches including Christianity, Islam, Asia, Africa, U.S.A.
- 5-385 (152). **URBAN ANTHROPOLOGY.** (3 cr; prereq 1-002 or 5-101 or #) Rowe
 Structure and process in non-western urban centers; emphasis on the role of rural migrants, relationship of urbanism to political and economic development, role of voluntary associations, adjustment of kinship groups to urban life.
- 5-391 (154). **ETHNOLOGICAL FIELD TECHNIQUES.** (3 cr; prereq sr or grad or #) Miller
 Introduction to techniques of field observation, interviewing, and recording; training in field methods, presentation of data, and interpretation of results provided by laboratory exercises with informants.
- 5-395 (130). **METHOD AND THEORY OF AMERICAN ARCHAEOLOGY.** (3 cr) Adams, Johnson, Puleston
 Examination of field methods, systems of data recording, analytical methods, and their conceptual bases. Abstract theory is integrated with specific case material. Some laboratory exercises in application of artifact analysis.
- Group III—Linguistic Anthropology**
- 3-421, 3-422 (73, 74). **HUMAN ETHOLOGY.** (3,3 cr; prereq 1-001 or 5-111 or #; 3-421 for 3-422) Sarles, Peterson
 Relevance of animal ethology, human biology and anthropology in the understanding of modern human behavior. 3-421 will deal primarily with non-human aspects; 3-422 with human aspects.
- 5-411/5-412† (180-181†). **METHOD AND THEORY IN ANTHROPOLOGICAL LINGUISTICS.**
 (3/3 cr; prereq 1-002 or 5-101 or #) Sarles, Spencer
 5-411: Linguistic theory and practice as tool in anthropological field work; analysis of phonological, morphological, and syntactic problems in world languages. 5-412: New theoretical directions in anthropological linguistics; theories of meaning and context; intelligibility; verbal behavior in relation to other aspects of behavior in cross-cultural perspective.

Course Offerings and Major Sequences

- 5-413 (182). **FIELD METHODS IN ANTHROPOLOGICAL LINGUISTICS.** (3 cr; prereq 5-412) Spencer
Problems in phonologic, morphophonologic, morphologic, and syntactic structures of one or two languages outside the Indo-European speech family.
- 5-421 (185). **LANGUAGE AND CULTURE.** (3 cr; prereq 1-002 or 5-101 or §) Sarles, Spencer
Relation of language to behavior; languages as systems of thought, logic, and orientation and their impacts on cultures; analysis of selected linguistic and cultural systems; glottochronology.
- 5-431f/5-432w†/5-433 (186-187-188). **KINESICS.** (3,3†,3 cr; prereq § for 5-431...5-431, § for 5-432...§, 5-432 for 5-433) Sarles
Human communication in micro and macro perspective; non-verbal aspects of interaction within and across cultures. Use of video and cinematic methods of observation; discussion of kinesiology, animal communication, the body as an information transmitting/handling device.

Group IV—Archaeology

- 3-511 (90). **ARCHAEOLOGY OF NORTH AMERICA.** (3 cr; prereq 1-001 or 5-111) Adams, Johnson
Survey of prehistoric archaeology of North America north of Mexico. Emphasis on analysis of techniques, methods, and goals of prehistoric archaeology.
- 3-512 (90A). **NORTH AMERICAN ARCHAEOLOGY LABORATORY.** (1 cr; prereq ¶3-511, though 3-512 registration is optional) Johnson
Laboratory analysis of archaeological data discussed in Anth 3-511.
- 5-521 (134). **ARCHAEOLOGY OF MIDDLE AMERICA.** (3 cr) Adams, Puleston
Developmental stage survey of major features of prehistoric cultures of Mexico and Central America.
- 5-522 (135). **ARCHAEOLOGY OF SOUTH AMERICA.** (3 cr) Adams
Developmental stage survey of major features of prehistoric cultures of South America. All major ecological zones will be covered.
- 5-531 (136). **PALEOLITHIC AND MESOLITHIC ARCHAEOLOGY OF OLD WORLD.** (3 cr) Johnson
Survey of archaeological record of human cultural origins and developments in Pleistocene and early recent periods in Africa, Europe, and Asia.
- 5-532 (137). **OLD WORLD PREHISTORY: EUROPE, NEAR EAST, AND AFRICA.** (3 cr) Adams
Recent period prehistory stressing the origins, development, and dispersion of systems of food production; the origins of urbanism.
- 5-533 (138). **OLD WORLD PREHISTORY: EAST AND SOUTH ASIA.** (3 cr) Johnson
Origins and developments of major Asian cultural traditions.
- 5-591su (140). **FIELD RESEARCH IN ARCHAEOLOGY.** (6-12 cr; may be taken for cr only once) Johnson
Archaeological field excavation, survey, and research in prehistoric sites in Minnesota. Intensive training in excavation techniques, recordation, analysis, and interpretation of archaeological materials.

Group V—Biological Anthropology

- 5-611 (170). **PRIMATE AND HUMAN EVOLUTION.** (3 cr; prereq 1-001 or 5-111) Murrill
Origins and relationships of extinct forms of nonhuman primates and man.
- 5-621 (173). **HUMAN BIOLOGY.** (3 cr; prereq 1-001 or 5-111) Murrill
Evolutionary processes in differential development of races. Physical characteristics, distribution, and relationships of living races. Human genetics and blood types. Influence of various environments on man.
- 5-631 (175). **HUMAN PHYSICAL GROWTH AND DEVELOPMENT.** (3 cr; prereq 1-001 or 5-111, waived for majors in child development) Murrill
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.
- 5-632 (176). **GROWTH AND DEVELOPMENT IN ADOLESCENTS.** (3 cr; prereq 5-631 or §) Murrill
Physical growth at adolescence, sex differences in physique, concept of physiological changes, endocrinology of adolescence, changes in mentality and behavior at adolescence.

5-641 (172). BASIC PRINCIPLES OF BLOOD GENETICS. (3 cr; prereq 1-001 or 5-111 or #)
Yunis

(Same as LMed 5-172) Blood groups and human genetics, ABO, MNS, P, Rh, Lutheran, Kell, Lewis, Duffy, Kidd, Diego, haptoglobines, transferrines, gammaglobulines, Gc system, hemoglobins; blood groups and disease, blood groups and linkage.

5-651 (171). HUMAN RACES. (3 cr; prereq 5-611 or #)

Evolution of races, present living races, mechanism for differentiating major groups of man, physiological differences between races.

5-691/5-692/5-693 (177-178-179). METHODS IN PHYSICAL ANTHROPOLOGY AND HUMAN BIOLOGY. (4,4,4 cr; prereq 1-001 or 5-111; 2 lect, 4 lab hrs per wk)
Murrill

Comparative osteology of man and anthropoid apes. Variations related to sex, age, and race. Observations and measurements on the skeleton. Anthropometry—measurement of the living. Age, sex, and racial differences.

ARABIC

See Middle Eastern Languages

ARCHITECTURE and LANDSCAPE ARCHITECTURE

(Institute of Technology)

Architecture (Arch)

● Major Sequence for B.A. Degree—Arch 3-051/3-052/3-053, 3-081/3-082/3-083, 3-091/3-092/3-093

Required Background Courses:

A. Phys 1-010/1-020/1-030 and 1-015/1-025/1-035

B. Math 1-441, 1-442/1-443

C. ArtS 1-107/1-108/1-109

D. Arch 1-001/1-002/1-003

E. Arch 1-021

Curriculum Alternatives—The College of Liberal Arts program (4 years) will lead to a Bachelor of Arts degree and is primarily intended as a pre-professional training for admission to the Institute of Technology where two years of further study will lead to the professional degree: Master of Architecture. Students who receive the M. Arch. degree will be prepared for careers in architecture, city design, and other options which are related to the physical design of our environment.

Students who do not choose to continue for the M. Arch. degree will have achieved a certain degree of specialization in environmental design which can be applied for cultural and vocational purposes.

Students who intend to continue toward the M. Arch. degree should include in addition to courses listed above: AEM 3-092/3-093 and ArtS 3-107/3-108/3-109. Also desirable are CE 3-600/3-601/3-602 and Arch 3-071/3-072/3-073, although neither sequence carries credit toward the Bachelor of Arts degree.

Note—see *Institute of Technology Bulletin (1971-73)* for specific course sequences leading to the Master of Architecture degree, or, see an architecture counselor for mimeographed copy of new program.

Admission Procedures—Application for admission to the School of Architecture must be formally made on form AR110 obtained from the School office or from the Office of Admissions and Records. Architectural design courses are sequential and start in the fall quarter. Applications must be submitted not later than June 25 preceding the academic year for which admission is sought to an architectural design sequence.

Course Offerings and Major Sequences

Admission will be based on consideration of a) the student's scholastic record in high school and on college record prior to application, b) his maturity and experience, c) his professional aptitude and objectives, and, d) the resources and facilities of the School. Prospective students are urged to consult advisers in the School of Architecture Office (110 Arch). A minimum GPA of 2.25 is required.

Honors Opportunities and Graduation with Honors—Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the departmental office.

LOWER DIVISION COURSES

- 1-001f (1). ENVIRONMENTAL DESIGN: MAN AND ENVIRONMENT.** (4 cr; 3 lect and 3 lab hrs per wk)
An exploration of the interaction of man and his environment focusing on problems created by this interrelationship using the disciplines of the natural and social sciences as resource background for lecture and discussion sessions plus basic design lectures, design projects, and graphic exercises.
- 1-002w (2). ENVIRONMENTAL DESIGN: PROBLEM SOLVING TECHNIQUES.** (4 cr; prereq Arch 1-001; 3 lect and 3 lab hrs per wk)
An assessment of intuitive and rational systems of problem solving related to environmental problems and human needs. Exploration of systems analysis and design techniques plus design lectures, design projects and graphic exercises.
- 1-003s (3). ENVIRONMENTAL DESIGN: ASSESSMENT OF ENVIRONMENTAL QUALITY.** (4 cr; prereq Arch 1-002; 3 lect and 3 lab hrs per wk)
Lectures and discussions of the basic constituents of quality environments. Exploration of techniques of evaluating existing environments in terms of quality of human existence created therein, plus basic design lectures, design projects, and graphics exercises.
- 1-021f,w (21). ARCHITECTURAL THEORY AND HISTORY.** (4 cr; 4 lect hrs per wk)
Introduction to architecture, philosophy and principles of architecture as an art, survey of architectural history with emphasis upon development of contemporary architecture from its roots in 19th century until present time.

UPPER DIVISION COURSES

- 3-051f (51). ANCIENT ARCHITECTURE.** (3 cr; 3 lect hrs per wk)
History of architecture in ancient Mesopotamia, Egypt, Crete, Greece, and Rome through Augustan Age.
- 3-052w (52). LATE ROMAN AND MEDIEVAL ARCHITECTURE.** (3 cr; prereq 1-021; 3 lect hrs per wk)
History of architecture from time of Augustus through Romanesque period.
- 3-053s (53). GOTHIC AND EARLY RENAISSANCE ARCHITECTURE.** (3 cr; prereq 1-021; 3 lect hrs per wk)
History of architecture from late 12th century through the 14th century.
- 3-054f (54). RENAISSANCE AND BAROQUE ARCHITECTURE.** (3 cr; prereq 1-021; 3 lect hrs per wk)
History of architecture from time of Brunelleschi until French Revolution.
- 3-055w (55). AMERICAN ARCHITECTURE AND 19TH CENTURY.** (3 cr; prereq 1-021; 3 lect hrs per wk)
History of pre-Columbian and colonial architecture in America and of European architecture through early 19th century. Research paper.
- 3-056s (56). MODERN ARCHITECTURE.** (3 cr; prereq 1-021; 3 lect hrs per wk)
History of architecture in America and Europe from late 19th century until present time.
- 3-081/3-082/3-083† (81-82-83†). ARCHITECTURAL DESIGN.** (6,6,6† cr; prereq 2nd yr for IT students, jr for CLA students and Δ; 18 lab hrs per wk; entrance fall qtr only)
Basic exercises in composition of line, form, proportion, color, and texture. Elements of architectural design. Architectural drawing. Model making.
- 3-091/3-092/3-093† (91-92-93†). ARCHITECTURAL DESIGN.** (6,6,6† cr; prereq 3-083; 18 lab hrs per wk)

Architectural problems; emphasis on development of structures as integral part of design; site planning.

- 5-101/5-102/5-103 (101-102-103). **TUTORIAL WORK IN HISTORY OF ARCHITECTURE.** (4-4-4 cr; prereq 3-056 or #; 1 conf and 5 res hrs per wk)
Reading and written reports on special historical problems.
- 5-104 (104). **SEMINAR: EUROPEAN ARCHITECTURE.** (3 cr; prereq 3-056 or #; 3 seminar hrs per wk)
Contemporary architecture from beginning of modern movement until present time.
- 5-105 (105). **SEMINAR: SCANDINAVIAN ARCHITECTURE.** (3 cr; prereq 3-050 or #; 3 seminar hrs per wk)
Survey of Scandinavian architectural history; emphasis upon development of modern architecture in Denmark, Finland, Norway, and Sweden.
- 5-106 (106). **SEMINAR: AMERICAN ARCHITECTURE.** (3 cr; prereq 3-056 or #; 3 seminar hrs per wk)
Contemporary architecture in United States from period of Henry Hobson Richardson until present time. Field trip.
- 5-130 (130). **SEMINAR: THE DEVELOPMENT OF URBAN FORM.** (3 cr; hrs ar) Iskander
The physical development of urban places—from the early Middle East urban revolution to the Industrial Revolution—as a manifestation of the changes in underlying social, political and economic forces as well as to planning theories—if any—to which they gave rise.
- 5-131f (131). **PLANNING.** (3 cr; 3 lect hrs per wk)
History and theory of planning.
- 5-132w (132). **PLANNING.** (3 cr; 3 lect hrs per wk)
Conceptualization of role of individual disciplines in planning process architecture, economics, engineering, geography, public administration, public health, and sociology.
- 5-133s (133). **PLANNING.** (3 cr)
Community facilities and housing.
- 5-134f/5-135w/5-136s (134-135-136). **PLANNING.** (3 cr; prereq 5-133 or #)
Tutorial work in community facilities and housing.

Landscape Architecture (LA)

● Major Sequence in Arts College—

Required Background Courses:

Phys 1-010, 1-015
Math 1-441
Biol 1-001/1-002†
Geog 1-401
Geo 1-001
ArtH 1-001
ArtS 1-107/1-108/1-109
Arch 1-021
LA 1-001, 1-002, 1-003

Requirements:

LA 3-081/3-082/3-083†
LA 3-091/3-092/3-093
LA 3-062/3-063
LA 5-115

Goals and Concerns of the Profession—The landscape architect is specifically concerned with the quality of experience in the exterior environment which results for man through modification of lands for specific human uses. In detail, he is concerned with design of the relationships between a specific site with its individual qualities of terrain, soil, climate, vegetation, orientation, and views, and the program for development with its proposed facilities, use areas, and circulation needs. Thus he attempts to secure the most desirable relationships between open

Course Offerings and Major Sequences

spaces and buildings, walks and roads, planting and land forms, in order to best resolve human requirements of utility and beauty in the use of land.

Persons interested in entering the field should have a strong interest in nature and greatly enjoy observing the patterns and qualities of the landscape. A basic desire to put concepts and thoughts into graphic form is a further strong indication of interest in the profession.

Curriculum Alternatives—The College of Liberal Arts program (4 years) will lead to a Bachelor of Arts with a major in Landscape Architecture. Studies may be coordinated to allow extension into the advanced professional degree training (additional 2 years) offered by the Institute of Technology. Students who intend to continue toward the professional degree should include in addition to the courses listed above ArtS 3-107/3-108/3-109 and Hort 1-021, 1-022. Also desirable are MeAg 1-400 and LA 3-071/3-072/3-073 although these courses are creditable only toward the advanced degree.

Admission Procedures—Upon completion of the prerequisite requirements, application shall be made to officially enter the School of Architecture and Landscape Architecture. This should be done by completing form AR 110 available at the school or from the Office of Admissions and Records. These should be submitted not later than June 15 of the year during which the student wishes to begin design course work within the school. Admission to beginning design is normally permitted only in the fall quarter.

Approval of admission will be based on consideration of the following: (1) student's scholastic standing in high school and on previous college work; (2) his maturity and experience; (3) availability of work space and instructional resources facilities.

Students who wish to apply for advanced standing within the program are requested to bring a brochure of their work and grade transcript to discussions with the advisers in the School of Architecture and Landscape Architecture.

LOWER DIVISION COURSES

- 1-001f (1). ENVIRONMENTAL DESIGN: MAN AND ENVIRONMENT.** (4 cr; 3 lect and 3 lab hrs per wk)
An exploration of the interaction of man and his environment focusing on problems created by this interrelationship using the disciplines of the natural and social sciences as resource background for lecture and discussion sessions plus basic design lectures, design projects, and graphic exercises.
- 1-002w (2). ENVIRONMENTAL DESIGN: PROBLEM SOLVING TECHNIQUES.** (4 cr; prereq Arch 1-001; 3 lect and 3 lab hrs per wk)
An assessment of intuitive and rational systems of problem solving related to environmental problems and human needs. Exploration of systems analysis and design techniques plus design lectures, design projects and graphic exercises.
- 1-003s (3). ENVIRONMENTAL DESIGN: ASSESSMENT OF ENVIRONMENTAL QUALITY.** (4 cr; prereq Arch 1-002; 3 lect and 3 lab hrs per wk)
Lectures and discussions of the basic constituents of quality environments. Exploration of techniques of evaluating existing environments in terms of quality of human existence created therein, plus basic design lectures, design projects, and graphic exercises.
- 1-021 (21). INTRODUCTION TO LANDSCAPE ARCHITECTURE.** (3 cr; 3 lect hrs per wk)
Analysis of design potential of landscape materials; exercises in critical assessment of architectural history with emphasis upon development of contemporary architecture from its roots in 19th century until present time.

UPPER DIVISION COURSES

- 3-081/3-082/3-083 (81-82-83). LANDSCAPE ARCHITECTURAL DESIGN.** (6-6-6 cr; prereq LA student; 1 lect and 15 lab hrs per wk)
Lectures and projects which: begin to expand awareness of the design potential of environment; develop processes and graphic techniques for problem solving; begin a search toward developing methods of presenting ideas verbally and visually.

3-091/3-092/3-093 (91-92-93). LANDSCAPE ARCHITECTURAL DESIGN. (6-6-6 cr; prereq Arch 3-083 or #; 2 lect and 12 lab hrs per wk; Hort 3-093 may be substituted for LA 3-093)

Lectures and projects: exploration of design potential of natural land materials; exploration of landscape survey and analysis techniques; assessment of elements of environment as they condition design potential. Exploration of methodologies for solving design problems. Exploration of methods of expressing landscape form both graphically and through models; design of small-scale site systems with simple variables.

3-096 (96). SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURAL HISTORY. (1-6 cr; prereq #)

3-097 (97). SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURAL THEORY. (1-6 cr; prereq #)

3-098 (98). SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURAL DESIGN. (1-6 cr; prereq #)

3-099 (99). SPECIAL PROBLEMS IN LANDSCAPE ARCHITECTURAL TECHNOLOGY. (1-6 cr, prereq #)

5-101 (101). COMMUNICATING LANDSCAPE QUALITY. (3 cr; 1 lect and 6 lab hrs per wk; prereq 3-093 or #)

Lectures and exercises in drawing techniques focused on developing graphic skills for designers working predominantly with exterior environments.

5-111/5-112/5-113 (111-112-113). LANDSCAPE ARCHITECTURAL DESIGN. (6-6-6 cr; prereq 3-093 or #; 2 lect and 12 lab hrs per wk; Hort 5-012 may be substituted for LA 5-112)

Lectures and projects continuing areas of concern developed in initial design course series; assessment of existing man-ordered siting systems; design of large-scale site systems with complex variables.

5-115/5-116 (115-116). LANDSCAPE FORM AND STRUCTURE. (3-3 cr; prereq 3-091 or #; 3 lect hrs per wk)

Studies in landscaping perception, lectures, discussions, and exercises in application of abstract design principles to assessment of land developments; review of psychological and social implications of land developments; exploration of design potential of landscape materials; investigation of contemporary problems in land development including all scales and types of land uses.

5-124/5-125 (124-125). LANDSCAPE ARCHITECTURAL SEMINAR. (2-2 cr; prereq terminal yr)

Analysis of design principles and design goals in modern profession. Assessment of role of landscape architect in modern society. Review of current site development projects. Investigation in depth into specific areas of land developments.

5-131/5-132/5-133 (131-132-133). SELECTED PROBLEMS IN LANDSCAPE ARCHITECTURE. (Cr ar; prereq #) Baldwin, Martin

5-162/5-163 (62-63). HISTORY AND LITERATURE OF LANDSCAPE ARCHITECTURE. (3-3 cr; 3 lect hrs per wk)

Search for design principles as expressed in landscapes created by man from ancient times to contemporary period. Specific focus on analysis of visual form of environments as outgrowths of geographical, cultural, and technological determinants.

ART HISTORY (ArtH)

The objective of the Department of Art History is to contribute its share to the student's undergraduate education. This is made possible through the examination of the world's architecture, sculpture, painting, and other related arts. Their evolution, their technical and aesthetic forms, their interrelation with contemporaneous sociocultural and political forces are studied. Original works are used whenever possible.

For those students interested in acquiring a liberal education and then proceeding to advanced work in history, the Department of Art History offers professionally oriented courses at the Upper Division level and graduate courses leading to the degrees of M.A. and Ph.D. in history and criticism and the M.A. in museology.

- Major Sequence in Arts College—The student intending to major in art history

Course Offerings and Major Sequences

should consult one of the departmental advisers as soon after entrance to college as is practicable.

Required background courses:

- A. 8 cr from the following: 1-001, 1-008, 1-009, 1-011, 1-012, 1-013, 1-014, 3-001
B. One of the following: ArtS 1-101, 1-301, 1-701, 1-901

Requirements: total—27 cr

- A. 3 cr from each of following 5 groups (total 15 cr):
East Asia and South Asia 5-765, 5-766, 5-767; 5-775, 5-776, 5-777
Ancient 3-152, 5-102, 5-103, 5-104, 5-105
Medieval 5-203, 5-204, 5-205, 5-213, 5-306, 5-324
Renaissance-Baroque 5-307, 5-313, 5-314, 5-346, 5-347, 5-357, 5-358
19th-20th Century 5-431, 5-432, 5-433, 5-434, 5-435, 5-446, 5-447, 5-448, 5-545
B. 12 cr from courses numbered above 5-000.

LOWER DIVISION COURSES

- 1-001 (1). PRINCIPLES OF ART. (4 cr, §3-001; prereq fr and soph only)
Basic problems of art. Examples from painting, sculpture, and architecture, from the basis for an investigation of the nature of art, problems in design, and techniques.
- 1-008 (9). HISTORY OF SCULPTURE, PAINTING, AND ARCHITECTURE, ANCIENT ART. (4 cr, §2, 10, 56)
Expression of Western civilization in architecture, sculpture, and painting; from pre-history, including Egypt, Mesopotamia, Crete, Persia, Greece, and Rome.
- 1-009 (10). HISTORY OF SCULPTURE, PAINTING, AND ARCHITECTURE, MEDIEVAL ART. (4 cr, §3, 10, 57)
Medieval architecture, sculpture, and painting, including early Christian, Byzantine, Romanesque, and Gothic periods.
- 1-011 (11). HISTORY OF SCULPTURE, PAINTING AND ARCHITECTURE, RENAISSANCE AND BAROQUE ART. (4 cr, §4, 11, 58)
From 15th to 18th century, including Renaissance, 16th century, Baroque and Rococo periods.
- 1-012 (12). HISTORY OF SCULPTURE, PAINTING, AND ARCHITECTURE, NINETEENTH AND TWENTIETH CENTURIES. (4 cr, §5, 12, 60)
Modern architecture, sculpture, and painting, 19th and 20th centuries.
- 1-013 (13). INTRODUCTION TO FAR EASTERN ART. (4 cr, §13, §47)
Selected major themes within broad context of Indian and Far Eastern Art. Introduction to arts of Eastern world but not an inclusive historical survey.
- 1-014 (14). INTRODUCTION TO THE ART OF INDIA. (4 cr)
A survey of Indian sculpture and architecture from the pre-historic Indus Valley civilization through the major historical periods. Emphasis will be on the Hindu and Buddhist art from 300 B.C. to 1200 A.D.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-001 (50). INTRODUCTION TO VISUAL ARTS. (3 cr, §1-001)
Similar to ArtH 1-001 in organization and basic content. Expanded program of reading and more extensive contact with works of art.
- 3-053 (53). LANDSCAPE PAINTING. (3 cr) Waldfogel
Changing attitudes towards art and nature as exemplified in landscape images from cave painting to the present.
- 3-059 (59). SUMMER TRAVEL COURSE IN EUROPEAN ART. (6 cr; prereq #; about June 28 to August 12, approx 6 wks in Europe; may be taken as 5-959) Torbert
Conducted by Department of Art History under auspices of Summer Session. Main phases of ancient, medieval, Renaissance, baroque, and modern art. Guided visits and discussions at important cultural centers, museums, and cathedrals.

- 3-152 (52). **CLASSICAL ART.** (3 cr) McNally
Basic concepts of "classical" style as it arose in Greece and was modified by Rome with consideration of their relevance to later Western art.
- 3-654 (54). **SCANDINAVIAN ART FROM THE RENAISSANCE TO THE PRESENT DAY.** (3 cr) Nelson
Painting, sculpture, architecture, and the decorative arts of the upper classes in Scandinavia with special attention given to the 17th and 18th centuries.
- 3-655 (55). **THE FOLK ARTS OF SCANDINAVIA.** (3 cr) Nelson
Wood carving, decorative painting, weaving, stitchery, and domestic architecture of rural Scandinavia with emphasis on its origins in pagan and Medieval art.
- 3-909 (90). **SURVEY OF ISLAMIC ART.** (3 cr) Asher
Selected monuments of sculpture, painting, and architecture of aesthetic and historic importance to the culture of Islam.
- 3-921/3-922/3-923 (86-87-88). **ART OF THE FILM.** (3 cr) Milgrom
Critical study and analysis of motion picture as an art form. Emphasis on finished product, demonstrated in select program of films of exceptional merit or specific interest. Lectures, demonstrations, and discussions. Analysis of films of various categories, such as narrative, poetic, documentary, experimental.
- 3-970 (70). **DIRECTED STUDIES.** (1-5 cr)
Course devised for the independent study program, and designed to permit student to pursue interests in special readings and/or study.
- 5-102 (101A). **ARCHAIC AND CLASSICAL GREEK ART AND ARCHAEOLOGY.** (3 cr, §Clas 5-102; prereq jr or #) Coulson
Architecture, sculpture, pottery, and minor arts from the end of the Bronze Age to the end of the Fifth Century B.C. Concentration on specific sites such as Athens, Delphi, Olympia. Methods of gathering and interpreting archaeological data.
- 5-103 (102A). **HELLENISTIC ART AND ARCHAEOLOGY.** (3 cr, §Clas 5-103; prereq jr or #) Coulson
Greek architecture, sculpture, ceramics, painting, and minor arts from the beginning of the Fourth Century B.C. to the end of the Hellenistic period. Attention paid to city planning, public buildings, and the topography of such sites as Athens, Olynthos, Corinth, Priene, Pergamon.
- 5-104 (119). **EARLY ROMAN ART AND ARCHAEOLOGY.** (3 cr, §Clas 5-104; prereq ArtH 10 or 1-009) McNally
Architecture, sculpture, painting, and minor arts of the Roman Republic and early Empire. Methods of gathering and interpreting archaeological data; concentration on selected sites.
- 5-105 (120). **LATER ROMAN ART AND ARCHAEOLOGY.** (3 cr, §Clas 5-105; prereq ArtH 10 or 1-009) McNally
Architecture, sculpture, painting, and minor arts of the late Roman Empire, third to fifth centuries A.D.
- 5-106 (169A). **GREEK PAINTING.** (3 cr, §Clas 5-106; prereq 9 cr ArtH; 5-102 or 5-103 or Clas 5-102/5-103; or #) McNally
Place of painting in Greek Art; emphasis on vase painting.
- 5-170 (170). **PROBLEMS IN THE AGE OF DIOCLETIAN.** (3 cr, §Clas 170, †ArtH 270A; prereq #) McNally
- 5-203 (103). **MEDIEVAL ART.** (3 cr; prereq 3 cr ArtH or #)
Early Christian and Byzantine architecture, sculpture, painting, and selected minor arts; including Russia and other Orthodox Christian countries to fall of Constantinople in 1453.
- 5-204 (104). **MEDIEVAL ART.** (3 cr; prereq 3 cr ArtH or #)
Survey of architecture, sculpture, painting, and selected minor arts of western Europe from Dark Ages to Romanesque period.
- 5-205 (105). **MEDIEVAL ART.** (3 cr; prereq 3 cr ArtH or #)
Gothic architecture, sculpture, and painting from 12th to 14th centuries.
- 5-213 (113A). **ART OF NORTHERN EUROPE, INTERNATIONAL STYLE.** (3 cr; prereq 3 cr Medieval ArtH or #) Stones
Sculpture, painting, manuscripts, and selected minor arts; formation of the International style; royal patronage in Paris, London, Burgundy, the Netherlands, and Prague.
- 5-253 (153). **ROMANESQUE SCULPTURE IN ITALY.** (3 cr; prereq 9 cr in ArtH, ArtH 5-204/5-205 or #) Sheppard

Course Offerings and Major Sequences

Detailed lectures concerning pertinent material.

- 5-254 (154). **ROMANESQUE SCULPTURE IN FRANCE.** (3 cr; prereq 9 cr Arth, Arth 5-204/5-205 or #) Sheppard
Detailed lectures concerning pertinent material.
- 5-306 (106). **ITALIAN ART OF THE 14TH CENTURY.** (3 cr; prereq 3 cr Arth) Canedy
Proto-Renaissance sculpture and painting; painting after the Black Death; International style in painting and sculpture.
- 5-307 (107). **FIFTEENTH-CENTURY ART IN ITALY.** (3 cr, §Arth 108; prereq 3 cr Arth or #) Canedy
Survey of early Renaissance architecture, sculpture, and painting in central and northern Italy.
- 5-313 (113). **HIGH RENAISSANCE ART IN ITALY.** (3 cr; prereq 3 cr Arth or #) Canedy
Survey of Italian painting, sculpture and architecture in Florence, Rome, and northern Italy during the years 1492-1520.
- 5-314 (114). **LATER SIXTEENTH-CENTURY ITALIAN ART.** (3 cr, §Arth 115; prereq 3 cr Arth or #) Canedy
Survey of Italian and Italianate painting, sculpture and architecture in the period of Mannerism.
- 5-324 (114A). **ART OF NORTHERN EUROPE, LATE GOTHIC ARCHITECTURE.** (3 cr; prereq 3 cr Arth or #) Stones
Painting of Flanders and Low countries, Germany, France, Austria.
- 5-325 (115A). **ART OF NORTHERN EUROPE, SIXTEENTH CENTURY.** (3 cr; prereq 3 cr Arth or #) Stones
Flamboyant architecture and its antecedents from the Ste.-Chapelle of St. Louis and Westminster Abbey of Henry III.
- 5-326 (116A). **ART OF NORTHERN EUROPE: 16TH CENTURY.** (3 cr; prereq 3 cr Arth or #) Marrow
Final manifestations of Gothic and the emergence of new forms in architecture. Tudor England, Italian influence in France, and the conflict between Italianism and indigenous traditions in Germany.
- 5-330 (181). **PROBLEMS IN SIXTEENTH CENTURY PAINTING.** (3 cr; prereq 9 cr Arth; 5-307, 5-313 or 5-314 or #) Canedy
- 5-346 (116). **BAROQUE ART IN ITALY AND SPAIN.** (3 cr; prereq 3 cr Arth or #) Stoughton
Survey of Italian and Spanish painting, sculpture and architecture of the seventeenth century.
- 5-347 (117). **BAROQUE ART IN FRANCE, ENGLAND, AND THE LOWLANDS.** (3 cr, §Arth 118; prereq 3 cr Arth or #) Stoughton
Survey of French, English, Flemish and Dutch painting, sculpture and architecture of the seventeenth century.
- 5-537 (127). **EIGHTEENTH-CENTURY ART IN FRANCE.** (3 cr; prereq sr, grad or #)
Urban architecture; the town house. Provincial centers. Neoclassic architecture. Rococo and neoclassic sculpture. French painting: Watteau, Boucher, Fragonard, Chardin, David; lesser masters. Prints.
- 5-358 (128). **EIGHTEENTH-CENTURY ART IN ITALY, GERMANY, AUSTRIA.** (3 cr; prereq 3 cr Arth or #) Stoughton
Major examples of architecture, sculpture, painting, prints and the decorative arts from late Baroque to Neoclassical on both sides of the Alps.
- 5-429 (139). **DECORATIVE ARTS IN ENGLAND: 1700-1900.** (3 cr; prereq Upper Division or grad) Waldfogel
Major furniture styles in England from rococo to Art Nouveau. Some considerations given to porcelain, silver, and other decorative arts.
- 5-431 (131). **EUROPEAN PAINTING AND SCULPTURE OF THE NINETEENTH CENTURY.** (3 cr, §156; prereq 3 cr Arth or #) Waldfogel
Romanticism mainly in France during first half of the century with parallels in England, Germany and Spain.
- 5-432 (132). **EUROPEAN PAINTING AND SCULPTURE OF THE NINETEENTH CENTURY.** (3 cr, §Arth 157; prereq 3 cr Arth or #) Waldfogel
Realism, Impressionism and Post-Impressionism as both French and European styles during the second half of the century.
- 5-433 (176). **TWENTIETH-CENTURY PAINTING.** (3 cr, §133; prereq sr, grad or #) Simon

- Art Nouveau, Fauvism, Cubism, Futurism, Orphism. Matisse, Picasso, Braque, Gris, Leger, Boccioni, Rousseau, de Chirico, Duchamp.
- 5-434 (177). **TWENTIETH-CENTURY PAINTING.** (3 cr, §133; prereq sr, grad or #) Simon
Jugendstil. Austrian expressionism. Bridge group. Blue Rider group, new objectivity, de Stijl, and Dada. Kokoschka, Schiele, Kirchner, Schmidt-Rottluff, Nolde, Kandinsky, Marc, Klee Beckmann, Mondrian, van Doesberg, Grosz.
- 5-435 (178). **TWENTIETH-CENTURY PAINTING.** (3 cr, §134; prereq sr, grad or #) Simon
Surrealism, abstract expressionism, hard edge, new realism, and pop art; Ernst, Dali, Miro, Hofmann, de Kooning, Pollock, de Stael, Dubuffet, Johns, Rauschenberg.
- 5-438 (168). **MODERN SCULPTURE.** (3 cr; prereq sr, grad or #) Simon
Academic tradition in late 19th century. Rodin, Degas, Rosso, Maillol, Brancusi. Expressionism, Cubism and Futurism.
- 5-439 (169). **MODERN SCULPTURE.** (3 cr; prereq sr, grad or #) Simon
From 1914 to the present: Constructivism, Abstract Art, Dada, Surrealism, School of Paris, Abstract Expressionism, Neo-Dada, Pop and Minimal sculpture.
- 5-446 (146). **MODERN AMERICAN AND EUROPEAN ARCHITECTURE.** (3 cr; prereq sr, grad or #) Torbert, Tselos
European traditions and influences that shaped American building from early settlement. Jefferson and his influence. Early phases of revivalism.
- 5-447 (147). **MODERN AMERICAN AND EUROPEAN ARCHITECTURE.** (3 cr; prereq sr, grad or #) Torbert, Tselos
Revivalist and progressive currents in later 19th century; sources and founders of modern architecture. Chicago School and its chief exponents. Richardson, Jenney, Sullivan, the early Wright; their European counterparts. Modern materials and techniques; rise of skyscraper.
- 5-448 (148). **MODERN AMERICAN AND EUROPEAN ARCHITECTURE.** (3 cr; prereq sr, grad or #) Torbert, Tselos
Development of modern architecture on international scene. Wright, Berlage, Behrens, Gropius, Mies, Le Corbusier, and their influence. Modern uses of concrete; Wright, Perret, Nervi, Torroja, Candela, Tange, Saarinen.
- 5-455 (155). **ENGLISH PAINTING FROM 1750 TO 1850.** (3 cr; prereq 9 cr ArtH, ArtH 5-431 or 5-432 or #) Waldfogel
Landscape painting from topographers to Turner. Other artists and movements. Blake and Fuseli, Haydon, Ety, pre-Raphaelites and Victorian narrative painters.
- 5-458 (158). **NINETEENTH-CENTURY GERMAN PAINTING.** (3 cr; prereq 9 cr ArtH, ArtH 5-431 or 5-432 or #) Waldfogel
Romantic landscape, the Nazarenes, Biedermeier, Menzel and Leibl. Eclecticism of 1870's and 1880's, realism and impressionism at end of century.
- 5-461. **PROSEMINAR: CUBISM.** (3 cr; prereq 9 cr ArtH; ArtH 5-433, 5-434, 5-435 or #) Simon
- 5-462 (191). **PROSEMINAR: DADA.** (3 cr; prereq 9 cr ArtH; ArtH 5-433, 5-434, 5-435 or #) Simon
- 5-463 (192). **PROSEMINAR: ABSTRACT EXPRESSIONISM.** (3 cr; prereq 9 cr ArtH; ArtH 5-433, 5-434, 5-435 or #) Simon
- 5-464 (193). **PROSEMINAR: SURREALISM.** (3 cr; prereq 9 cr ArtH; ArtH 5-433, 5-434, 5-435 or #) Simon
- 5-535 (145). **ART IN THE UNITED STATES.** (3 cr, §ArtH 5-536; prereq 3 cr ArtH or #) Torbert
One-quarter survey of the major arts in the U.S.A. Selected key works and artists from period of early settlement to the early 20th century.
- 5-536, 5-537 (136A, 137A). **PROSEMINAR: ART IN THE UNITED STATES.** (3,3 cr; prereq #) Torbert
Proseminar dealing with selected problems in American painting and sculpture from their origins through early decades of the 20th century.
- 5-641 (141A). **SCANDINAVIAN ART OF THE NINETEENTH AND TWENTIETH CENTURIES.** (3 cr, §141; prereq 3 cr ArtH or #) Nelson
Painting and sculpture from the late 18th century to the present day; including Thorwaldsen, Munch, Josephson, and Asger Jorn.
- 5-642 (142A). **SCANDINAVIAN DESIGN IN THE TWENTIETH CENTURY.** (3 cr; prereq 3 cr ArtH or #) Nelson
Architecture, furniture, textiles, glass, ceramics, and metal work.

Course Offerings and Major Sequences

- 5-643 (143). **PRE-CHRISTIAN ART OF NORTHERN EUROPE.** (3 cr; prereq 3 cr ArtH or #) Nelson
Art north of the Alps—from the Ice Age through the Celtic period. Includes Bronze Age, Celtic, and migration metal work. Concentration on Scandinavia.
- 5-644 (144). **MEDIEVAL ART OF SCANDINAVIA.** (3 cr; prereq 3 cr ArtH or #) Nelson
Migration, Viking and Christian art in Scandinavia from the 5th through the 15th centuries.
- 5-709 (110). **ART OF INDIA.** (3 cr; prereq 3 cr ArtH) Poor
Development of architecture, painting, sculpture, and minor arts.
- 5-711 (111). **ART OF CHINA.** (3 cr; prereq 3 cr ArtH) Poor
Development of painting, sculpture, and minor arts from earliest times to present.
- 5-712 (112). **ART OF JAPAN.** (3 cr; prereq 3 cr ArtH) Poor
Development of painting, sculpture, and minor arts from earliest times to present.
- 5-765 (165). **EARLY CHINESE ART.** (3 cr; prereq 9 cr ArtH or #) Poor
Development of ancient ceramics and ritual bronzes, early Buddhist sculpture and early Chinese painting.
- 5-766 (166). **CHINESE PAINTING.** (3 cr; prereq 9 cr ArtH or #) Poor
Survey: major works from the 4th to 17th centuries. Primary emphasis: development of landscape tradition and literary genre of later Chinese painting.
- 5-767 (167). **JAPANESE PAINTING.** (3 cr; prereq 9 cr ArtH or #) Poor
Survey: Japanese pictorial arts from earliest to modern times. Focus on those works that best exemplify development of indigenous traditions.
- 5-769 (152). **CONNOISSEURSHIP IN ORIENTAL ART.** (3 cr; prereq #) Poor
Course dealing with the direct examination of Oriental art objects in local collections.
- 5-775. **EARLY INDIAN ART.** (3 cr; prereq 3 cr ArtH or #) Asher
After a brief survey of Indus Valley prehistoric art, the course will examine the sculpture and painting of the Maurya, Sunga, Satavahana, and Kushana periods.
- 5-776. **LATER INDIAN ART.** (3 cr; prereq 3 cr ArtH or #) Asher
First part of this course will examine the art and architecture of the Gupta Empire and contemporary art in Southern India. Second part of the course will focus on the art and architecture of various Indian dynasties and regional styles developed after fall of the Gupta Empire.
- 5-777. **PAINTING OF INDIA.** (3 cr; prereq 3 cr ArtH or #) Asher
Beginning with the earliest Indian painting at Ajanta and Ellora, development of painting through the Pala period will be traced. Course will then concentrate on the Western Indian and Moghul styles, and painting of various Rajasthani and Pahari schools.
- 5-799. **GUPTA ART.** (3 cr; prereq 9 cr ArtH or #) Asher
Art and architecture of Gupta Empire and contemporary art in Southern India will be the focus of this course. Beginners of Indian painting and temple architecture as well as sculpture will be studied.
- 5-895 (149). **METHODOLOGY I.** (3 cr prereq ArtH major or #)
Problems concerned with the use of bibliographies of various art historical periods. Work with all types of reference and source material. Proseminar.
- 5-911. **ASPECTS OF ARCHITECTURE, SCULPTURE AND PAINTING OF PRE-COLUMBIAN AMERICA.** (3 cr; prereq 3 cr ArtH, #) Torbert
Principally Mexico and Guatemala, with emphasis on Olmec and Maya cultures.
- 5-921/5-922/5-923 (121-122-123). **ART OF THE FILM.** (3-3-3 cr, §3-921/3-922/3-923; not applicable to grad major or minor in ArtH)
Aesthetics of the film. Discussions of editing, montage, sound, and use of the camera, etc.
- 5-924 (124). **ART OF THE FILM—INDIA.** (3 cr; prereq #; not applicable to grad major or minor in ArtH) Kale
History of Indian films; a mass art form and its relation to cultural factors.
- 5-928 (130). **MASTER DRAWINGS.** (3 cr; prereq 9 cr ArtH, or #)
Survey of great drawings from Gothic period to present; covers work of such artists as Pisanello, Leonardo da Vinci, Durer, Rembrandt, Watteau, Goya, Gericault, Van Gogh, Matisse, Picasso.
- 5-929 (129). **HISTORY OF GRAPHIC ARTS.** (3 cr; prereq 9 cr ArtH or #)
Renaissance and baroque master etchers and engravers; reproductive and portrait engraving of 17th and 18th centuries. Printmaking in 20th century.

- 5-959 (159). **SUMMER TRAVEL COURSE IN EUROPEAN ART.** (6 cr; prereq #) Torbert
 5-970 (196, 197, 198). **DIRECTED READING.** (3 cr per qtr; prereq sr, #)
 5-990. **DIRECTED RESEARCH.** (3 cr per qtr; prereq sr, #)

ART, STUDIO ARTS (ArtS)

The first aim of the Studio Art Department is to give the general university student the strongest possible introduction to the visual arts through practical experience in studio work.

Because of limitations on studio facilities, very few students who are not majoring in art will be able to register for Studio Arts courses.

The programs lead to the following degrees: B.A., B.F.A. (see p. 13), and M.F.A.

Major Sequence in Arts College--

Prerequisites:

- A. Three of following courses: ArtH 1-009, 1-011, 1-012 or ArtS 1-101 and 1-301
 B. 9 cr from following: ArtS 1-701, 1-102, 1-104, 1-501, 1-503, 1-302, 1-901

Requirements:

- A. 27 cr in studio courses numbered with the prefix 3- or 5-.
 B. 6 Upper Division cr in Art History.

LOWER DIVISION COURSES

- 1-101 (20). **BASIC DRAWINGS.** (3 cr)
 Introduction to studio work; exploration of contemporary and traditional methods. Work from nature, various drawing mediums.
- 1-102 (23). **DRAWING.** (3 cr; prereq 1-101)
 Work from life and nature; introduction to color and pictorial structure.
- 1-103 (24). **MATERIALS AND TECHNIQUES.** (3 cr; prereq 1-101)
 Introduction to various materials such as transparent mediums including ink wash, water color; opaque mediums including tempera, casein, liquitex, and various graphic mediums using charcoal, crayon, pastels, etc.
- 1-104 (25). **COLOR.** (3 cr; prereq 1-102)
 Continuing and elaborating upon drawing experiences of 1-102; serves as bridge between Lower Division drawing courses and Upper Division painting, printmaking, and other courses where color is used.
- 1-105 (26). **CALLIGRAPHY.** (3 cr; prereq 1-102)
 Studies in Roman and cursive script. Exercises in fundamental skills of lettering, experience with pen and brush. Aspects of composition and page layouts.
- 1-107 (23A). **DRAWING.** (2 cr; for architects only)
- 1-108 (24A). **DRAWING.** (2 cr; prereq 1-107; for architects only)
- 1-109 (25A). **DRAWING AND PAINTING I.** (2 cr; prereq 1-108; for architects only)
- 1-301 (40). **BASIC SCULPTURE.** (3 cr) Nash, Kraning, Potratz
 Beginning course. Intensive study of structure with emphasis on form and space. Construction in metal and plaster.
- 1-302 (41). **BASIC SCULPTURE I.** (3 cr) Nash, Kraning, Potratz
 Integrates basic principles examined in 1-301. Natural form studied for sculptural concepts. Imaginative approach to form is encouraged.
- 1-303 (42). **BASIC SCULPTURE I.** (3 cr; prereq 1-301 or 1-302) Kraning
 Clay modeling from life, and beginning casting techniques.
- 1-501 (32). **ELEMENTS OF PRINTMAKING.** (3 cr; prereq 1-101) Bethke
 Foundation course in mediums of printmaking. Problems in engraving, etching, and other techniques employed in working on metal plate, as well as lithography, woodcuts, and combined processes.

Course Offerings and Major Sequences

- 1-502 (33). PRINTMAKING.** (3 cr; prereq 1-501) Bethke
Introduction to various techniques of etching and engraving employed in working on metal plates, as well as lithography; woodcuts, and combined processes.
- 1-503/1-504/1-505 (34-35-36). LITHOGRAPHY.** (3-3-3 cr; prereq 1-101 or #) Friede
Introduction to methods of lithography-planography.
- 1-701 (10). PHOTOGRAPHY.** (3 cr)
Introduction to photographic medium, its background and meaning today. Lectures in contemporary and historical use of photography. Problems in use of camera, printing, and enlarging.
- 1-702 (11). PHOTOGRAPHY.** (3 cr; for students who have had previous instruction in photography or have worked in photography and know principles of developing and printing; prereq 1-701 or practical experience and #)
Develops personal photographic perception in student through lectures on photographic history and contemporary trends in photography. Intensive field work.
- 1-801 (45). CERAMIC PROCESSES.** (3 cr) MacKenzie, Hoard
Introduction to building pottery by hand and forming on potter's wheel. Experiments with decorative techniques on wet clay and on bisque-fired pottery. Primarily concerned with pottery as creative expression but includes technical considerations of clays, glazes, and kilns.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-101/3-102/3-103 (53-54-55). DRAWING.** (3-3-3 cr; prereq 1-102)
From model, still life, and nature. Principles of anatomy.
- 3-104f/3-105w/3-106s (56-57-58). DRAWING AND DESIGN.** (3-3-3 cr; not open to studio art majors; 2 studio and 1 lect per wk)
Studio work in varied media; lectures and discussions on theory and practice of contemporary art.
- 3-107/3-108/3-109 (60A-61A-62A). DRAWING AND PAINTING II.** (2-2-2 cr; for architects; prereq 1-109)
- 3-111/3-112/3-113 (60B-61B-62B). WATER COLOR.** (3-3-3 cr; prereq 1-101 or equiv, with #) Myers
Introduction to transparent water color; gouache, casein, and tempera. General course introducing student to various drawing and painting mediums. Figure, still life, landscape, and abstract design.
- 3-116 (65). COMMERCIAL DESIGN.** (3 cr; prereq 1-101; not open to art majors)
Commercial art, offered as part of minor in art. Commercial art problems in design and drawing; emphasizes application of design principles.
- 3-117f/3-118w/3-119s (73-74-75). PRESENTATION TECHNIQUES.** (3-3-3 cr; prereq 1-103 [no prereq for architects])
Visual means of communicating ideas in fields of exhibition techniques, illustration, and advertising. Investigating characteristics and creative use of various mediums.
- 3-121/3-122/3-123 (70-71-72). PAINTING.** (3-3-3 cr; prereq 1-104 and 3-103 or #)
Introduction to medium of oil; individual projects and instruction.
- 3-127/3-128/3-129 (70B-71B-72B). PAINTING.** (2-2-2 cr, §3-121/3-122/3-123 [no cr for art majors]; for general students; prereq 1-101 or 1-102 or equiv, with #)
- 3-301, 3-302, 3-303f,w,s (80A,B,C). SCULPTURE II.**
3-301 (80A). Direct Metal Sculpture. (3 cr; prereq 1-303) Nash
Attention given to 20th-century tools and equipment.
3-302 (80B). Direct Carving in Stone and Wood. (3 cr; prereq 1-303) Kraning
Some work in combinations of materials.
3-303 (80C). Metal Casting of Sculpture. (3 cr; prereq 1-303) Potratz
Lost wax and sand casting techniques are employed.
- 3-304, 3-306, 3-308f,w,s (81A,B,C) 3-305, 3-307, 3-309f,w,s (82A,B,C) SCULPTURE III.**
3-304 (81A). Direct Metal Problems of Sculptural Expression and Organization. (3 cr; prereq 3-301, 3-302, 3-303) Nash
3-306 (81B). Carving, Modeling, Plastics, and Assemblage of Sculpture. (3 cr; prereq 3-301, 3-302, 3-303) Kraning
3-308 (81C). Problems Concerned With Cast Metal Sculpture. (3 cr; prereq 3-301, 3-302, 3-303) Potratz

- 3-305 (82A). **Experimental Work in Direct Metal.** (3 cr; prereq 3-304) Nash
Assigned class problems.
- 3-307 (82B). **Experimental Work in Plastics and Assemblage.** (3 cr; prereq 3-306)
Kraning
Assigned class problems.
- 3-309 (82C). **Experimental Work in Cast Metals.** (3 cr; prereq 3-308) Potratz
Assigned class problems.
- 3-401Hf (88H). **INTERDISCIPLINARY HONORS SEMINAR: MUSIC, STUDIO ARTS, THEATRE.** (2-4 cr, §Mus 3-401H, §Th 3-401H; prereq jr, sr honors candidate, #) Nash
- 3-402Hw (89H). **INTERDISCIPLINARY HONORS SEMINAR: MUSIC, STUDIO ARTS, THEATRE.** (2-4 cr, §Mus 3-402H, §Th 3-402H; prereq jr, sr honors candidate, #) Nash
- 3-501/3-502/3-503f,w,s (90-91-92). **PRINTMAKING, INTAGLIO PROCESSES.** (3-3-3 cr; prereq 1-501 or #)
- 3-701f/3-702w/3-703s (66-67-68). **INTRODUCTION TO ART OF FILM MAKING.** (3-3-3 cr; prereq 1-701)
Lectures and practical aspects of making films.
- 3-704/3-705/3-706 (83-84-85). **PHOTOGRAPHY II.** (3-3-3 cr; prereq 1-702 or Jour 1-301 or #)
Advanced students carry out creative problems in color development and printing. Experiments in photographic controls to illustrate limitations and capacities. Use of photography to interpret visual environment, and photographer's responsibilities in this use.
- 3-801/3-802/3-803f,w,s (93-94-95). **CERAMIC DESIGN.** (3-3-3 cr; prereq 1-901 or #) MacKenzie
Continuation of 1-901. Greater emphasis on wheel throwing. Advanced design problems and introduction to glaze and clay experimentation. Emphasis on development of personal expression in ceramic medium.
- 5-100 (183). **PROSEMINAR: 20TH CENTURY ART THEORIES IN PAINTING.** (3 cr; prereq sr, 5-106, and #)
Lectures and discussion. Painting studio staff and students request class for verbal presentation and analysis of contemporary trends as related to actual process of creativity.
- 5-101/5-102/5-103f,w,s (120-121-122). **ADVANCED DRAWING.** (3-3-3 cr; primarily for painting majors; prereq 3-103 or equiv)
Drawing in all mediums from life and from imagination. Studies of history of drawing.
- 5-104/5-105/5-106 (150-151-152). **PROBLEMS IN PAINTING.** (3-3-3 cr; prereq 3-123 and #) Busa
- 5-107/5-108/5-109 (153-154-155). **PROBLEMS IN PAINTING.** (3-3-3 cr; prereq 5-106 or #)
- 5-300 (185). **PROSEMINAR: 20TH-CENTURY ART THEORIES IN SCULPTURE.** (3 cr; prereq 5-100 and #) Nash
- 5-301, 5-304, 5-307/5-302, 5-305, 5-308/5-303, 5-306, 5-309 (180ABC-181ABC, 182ABC). **SCULPTURE IV.** (3-3-3 cr; prereq 9 cr above 3-301 for 5-301,5-304,5-307; 5-301,5-304,5-307 for 5-303,5-306,5-309) Nash, Potratz, Kraning
Advanced work in wood, stone, plaster, metal, plastics, and other materials of sculpture. Students work individually on projects.
- 5-400 (187). **PROSEMINAR: 20TH-CENTURY ART THEORIES.** (3 cr; prereq #)
- 5-404Hf,w,s (101H). **HONORS THESIS.** (Cr ar; prereq #)
- 5-405H (102H). **HONORS THESIS.** (Cr ar; prereq #)
- 5-500 (186). **PROSEMINAR: 20TH-CENTURY ART THEORIES IN PRINTMAKING.** (3 cr; prereq 5-501 and #) Myers.
- 5-501/5-502/5-503 (190-191-192). **ADVANCED PRINTMAKING—INTAGLIO PROCESSES.** (3-3-3 cr; prereq 3-503 or #) Myers
- 5-504/5-505/5-506 (133-134-135). **ADVANCED LITHOGRAPHY.** (3-3-3 cr; prereq 1-503) Priede
Specialized work in color printing and planographic techniques.
- 5-507/5-508/5-509 (136-137-138). **LITHOGRAPHY.** (3-3-3 cr; prereq 5-506 or #)

Course Offerings and Major Sequences

- 5-700 (184). PROSEMINAR: PHOTOGRAPHY.** (3 cr; prereq 5-703 and #)
Lectures and discussion of advanced problems involved in appropriate mediums. Staff and students request means to present verbal and theoretical information in addition to practice.
- 5-701f/5-702w/5-703s (123-124-125). FILM WORKSHOP.** (3-3-3 cr; prereq art or humanities or music or theatre major and #) Downs
Practical study of motion picture as an art form. Studio problems in script preparation, camera technique, and editing; emphasis on visual aspects of film making. Analysis of selected professional films and visits to local studios. In winter and spring quarters, a concentration on production, editing, and technical problems through making of a short film. Production limited to descriptive and experimental work.
- 5-704, 5-705, 5-706 (160, 161, 162). ADVANCED PROBLEMS: STUDIO PHOTOGRAPHY.**
(3 cr; prereq #)
- 5-707, 5-708, 5-709 (163, 164, 165). ADVANCED PROBLEMS: STUDIO FILM.** (3 cr; prereq #)
- 5-801, 5-802, 5-803 (193,194,195). ADVANCED PROBLEMS.** (3-3-3 cr; prereq #) MacKenzie
- 5-804, 5-805, 5-806 (196, 197, 198). GLASS WORKING.** (3 cr; prereq #) Hoard
Introduces techniques involved in forming glass from its molten state. Primary concern is creative expression with technical understanding.
- 5-970. DIRECTED STUDY.** (1-3 cr)

ASTRONOMY

See Physics and Astronomy

BEHAVIORAL BIOLOGY

See Ecology

BENGLI

See South Asian Languages

BIOCHEMISTRY (BioC)

(College of Biological Sciences)

See also listings under Biology.

A departmental major leading to the B.S. degree is available. The following courses are suitable for students in related curricula.

UPPER DIVISION COURSES

- Biol 3-021 (Biol 60). BIOCHEMISTRY.** (See Biology listings)
- Biol 3-025 (Biol 61). BIOCHEMISTRY LABORATORY.** (See Biology listings)
- 3-094 (98). UNDERGRADUATE SEMINAR.** (1 cr per qtr; prereq sr in biochemistry)
Discussions and reports.
- 3-990 (99). UNDERGRADUATE RESEARCH.** (1-3 cr per qtr; prereq sr in biochemistry)
Research problems for B.S. thesis (optional).
- 5-001w/5-002s (51-52). INTRODUCTION TO BIOCHEMISTRY.** (4-4 cr; prereq Chem 3-302 or #; students with grade of A or B in Biol 3-021/3-025 may be exempted from 5-001; 3 lect, 3 lab hrs per wk)
Introduction to fundamentals of composition, chemical properties, reactions and interactions of biological materials; these are illustrated in part through laboratory exercises performed by student.
- 5-741/5-742/5-743 (141-142-143). GENERAL BIOCHEMISTRY.** (3-3-3 cr; prereq #, ¶5-745,

5-746 except with Δ , 1 yr organic chemistry and cr in physical chemistry or \dagger (Chem 5-501, 5-520 or $\#$)

(Same as MdBc 5-741/5-742/5-743) Offered jointly by Department of Biochemistry, College of Biological Sciences, and Department of Biochemistry, College of Medical Sciences. Integrated series of lectures on chemical nature, properties, biochemical reactions, and intermediary metabolism of components of biological systems.

5-745, 5-746 (145, 146). **GENERAL BIOCHEMISTRY LABORATORY.** (3,3 cr; prereq \dagger 5-741/5-742, 4 cr in analytical chemistry and $\#$)

Laboratory work paralleling and required of all who are registered in BioC 5-741/5-742/5-743 and MdBc 5-741/5-742/5-743 except with permission of department heads.

5-748 (148). **GENERAL BIOCHEMISTRY LABORATORY.** (2 cr; prereq 5-742, 4 cr in analytical chemistry and $\#$)

For students in chemistry and chemical engineering.

BIOLOGY (Biol)

(College of Biological Sciences)

See also listings under anatomy, biochemistry, botany, ecology and behavioral biology, genetics and cell biology, microbiology, physiology, and zoology.

● Major Sequence for B.A.—

Required Background Courses:

- A. Biol 1-002 or Δ
- B. Chem 1-004/1-005, 1-006
- C. Math 1-441, 1-442/1-443/1-444
- D. Phys 1-040/1-050/1-060 or 1-270/1-280/1-290

Requirements:

- A. Chem 3-301/3-302
- B. Biol 3-011 or 3-012, 3-013, 3-021, 3-031, 3-041
- C. Biol 5-051, 5-055 or Bot 3-131, 3-132 or Bot 5-141, 5-142 or Zool 5-104
- D. 10 additional Upper Division credits, including at least 2 courses which include laboratory work in biological sciences courses. Courses chosen from any of the following should be considered courses in the major: anatomy, biochemistry, biology, botany, ecology and behavioral biology, genetics and cell biology, microbiology, physiology, zoology.

For majors leading to the B.S. in biochemistry, biology, botany and zoology, see the *College of Biological Sciences Bulletin*.

Honors Opportunities and Graduation with Honors: Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or in 108 Zoology.

General Education—Courses especially appropriate for nonscience and non-biology majors include: Biol 1-001/1-002 \dagger , 3-051, Bot 1-009, 1-012, Ecol 3-001, 1-003, GCB 3-012, 3-002, Zool 5-096.

LOWER DIVISION COURSES

1-001/1-002 \dagger (1-2 \dagger). **BIOLOGY.** (5-5 \dagger cr; prereq none, high school chemistry recommended; 3 lect on CCTV, 1 quiz-discussion, 3 lab hrs per wk)

Study of plants, animals, and microbes. Includes introduction to ecology, physiology, classification, cytology, energetics, genetics, development, and evolution.

1-002H (2H). **HONORS COURSE.** (5 cr; prereq grade of A or B in Biol 1-001)

1-051 (49). **PRINCIPLES OF BIOLOGY.** (3 cr, \S Biol 1-002; prereq Chem 1-005)

Course Offerings and Major Sequences

Introduction to biology, including cell theory, energy relations, reproduction, inheritance, and evolution. Available only by independent study.

UPPER DIVISION COURSES

- 3-011f,w (50). ANIMAL BIOLOGY.** (5 cr; prereq Biol 1-002 or Δ and Chem 1-005 or equiv)
W Herman, Gilbertson
Survey of types of animals; emphasis on varied ways in which different animals have solved similar problems.
- 3-012w,s (51). PLANT BIOLOGY.** (5 cr; prereq Biol 1-002 or Δ and Chem 1-005 or equiv)
Pratt, McLaughlin, Shininger
Comparative study of growth, development, and function in plants; emphasizes adaptations which have evolved in various groups of plants providing suitable means of support, transport of materials, nutrition, and reproduction; evolution and diversity of plant life.
- 3-013 (52). MICROBIOLOGY.** (4 cr; §MicB 5-105; prereq 1-002 or Δ , Chem 3-302) Klein, Chapman
Lectures and laboratory exercises in taxonomy, anatomy, physiology, biochemistry, and ecology of microbes. Emphasis on fundamental properties of bacteria. Lectures also include descriptions of major groups of bacteria and remaining protista.
- 3-021f,s (60). BIOCHEMISTRY.** (4 cr; prereq 1-002 or Δ , Chem 3-302) Dagley
Introduction to biochemistry and biophysics of cells; emphasis on enzyme catalysis, cellular energetics, biosynthesis of cellular constituents, and cellular regulatory mechanisms.
- 3-025 (61). LABORATORY IN BIOCHEMISTRY.** (1 cr; prereq 3-021 or ¶3-021)
- 3-031f,w (70). GENETICS.** (3 cr, §GCB 3-022; prereq 3-011 or 3-012, 3-013, 3-021) Woodward
Introduction to principles and mechanisms of heredity; emphasis on structure and functioning of genetic material and its relation to breeding behavior, development, and population structure in procaryotic and eucaryotic organisms.
- 3-041w,s (80). ECOLOGY.** (3 cr; prereq 1 qtr calculus and Biol 3-031, or #)
Interactions of environmental influences and individual organisms; population growth and regulation; nature, organization, and development of ecological systems. Role of modern man in biosphere.
- 3-045 (81). LABORATORY IN ECOLOGY.** (1 cr; prereq 3-041)
- 3-051w (57). BIOLOGY AND THE FUTURE OF MAN.** (4 cr) Gorham, Pratt
A nontechnical discussion of biological factors affecting the quality of life, e.g., population growth, genetics and eugenics, aging, biochemistry of behavior, biological aspects of social systems, chemical and biological warfare, food supply, environmental change, biological aspects of ethics and morals, space biology.
- 3-950H (98H). UNDERGRADUATE SEMINAR.** (1-2 cr; prereq 2.50 GPA and #)
Seminars will describe principles of many different experimental techniques. Purpose of seminars is to acquaint students with uses, limitations, and sensitivity of physical, chemical, and biological techniques used by biologists.
- 5-051w,s (110). GENERAL PHYSIOLOGY.** (3 cr; prereq 3-011, 3-021, Phys 1-060 or Phys 1-290) Sheridan
A quantitative approach to the study of cell function with emphasis on the application of physical and chemical principles. Major topics covered include transport, electrical activity of cell membranes, and cell contractility.
- 5-055 (111). LABORATORY IN GENERAL PHYSIOLOGY.** (2 cr; prereq 5-051 or ¶5-051) Sheridan
- 5-061 (120). DEVELOPMENTAL BIOLOGY.** (3 cr; prereq 3-031) Spratt, McLaughlin
Developing systems and control mechanisms of development, from molecule to organism.
- 5-065 (121). LABORATORY IN DEVELOPMENTAL BIOLOGY.** (2 cr; prereq 5-061 or ¶5-061) Spratt, McLaughlin
- 5-501 (115). BIOCHEMICAL EVOLUTION.** (3 cr; prereq 5 cr biochem) Kirkwood, Jeness
Lectures and assigned reading on molecular evolution covering prebiotic evolution and the phylogeny of important functional molecules and biochemical systems in living organisms.
- 5-601 (131). GENERAL CYTOLOGY.** (3 cr; prereq 10 cr in biol, bot or zool, elem gen or #, §GCB 3-012, §GCB 3-051) Johnson, Cunningham
Introductory analysis of structure, growth, and function of cells and organelles.

- 5-605 (132). **GENERAL CYTOLOGY LABORATORY.** (2 cr; limited to 10 students; prereq 5-601 or ¶5-601 or ¶) Johnson, Cunningham
Experimental approach to cell structure and function including specialized forms of light microscopy, autoradiography, cell fractionation and an introduction to electron microscopy.
- 5-951w. **THE BIOLOGIST AS SCIENTIST, EDUCATOR AND CITIZEN.** (3 cr; prereq 15 cr biol sci) Hooper and staff
The role of the scientist in decision making and persuasion; teaching methods in biology; the organizational structure of the academic and governmental world.

BIOMETRY (PubH)

(Public Health, College of Medical Sciences)

Biometry is an interdisciplinary field in the biological and health sciences. It interrelates biomedical statistics, health computer science and mathematical biology in the study of quantitative concepts and research procedures of the life and health sciences. Biometry has thus a unique role in liberal education.

The biometry program leads to the B.A. degree.

As a major field, biometry 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 the local, state, national and international level, and (4) teaching.

● Major Sequence for B.A.—

I. Required Background Courses

- A. Math 1-441 and Math 1-442/1-443/1-444
- B. Chem 1-004/1-005† and 1-006
- C. One of the following sequences: Phys 1-040/1-050/1-060 or 1-270/1-280/1-290
- D. One of the following: Biol 1-001/1-002† or 1-051

II. Upper Division Requirements

- A. PubH 5-430
- B. PubH 5-450/5-452/5-454 and 5-451/5-453/5-455
- C. One of the following sequences: Stat 5-121/5-122/5-123 or 5-131/5-132/5-133

The premedical curriculum, supplemented by Math 1-442/1-443/1-444 and Requirements II A., B., and C. above, constitutes an acceptable major program in biometry.

CLA requirements of 75 credits in Upper Division courses, of which at least 30 credits are outside the major area, must also be fulfilled. Credits for Math 1-443/1-444 and Phys 1-280/1-290 may be used for this purpose.

Honors Opportunities and Graduation with Honors: Information concerning opportunities for honors students and department requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the department office.

Note—Biometry courses listed below are offered in the School of Public Health (PubH). The course PubH 5-400 is designed to be of particular interest to non-biometry majors in the biosciences.

UPPER DIVISION COURSES

PubH 5-400. INTRODUCTION TO QUANTITATIVE METHODS IN THE LIFE SCIENCES.

(3 cr; primarily for premedical students and students majoring in biological sciences; prereq Biol 1-001/1-002, Chem 1-004/1-005, Math 1-142) McHugh
Basic quantitative methods for the design and analysis of clinical and laboratory studies in biology and medicine.

PubH 5-430/5-431/5-432 (120A-120B-120C). BIOMEDICAL COMPUTING I, II, III. (3-3-3

Course Offerings and Major Sequences

- cr; prereq Math 1-111)
Introduction to data processing concepts and equipment; information storage and retrieval; statistical and analysis packages; dynamic programming; special input/output techniques for biological laboratory experimentation epidemiology, hospital information systems, and pattern recognition.
- PubH 5-440/5-441/5-442 (121A-121B-121C). QUANTITATIVE MAMMALIAN BIOLOGY I, II, III.** (3-3-3 cr; prereq 1-yr sequences in mathematics, physics, chemistry, and biology or #) Evans
5-440: Diffusion, surface tension, and mechanics of respiration, circulation, digestion, and locomotion. 5-441: Chemical aspects of blood, respiration, renal function, nutrition, and metabolism. 5-442: Endocrine, sensory, neuromuscular, and central neural functioning.
- PubH 5-450 (110A). BIOMETRY I.** (3 cr; prereq familiarity with basic concepts of calculus desirable and ¶5-451) Bartsch, Jeffries
Basic concepts in probability, binomial, Poisson and normal probability models for random phenomena in the biological and medical sciences.
- PubH 5-451 (111A). BIOMETRY LABORATORY I.** (2 cr; prereq ¶5-450) Jeffries
Application of concepts of probability to the development of probability models for random phenomena in the biological and medical sciences.
- PubH 5-452 (110B). BIOMETRY II.** (3 cr; prereq 5-450 and ¶5-453) Bartsch, Jeffries
Further consideration of testing statistical hypotheses and interval estimation; χ^2 applied to frequency data; regression analysis; correlation; analysis of variance; contrasts and multiple comparison techniques.
- PubH 5-453 (111B). BIOMETRY LABORATORY II.** (2 cr; prereq ¶5-452) Jeffries
Application of concepts of testing and estimation of the parameters of the basic probability models; application of χ^2 to goodness of fit and heterogeneity tests; application of regression to bioassay; application of analysis of variance to bioassay.
- PubH 5-454 (110C). BIOMETRY III.** (3 cr; prereq 5-452 and ¶5-455) Bartsch, Jeffries
Analysis of nested, randomized block, factorial, and split plot designs.
- PubH 5-455 (111C). BIOMETRY LABORATORY III.** (2 cr; prereq ¶5-454) Jeffries
Basic designs will be illustrated with numerous examples from the biological sciences.
- PubH 5-456. BIOMETRY CONSULTING SEMINAR.** (3 cr; prereq biometry major; offered every quarter) Boen and others
Consultant and consultee interaction: communication and formulation of the biometric problem. Role and responsibility of the biometrician. Robustness and relevance of frequently used analytical techniques. Biometry student intership experiences.
- PubH 5-460. DEMOGRAPHY AND HEALTH.** (3 cr, §5-408; prereq biometry major...others #) Kjelsberg
Needs, sources, collection and interpretation of data in the areas of population, mortality, morbidity, natality, and health services.
- PubH 5-462. LIFE TABLE TECHNIQUES.** (3 cr; prereq biometry major... others #) Kjelsberg
Mathematical development of life table techniques and application to follow-up studies in medicine and public health.

BIostatistics

See Public Health

BOTANY (Bot)

(College of Biological Sciences)

A departmental major leading to the B.S. degree is available in the College of Biological Sciences.

LOWER DIVISION COURSES

- 1-009s (10). MINNESOTA PLANT LIFE.** (3 cr; suitable for nonmajors) Morley
Nontechnical survey of all plant groups native to Minnesota; special reference to identification and distribution.
- 1-012f,w (12). PLANTS USEFUL TO MAN.** (4 cr; for majors or nonmajors) Lawrence, Jonas

Survey of roles which plants have played in man's biological and cultural development. Lectures and demonstration of material.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-109w (53). PLANT ANATOMY. (5 cr; prereq Biol 1-002 or 3-012) Hall
Structure and development of plants with special reference to vascular plants.
- 3-125f (55). MORPHOLOGICAL METHODS. (3 or 5 cr; prereq 3-109 and #) Abbe
Introduction to techniques basic to anatomy, morphology, and cytology.
- 3-131f,s (91). SURVEY OF PLANT PHYSIOLOGY. (3 cr; prereq Biol 1-002 or 3-012, Chem 1-005 or 1-032) Soulen, Linck and others
Physiological principles underlying processes which occur in living plants, with emphasis on higher plants. Growth and development, mineral nutrition, water relations and solute metabolism, respiration, and photosynthesis.
- 3-132f,s (91A). PLANT PHYSIOLOGY LABORATORY. (2 cr; prereq 3-131 or ¶3-131)
Laboratory course to accompany Bot 3-131.
- 3-201f,s (52). ELEMENTARY TAXONOMY. (3 cr; prereq Biol 1-002 or 3-012) Morley
Introduction to taxonomy of ferns and flowering plants, with representative 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.
- 5-101f (104). SURVEY OF PLANT KINGDOM. (5 cr; prereq Biol 1-002 or 3-012) Abbe
Brief consideration of evolutionary relationships throughout plant kingdom, especially as illustrated by life histories.
- 5-105f (127). MORPHOLOGY OF VASCULAR PLANTS. (5 cr; prereq 5-101 or #) Abbe, Hall
Vegetative and reproductive structure of living and fossil vascular plants. Their evolutionary relationships based on phylogenetic principles.
- 5-111w (121). DEVELOPMENTAL PLANT ANATOMY. (5 cr; prereq Biol 1-002 or 3-012 or equiv) Abbe
Microscopic structure of vascular plants; particular attention to development in root, stem, and leaf.
- 5-119w,s (125). MORPHOGENESIS. (3 or 5 cr; prereq Biol 3-012 or equiv, Biol 3-021 or #) Shining, McLaughlin
Development of form and structure in plants; a study of the factors controlling growth and development.
- 5-141s (141). SURVEY OF PLANT PHYSIOLOGY. (3 cr; prereq Biol 1-002 or 3-012; course in organic chemistry, physics) Frenkel
Critical study of physiological processes which occur in living plants; emphasis on higher plants. Growth and development, energy relations, mineral nutrition, water relations, respiration, photosynthesis, and nitrogen metabolism.
- 5-142s (141A). PLANT PHYSIOLOGY LABORATORY. (2 cr; prereq 5-141 or ¶5-141)
Laboratory course to accompany Bot 5-141.
- 5-150w (186). MEASUREMENT OF PLANT-ENVIRONMENT INTERACTIONS. (Cr ar; prereq #) Sucoff and staff
An advanced laboratory course dealing with measurements using intact plants, including water balance, energy budget, and gas exchange between plants and the environment.
- 5-160f,w,s (187). METHODS OF PLANT ANALYSIS. (Cr ar; prereq #) Weiser and listed staff
In-depth experimental laboratory approach to microscopic analysis, sample preparation, fractionation, isolation, and measurement of plant compounds employing modern methods of plant physiology. Discrete and independent units in: (A) Primary Plant Metabolites (Li, offered s1970 and alt yrs); (B) Plant Proteins and Amino Acids (Olson, Soulen, offered w1970 and alt yrs); (C) Plant Hormones and Tissue Culture (offered w each yr); (D) Photosynthesis and Photosynthetic Pigments (Frenkel, offered s1971 and alt yrs); (E) Phytochrome (Koukkari, offered s1971 and alt yrs); (F) Plant Nucleic Acids (Li, offered s1971 and alt yrs); (G) Analysis of Cell Structure (Stadelmann, offered w1971 and alt yrs).
- 5-182f (182). PLANT PHYSIOLOGY. (3 cr; prereq 5 cr in biochemistry) Soulen, Olson
Plant cell and its organelles, metabolism, including photosynthesis, and genetic control of physiological processes; emphasis throughout on dynamic aspects of these processes.

Course Offerings and Major Sequences

- 5-183w (183). **PLANT PHYSIOLOGY.** (3 cr; prereq Biol 1-002 or 3-012, Chem 3-302, physics) Discussion of membrane phenomena, water relations, mineral metabolism, and translocation in plants.
- 5-184s (184). **PLANT PHYSIOLOGY.** (3 cr; prereq Biol 1-002 or 3-012, Chem 3-302, physics) Brun and others
Growth of higher plants, including regulation by hormones, light, and temperature.
- 5-185w (185). **PHYSIOLOGY OF PHOTOSYNTHETIC MICRO-ORGANISMS.** (3 cr; prereq #; offered 1970-71 and alt yrs) Frenkel
Comparative physiology of photosynthetic bacteria and of algae, and its biochemical aspects. The response of the organisms to light, temperature, and other environmental conditions. Control of cell growth and development; autotrophic and heterotrophic growth. Structure and function of cellular organelles. Relationships to non-photosynthetic organisms; evolutionary considerations.
- 5-190f,w,s (188). **RESEARCH PERSPECTIVES IN PLANT PHYSIOLOGY.** (1-4 cr; prereq #) Behrens and others
Laboratory course in which student undertakes a well-defined research problem of limited scope.
- 5-205s (115). **FLORA OF MINNESOTA.** (4 cr; prereq 3-201 or #) Ownbey
Vascular plants of the state; taxonomic and floristic relationships; geographical distribution and variation; collection and identification; field trips.
- 5-207f (108). **PTERIDOPHYTES.** (3 cr; prereq 3-201 or #; offered 1971-72 and alt yrs) Ownbey
Classification of living ferns and fern allies; special attention to temperate North America; terminology; keys; geographic distribution; distinguishing characters of families, genera, and species.
- 5-208f (110). **GYMNOSPERMS.** (3 cr; prereq 3-201 or #; offered 1970-71 and alt yrs) Ownbey
Survey of taxonomy and phylogeny of gymnosperms; special emphasis on living representatives.
- 5-211w (106). **SURVEY OF ANGIOSPERM FAMILIES.** (5 cr; prereq 3-201 or #; offered 1971-72 and alt yrs) Morley
Detailed study of characteristics of orders and families of flowering plants on worldwide basis.
- 5-212w (114). **PRINCIPLES OF ANGIOSPERM PHYLOGENY.** (3 cr; prereq 3-201 or #; offered 1970-71 and alt yrs) Morley
Evolutionary relationships and various means of judging them within the angiosperms. Laboratory investigation of representative examples.
- 5-231f (150). **INTRODUCTION TO STUDY OF ALGAE.** (5 cr; prereq 10 cr in botany or biology or #; offered 1970-71 and alt yrs) Brook
Structure, reproduction, and life histories of major algal divisions.
- 5-233f (151). **BIOLOGY OF ALGAE.** (5 cr; prereq 5-231 or #; offered 1971-72 and alt yrs) Brook
Aspects of biology of algae, dealing with their culture, cytology, and ecology, and their importance in limnology, fisheries, public health, and water supplies.
- 5-251s (128). **PHYLETIC PALEOBOTANY.** (3 cr; prereq #) Hall
Morphology, anatomy, and evolution of fossil plants, especially those occurring in late Paleozoic.
- 5-253f (129). **FLORISTIC PALEOBOTANY.** (3 cr; prereq #; offered 1971-72 and alt yrs) Hall
Fossil floras from late Paleozoic to present; emphasis on macrofossil remains, especially leaves, and their use in stratigraphy, paleoclimatic and paleoecologic interpretations.
- 5-255f (126). **PRE-PLEISTOCENE PALYNOLOGY.** (3 cr; prereq 5-301; offered 1970-71 and alt yrs) Hall
Survey of pollen and spores primarily from Mesozoic and Tertiary deposits. Techniques of sample preparation; nomenclature and identification of fossil pollen and spores; their use in stratigraphy.
- 5-301w (165). **POLLEN MORPHOLOGY AND TAXONOMY.** (3 cr; prereq 10 cr in botany or biology and #; offered 1970-71 and alt yrs) Cushing
Ontogeny, comparative morphology, and classification of pollen grains and pteridophyte spores, and their relation to the systematics of vascular plants. Analysis of the pollen and spore content of the atmosphere.
- 5-305s (169). **QUATERNARY PHYTOGEOGRAPHY AND PALYNOLOGY.** (5 cr; prereq 5-301 and Biol 3-041 or #; offered 1970-71 and alt yrs) Cushing

Historical problems in interpretation of distribution of modern plant species. Applications of Pleistocene and recent pollen and plant macro-fossil analysis to phytogeography. Field and laboratory methods, pollen statistics.

- 5-321s (119). EXPERIMENTAL CYTOLOGY.** (3 or 5 cr; prereq Biol 5-601)
Discussion and experimental analysis of suitable current, specialized phases of cytology. Use of microscopical and cytochemical analytical methods to study cells in vitro and in vivo.
- 5-801su (116). SUMMER FLORA OF MINNESOTA.** (5 cr; prereq 3-201 or equiv or #; offered in Lake Itasca biology sessions)
Survey of summer flowering plants and ferns of the state; particular reference to local flora. Collection and identification of species; distribution in Minnesota; literature and taxonomic methods.
- 5-805su (112). AQUATIC FLOWERING PLANTS.** (5 cr; prereq 3-201 or equiv or #; offered in Lake Itasca biology sessions)
Higher plants of aquatic and marsh habitats. Identification and collection; association of species; relations to habitat; adaptive morphology and food value to wildlife.
- 5-811su (155). FRESHWATER ALGAE.** (5 cr; prereq 10 cr in biology or #; offered in Lake Itasca biology sessions)
Morphology and taxonomy of freshwater algae; collection and identification of local algae.
- 5-815su (157). BRYOPHYTES.** (5 cr; prereq 10 cr in biology or #; offered in Lake Itasca biology sessions 1971)
Field and laboratory study of mosses and liverworts of Minnesota.
- 5-821su (159). LICHENS.** (5 cr; prereq 10 cr in botany or zoology or #; offered in Lake Itasca biology sessions 1972)
Taxonomy, ecology, and floristics of lichens of northern Minnesota; identification, sampling methods, microchemistry as taxonomic tool.

BUSINESS ADMINISTRATION

(School of Business Administration)

The following courses in business administration are open to students in the Arts College as electives without special petition. There is no provision for a major in business administration in the Arts College although a few of the following courses may count toward a major in the Department of Economics (See Economics).

Students electing a minor in business administration should include Accounting 1-024/1-025/1-026.

No business administration courses, outside of Accounting 1-024/1-025/1-026, are open to Lower Division Arts College students. This includes the pre-business major. The below-listed courses are open to Upper Division Arts students pursuing a business minor.

LOWER DIVISION COURSES

Acct 1-024f,w,s/1-025f,w,s/1-026f,w,s (24-25-26). PRINCIPLES OF ACCOUNTING. (3-3-3 cr, \$Acct 3-050/3-051; prereq 3rd qtr fr)
Recording, reporting, and interpreting business events. Use of accounting as tool of business management.

UPPER DIVISION COURSES

Upper Division courses in business administration are open only to Upper Division students.

Fin 3-000 (56). CORPORATION FINANCE. (3 cr, \$8-000; prereq Acct 1-026)
Principles governing planning, raising, and control of short- and long-term funds for a business enterprise.

BLaw 3-058 (58). BUSINESS LAW: CONTRACTS. (3 cr, \$8-158; prereq Econ 1-002 or equiv)
Law of contracts. Case method.

Course Offerings and Major Sequences

- Ins 3-100 (53). RISK MANAGEMENT AND INSURANCE.** (3 cr, §8-100; prereq Econ 1-002 or equiv)
Recognition, measurement, and evaluation of insurable personnel, property, and liability risks of firms and families. Tools of risk management.
- IR 3-002 (52). SYSTEMS OF INDUSTRIAL RELATIONS: LABOR MARKETING.** (3 cr, §Econ 3-501, IR 5-022; prereq Econ 1-002 or equiv)
Introduction to current employment relationships; economic approach and analysis. Application and conservation of human resources in employment, related social and economic problems.
- IR 3-017 (142). SETTLEMENT OF INDUSTRIAL RELATIONS DISPUTES.** (3 cr; prereq 3-002 or 5-022)
Nature of industrial conflict in employment relations; stresses contributing to conflict and dispute situations.
- Mgmt 3-001 (70). FUNDAMENTALS OF MANAGEMENT.** (3 cr)
Study of concepts, theory, research, and operational problems. Includes the principal functional areas of management. Examines provisions of necessary factors and relationships to achieve organizational objectives: Establishment of goals, policies, procedures; organizational structure and behavior; leadership; control systems.
- Mktg 3-000 (57). PRINCIPLES OF MARKETING.** (3 cr, §8-000; prereq Econ 1-002 or equiv; 2 lect, 2 quiz sections per wk)
Marketing functions and institutions. Channels of distribution. Retail and wholesale trade.
- Mktg 3-085 (85). PRICE POLICY.** (3 cr [not available for grad cr]; prereq 3-000)
Managerial problems concerning pricing and price policy. Methods used and factors considered in pricing goods and services in industrial markets.
- Prod 3-050 (50). PRODUCTION MANAGEMENT.** (3 cr, §8-150; prereq QA 3-053)
Techniques, managerial problems, and decision-making processes in planning and controlling production activity. Production as function of the enterprise rather than as a strictly manufacturing activity. Research and development, role of standards, physical facilities, systems and procedures analysis, work measurement, materials control, quality control, and production planning and control.
- QA 3-052 (52). QUANTITATIVE METHODS FOR ADMINISTRATION I.** (3 cr; prereq Math 1-142 or 1-443 or #)
Introduction to quantitative models; measurement and statistical description; probability and probability distributions; sampling and sampling distributions.
- QA 3-053 (53). QUANTITATIVE METHODS FOR ADMINISTRATION II.** (3 cr; prereq 3-052 and Econ 1-002 or #)
Introduction to decision problems; simple static models; static models dominated by constraints; dynamic models, and simulation.
- QA 3-054 (54). QUANTITATIVE METHODS FOR ADMINISTRATION III.** (3 cr; prereq 3-053 or #)
Statistical estimation and prediction; statistical decision making; introduction to design of experiments; regression and correlation, and time series analysis.
- Tran 3-054 (54). FUNDAMENTALS OF TRANSPORTATION.** (3 cr, §8-154; prereq Econ 1-002 or equiv)
Organization and economic aspects of transportation system of United States including rail, highway, air, pipeline, and water.

CELL BIOLOGY

See Genetics

CHEMISTRY (Chem)

(Institute of Technology)

Major Sequence in Arts College—

Required Background Courses

A. Chem 1-031, 1-032, 1-033 or 1-031H, 1-035H, 1-036H

B. Phys 1-270/1-280/1-290 or 1-210/1-220/1-230

C. Mathematics through integral calculus (Math 1-240 or 1-444)

Requirements:

- A. Chem 1-301, 1-302, 3-303, 3-304 or 3-305H, 3-306H, 3-307H, 3-304
- B. Chem 5-120
- C. Chem 5-501, 5-502, 5-503, 5-510, 5-511
- D. Chem 5-701

A 4-year professional course in chemistry is available in both the Arts College and the Institute of Technology. As many students find programming a professional course somewhat easier in the Institute of Technology, those interested in Chemistry as a major field are advised to see both Arts College and Institute of Technology bulletins. Students considering a chemistry major should start with Chem 1-031; substitution of 1-004 is unsatisfactory and leads to substantial loss of time.

The minimum requirements of the Arts College sequence can be recommended as adequate only for non-professional careers in science. For the student contemplating a scientific career it is strongly recommended that he consult with his adviser to schedule additional chemistry courses. The student may, upon completion of certain science courses in addition to the Arts College sequence, earn a degree certified by the American Chemical Society.

Students majoring in chemistry are advised to arrange their work so that they can take physical chemistry in the junior year. They must take sufficient courses in German to acquire a reading knowledge of the chemical literature. To earn a bachelor's degree with a chemistry major in CLA in the regular 4-year period, the student is advised to begin the study of German in high school.

Preprofessional training for a career as a technical librarian is possible in the Arts College. The program includes a major in chemistry and a minor taken in the Library School (see Library School later in this section).

College of Education—For the specialized curricula in chemistry see the *College of Education Bulletin*.

LOWER DIVISION COURSES

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

1-004/1-005† (CeCh 4-5). GENERAL PRINCIPLES OF CHEMISTRY. (5 cr per qtr, §1-014/1-015 or 1-031/1-032; prereq predicted Math GPA 1.90 on ACT...Math 0-009 or college course in algebra...4 yrs high school math and high school chemistry recommended; 4 lect, 1 rec, and 3 lab hrs per wk)

Introduction to chemistry from the standpoint of atomic structure; periodic properties of elements and compounds derivable from structural considerations; laws governing behavior of matter, theories of solutions, acids, bases, and equilibrium.

1-006 (CeCh 6). PRINCIPLES OF SOLUTION CHEMISTRY. (4 cr; prereq 1-005 or 1-015 or 1-032; 3 lect and 4 lab hrs per wk)

Lecture and laboratory work related to chemistry of selected cations and anions. Detection and behavior of these ions; heterogeneous and homogeneous equilibria systems. Attention to oxidation-reduction systematics; complex ion formation as it relates to aqueous solution chemistry; and general chemical phenomena interrelated with structure.

1-031 (CeCh 31). GENERAL PRINCIPLES OF CHEMISTRY. (5 cr, §1-004, §1-014; prereq 4 yrs high school math, 1 yr high school chemistry...1 yr high school physics recommended; 3 lect, 1 review, 1 lab discussion plus one 4-hr lab per wk)

A consolidation of the basic principles of chemistry with those of qualitative and quantitative analysis; stoichiometry, development and use of structural concepts, energetics and geometry of molecule, bonding, and the behavior of the gaseous and liquid states.

1-032 (CeCh 32). GENERAL PRINCIPLES OF CHEMISTRY. (5 cr, §1-005, §1-015; prereq 1-031; 3 lect, 1 review, 1 lab discussion plus one 4-hr lab per wk)

A continuation of the development of the basic principles of chemistry utilizing quantita-

Course Offerings and Major Sequences

tive techniques; the solid state, theory of solutions, equilibrium, gas and condensed phases, behavior and nature of the solution process, acids and bases.

- 1-033 (GeCh 33). GENERAL PRINCIPLES OF CHEMISTRY.** (5 cr; prereq 1-032; 3 lect, 1 review, 1 lab discussion plus one 4-hr lab per wk)
Concluding the treatment of basic principles included in 1-031 and 1-032 using quantitative techniques: dynamics including chemical kinetics, mechanisms, electrochemistry, the metallic state, transition metals and nonmetals with their descriptive chemistry including analysis. The honors section, 1-036, will continue.
- 1-035H (GeCh 32H). HONORS COURSE: GENERAL PRINCIPLES OF CHEMISTRY.** (5 cr, §1-005, 1-015, 1-032; prereq 1-031)
- 1-036H (GeCh 33H). HONORS COURSE: GENERAL PRINCIPLES OF CHEMISTRY.** (5 cr, §1-033; prereq 1-035 or §)
- 1-301 (OrCh 16). CARBON COMPOUNDS.** (4 cr; for students in engineering, except chemical and mining; prereq 1-005, 1-015 or 1-032; 4 lect hrs per wk; cannot be substituted for 3-301 or 3-302)
Carbon compounds; special emphasis on those compounds useful as engineering materials, and processes by which such compounds are made.
- 1-302 (OrCh 17). CARBON COMPOUNDS LABORATORY.** (1 cr; prereq 1-301 or ¶1-301)
Laboratory course, to accompany 1-301.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

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

- 3-099 (AnCh 96, 97, 98; OrCh 96, 97, 98; PCh 96, 97, 98; and InCh 96, 97, 98). SENIOR THESIS.** (Cr ar; prereq §, 4th yr)
Written final senior thesis report is required.
- 3-100 (AnCh 57A). QUANTITATIVE ANALYSIS.** (3 cr; 3-100, 3-101†; for nonchemistry majors; prereq 1-005)
Survey of modern quantitative methods of analysis. Lecture.
- 3-101 (AnCh 57B). QUANTITATIVE ANALYSIS.** (2 cr; for nonchemistry majors; prereq 3-100 or ¶3-100)
Survey of modern quantitative methods of analysis including elementary physicochemical procedures. Laboratory.
- 3-102 (AnCh 40). INTRODUCTION TO ANALYTICAL CHEMISTRY.** (4 cr; for physics majors; prereq 1-014, 1-015; 3 lect and 4 lab hrs per wk)
Equilibria involved in analytical processes. Properties and formation of precipitates. Methods of separation. Introduction to electrochemical methods.
- 3-301 (OrCh 61). ELEMENTARY ORGANIC CHEMISTRY.** (5 cr; prereq 1-005 or 1-032 or equiv; 3 lect, 1 lab conf, 1 quiz and 4 lab hrs per wk)
Important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. Laboratory work includes preparation of typical substances.
- 3-302 (OrCh 62). ELEMENTARY ORGANIC CHEMISTRY.** (5 cr; prereq 3-301 or 3-305H; 3 lect, 1 lab conf, 1 quiz, and 4 lab hrs per wk)
Important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. Laboratory work includes preparation of typical substances.
- 3-303 (OrCh 63). ELEMENTARY ORGANIC CHEMISTRY.** (3 cr; prereq 3-302 or 3-306H; 3-303 is prereq to all other advanced courses in organic chemistry; 3 lect per wk)
Lecture course.
- 3-304 (OrCh 65). ELEMENTARY ORGANIC CHEMISTRY LABORATORY.** (4 cr; prereq 3-303 or ¶3-303; prereq to all advanced courses in organic chemistry; 8 lab hrs and 1 lect and 1 conf hr per wk)
Reactions of typical functional groups and introduction to methods of organic qualitative analysis.
- 3-305H (OrCh 61H). HONORS COURSE: ELEMENTARY ORGANIC CHEMISTRY.** (5 cr; prereq 1-005 or 1-032 or equiv, chemistry major or §; 3 lect, 1 lab conf, 1 quiz, and 4 lab hrs per wk)

Important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. Laboratory work includes the preparation of typical substances.

3-306H (OrCh 62H). HONORS COURSE: ELEMENTARY ORGANIC CHEMISTRY. (5 cr; prereq 3-301 or 3-305H, chemistry major or #; 3 lect, 1 lab conf, 1 quiz, and 4 lab hrs per wk)

Important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. Laboratory work includes the preparation of typical substances.

3-307H (OrCh 63H). HONORS COURSE: ELEMENTARY ORGANIC CHEMISTRY. (3 cr; prereq 3-302 or 3-306H, chemistry major or #; 3-303 is prereq to all other advanced courses in organic chemistry; 3 lect per wk)

Lecture course.

3-591, 3-592, 3-593 (PCh 91, 92, 93). SPECIAL TOPICS IN PHYSICAL CHEMISTRY. (2 cr per qtr; primarily for 3rd and 4th yr chemistry majors; prereq 5-504 or 5-521)

Survey of special topics in physical chemistry; emphasis on areas of current research.

3-751 (InCh 122). INORGANIC CHEMISTRY LABORATORY. (2 cr; prereq 5-701 and ¶5-702)

Synthesis and physical measurements of selected compounds. Equilibria and kinetics of selected reaction systems.

3-752, 3-753 (InCh 123, 124). ADVANCED INORGANIC CHEMISTRY LABORATORY. (2 cr; prereq 3-751, #)

Advanced laboratory work in physical and synthetic methods. The specific experiments to be done will be determined by the student in consultation with the instructor. Detailed instructions for a wide variety of experiments will be available.

5-120 (AnCh 111). PHYSICOCHEMICAL METHODS OF ANALYSIS. (3 cr; prereq elementary analytical chemistry and 5-501)

Lecture. Optical and electrochemical methods and methods of separation.

5-121 (AnCh 112). PHYSICOCHEMICAL METHODS OF ANALYSIS. (3 cr; prereq 5-120) Laboratory course. Quantitative application of electrochemical, optical and other physical techniques.

5-122 (AnCh 115). ADVANCED ANALYTICAL CHEMISTRY. (3 cr; prereq elementary analytical chemistry and 5-501)

Equilibria in aqueous and nonaqueous systems.

5-123 (AnCh 117). ELECTROCHEMICAL METHODS OF ANALYSIS. (4 cr; prereq 5-120 or 8-101)

Lecture. Potentiometric, coulometric, polarographic, and other electrical methods.

5-124 (AnCh 118). ELECTROCHEMICAL METHODS OF ANALYSIS. (3 cr; prereq 5-123) Laboratory course.

5-125 (AnCh 119). CHEMICAL INSTRUMENTATION. (4 cr; prereq 5-121 or equiv) Chemical application of operational amplifiers. Instrumental techniques for detection and measurement.

5-301 (OrCh 103). SPECTRAL METHODS OF ORGANIC QUALITATIVE ANALYSIS. (4 cr; prereq 3-304)

Practical application of nuclear magnetic resonance and infrared spectral analysis to solution of organic problems.

5-302 (OrCh 139). ADVANCED ORGANIC CHEMISTRY LABORATORY WORK. (2-5 cr; prereq 3-304; 6-15 hrs lab work ar)

Selected laboratory synthetic problems, which may include original work. Considerable individual instruction.

5-309 (OrCh 109). INTERMEDIATE ORGANIC CHEMISTRY. (3 cr; prereq 3-303 and 5-502 or #)

Introduction to various aspects of physical organic chemistry.

5-342 (OrCh 142). CHEMISTRY OF NATURAL PRODUCTS. (3 cr; prereq 3-303)

Biosynthesis of secondary natural products with emphasis on alkaloids, terpenes, and acetogenins.

5-343 (OrCh 143). CHEMISTRY OF NATURAL PRODUCTS. (3 cr; prereq 3-303; offered 1970-71 and alt yrs)

Steroid hormones, their isolation, proof of structure, synthesis, and action.

Course Offerings and Major Sequences

- 5-344 (OrCh 144). **HETEROCYCLIC COMPOUNDS.** (3 cr; prereq 3-303; offered 1970-71 and alt yrs)
Typical classes of heterocyclic compounds, their chemical and physical properties and uses, synthesis.
- 5-365 (OrCh 165). **ORGANIC QUALITATIVE ANALYSIS.** (4 cr, §3-304; prereq 3-303; 8 lab and 2 conf hrs per wk)
Reactions of typical functional groups and introduction to methods of organic qualitative analysis.
- 5-501 (PCh 101). **PHYSICAL CHEMISTRY.** (4 cr; prereq 1 yr college chemistry, Phys 1-290 or ¶Phys 1-290, or 1-060 with §, Math 1-240 or 1-444)
Basic thermodynamics.
- 5-502 (PCh 102). **PHYSICAL CHEMISTRY.** (4 cr; prereq 1 yr college chemistry, Phys 1-290 or ¶Phys 1-290, or 1-060 with §, Math 1-240 or 1-444)
Atomic and molecular structure.
- 5-503 (PCh 104). **PHYSICAL CHEMISTRY.** (4 cr; prereq 5-501 and 5-502)
Statistical mechanics and reaction kinetics.
- 5-504 (PCh 103). **PHYSICAL CHEMISTRY.** (4 cr; prereq 5-503)
Electrolytic solutions, electrochemistry, theory of liquid and solid states.
- 5-510 (PCh 105). **ANALYSIS OF DATA.** (1 cr; prereq 5-501 or 5-502 or 5-521)
Statistical and numerical treatment of physicochemical measurements.
- 5-511, 5-512 (PCh 106A, B). **LABORATORY.** (1, 2 or 3 cr; prereq 5-510)
Measurement and interpretation of physicochemical properties.
- 5-520/5-521 (PCh 107-108). **ELEMENTARY PHYSICAL CHEMISTRY.** (3-3 cr; prereq 1 yr college chemistry, Phys 1-290 or ¶Phys 1-290 or 1-060 or §, Math 1-240 or 1-444 with §)
Brief general survey. 5-520 covers chemical thermodynamics; 5-521 includes kinetics, statistical mechanics, and molecular structure.
- 5-530 (PCh 114). **THERMODYNAMICS.** (4 cr; prereq minimum of 2 qtrs physical chemistry)
Application to gases, chemical reactions, solutions, phase equilibria.
- 5-531 (PCh 112). **ATOMIC AND MOLECULAR STRUCTURE.** (4 cr; prereq minimum of 2 qtrs of physical chemistry)
Introduction to quantum mechanics with application to structure and bonding.
- 5-532 (PCh 117). **FUNDAMENTALS OF REACTION KINETICS.** (4 cr; prereq minimum of 2 qtrs of physical chemistry)
Analysis of rate measurements, collision theory, transition state theory, chain reactions.
- 5-571/5-572 (PCh 140-141). **MOLECULAR SPECTROSCOPY.** (4-4 cr; prereq 5-502, 5-531 or equiv)
Examination of various types of molecular spectroscopy from standpoint of how structure information is obtained from spectra.
- 5-574 (PCh 143). **MOLECULAR STRUCTURE AND SCATTERING.** (3 cr; prereq 5-571, 5-572)
Discussion of the determination geometrical structure of molecules by x-ray, electron and neutron scattering. The effect of internal molecular motions on the structural determination. Inelastic scattering and molecular energies.
- 5-580 (PCh 127). **PHYSICAL CHEMISTRY OF POLYMERS.** (3 cr; prereq 5-503 or §; offered spring 1970 and alt yrs)
Molecular weight distribution, statistical mechanics of polymer solutions, network polymers, viscosity, light scattering, viscoelastic behavior.
- 5-582 (PCh 129). **POLYMER LABORATORY.** (2 or 3 cr; prereq 5-503 or §; offered spring 1971 and alt yrs)
Osmotic pressure, viscosity and light scattering measurements for the determination of molecular weight; phase equilibria in polymer solutions; elastic and viscoelastic behavior of polymers; polymerization kinetics.
- 5-701 (InCh 103). **INORGANIC CHEMISTRY I.** (3 cr; prereq 5-501 and 5-502)
Atomic structure, structure and bonding in covalent molecules and ionic crystals, thermochemistry of chemical bonding. Applications to chemistry of nontransition elements.
- 5-702 (InCh 104). **INORGANIC CHEMISTRY II.** (3 cr; prereq 5-701)
Chemistry of transition metal and rare earth compounds; nomenclature and stereochemistry; thermodynamics and kinetics of complex ion reactions, crystal field, ligand

field, molecular orbital, and valence bond descriptions of bonding; solution chemistry of transition elements.

5-791, 5-792, 5-793 (InCh 140, 141, 142). **SELECTED TOPICS IN INORGANIC CHEMISTRY.** (2 cr per qtr; prereq 5-702)

Lectures on topics of current interest in inorganic chemistry.

CHILD PSYCHOLOGY (CPsy)

● Major Sequences in the Arts College—

A. *General Sequence*—Intended for students who have a broad interest in the development and behavior of children regardless of whether they plan to take additional work beyond the B.A. degree.

Course Program:

Required Background Courses: Psy 1-001, 1-002, 1-004, and 1-005.

Requirements:

A. CPsy 3-301, 5-303.

B. Psy 3-801.

C. 12 additional cr in Upper Division CPsy courses.

D. A minimum of 12 and a maximum of 18 additional cr in any CPsy courses or in Psy courses chosen from the following: Psy 5-012, 5-013, 5-014, 5-015, 5-018, 5-031, 5-041/5-042†, 5-061, 5-062, 5-101/5-102†, 5-125/5-126†, 5-134, 5-201, 5-604/5-605†.

B. *Honors Sequence:* Intended for high ability students, especially those preparing for graduate work in child psychology or related fields. Requires a 3.00 overall grade point average at the University of Minnesota and a 3.00 grade point average in courses in the major.

Applications for admission may be secured at the Honors Division Office, 115 Johnston Hall. Applications for admission must be approved by the Honors Representative for Child Psychology.

Required Background Courses: Psy 1-001, 1-002, 1-004, and 1-005.

Requirements:

A. CPsy 3-301, 5-303.

B. Psy 3-801.

C. Honors Seminars: CPsy 3-360, 3-361.

D. 6 cr chosen from the following CPsy courses: 5-333, 5-335, 5-337, 5-339, 5-341, 5-343, 5-345.

E. A minimum of 6 and a maximum of 9 additional cr in CPsy courses or in Psy courses chosen from the list given in the General Sequence section.

F. CPsy 5-990 (3 to 9 cr for Honors Thesis).

General Comments:

Majors in child psychology may not receive credit toward graduation for more than 39 Upper Division cr in child psychology, educational psychology, and psychology combined.

For descriptions of courses in psychology see page 195.

Students majoring in child psychology, especially those intending to pursue graduate study, are urged to elect courses in mathematics (especially Math 1-141, 1-142 or 1-441), genetics, anthropology, sociology, and philosophy of science.

The following courses are offered on an Independent Study basis during the academic year *only* and not during either of the summer sessions: CPsy 5-311, 5-313, 5-333, 5-335, 5-339, 5-341, 5-343, 5-345. Independent Study materials may be obtained in Child Development 104.

For a specialized curriculum in nursery school and kindergarten education,

Course Offerings and Major Sequences

see *College of Education Bulletin*. Students interested in pursuing studies leading to certification for nursery school education should contact the Adviser to the Certification Program, Room 184, Child Development.

Inquiries regarding the major in Child Psychology should be directed to the Director of Undergraduate Studies in Child Psychology, Professor John C. Masters. Inquiries about the Honors Program should be directed to the Departmental Honors Representative.

By arrangement with the instructor, students may register for extra credit in all CPsy courses listed below. Opportunities for Directed Study are available through registration in CPsy 1-970, 5-970, and 5-990.

LOWER DIVISION COURSES

1-970 (39H). INDEPENDENT STUDY. (Cr ar; prereq #)
Independent reading, tutorial, or research.

UPPER DIVISION COURSES

CPsy 3-301 is open to sophomores who have an average of at least C in Psy 1-001, 1-002. Other Upper Division courses are open also to sophomores under conditions explained at the beginning of Section II.

3-301f,w,s (80). CHILD PSYCHOLOGY. (3 cr; prereq Psy 1-002) Charlesworth and others
Introduction to science of child behavior; emphasis upon critical review of theories and research.

3-301Hf,w,s (80H). HONORS COURSE: CHILD PSYCHOLOGY. (3 cr; prereq Psy 1-002 and #)

3-360H. HONORS COURSE: JUNIOR SEMINAR. (3 cr, §CPsy 5-323; prereq 3-301 and #)
Hill and others

3-361Hf. HONORS COURSE: SENIOR SEMINAR. (3 cr, §CPsy 5-321; prereq 3-301 and #)
Yonas and others

5-303f,w,s (81). ADOLESCENT PSYCHOLOGY. (3 cr; prereq Psy 1-002) Hill and others
Physical, cognitive, and social development during adolescence.

5-311 (140). BEHAVIOR PROBLEMS. (3 cr; prereq 3-301 or equiv) Sroufe
Types, origin, development, and treatment of behavior difficulties in normal children.

5-313s (142). PSYCHOLOGY OF HANDICAPPED CHILDREN. (3 cr; prereq 3-301 or equiv)
Templin
Research related to sensory, speech, language, physical disabilities of children.

5-315w (143). PROBLEMS OF MENTAL DEFICIENCY. (3 cr; prereq 3-301 or equiv)
Diagnosis, care, training; social and vocational problems.

5-317 (144). PSYCHOLOGY OF GIFTED CHILD. (3 cr; prereq 3-301 or equiv) Staff
Psychology and development of high intellectual ability and of special talents.

5-319s (179). CLINICAL PROCEDURES WITH CHILDREN. (3 cr; primarily for students not majoring in clinical psychology; prereq 12 cr in child psychology, psychology, educational psychology, or sociology)
Survey of methods of clinical psychology emphasizing basic concepts and research problems in clinical work with children.

5-321 (125). EXPERIMENTAL RESEARCH WITH CHILDREN. (3 cr; prereq 3-301 and #)
Yonas
Supervised research experience. Design and conduct of experiments on child behavior in controlled laboratory situations.

5-323 (126). CASE STUDY OF CHILDREN. (3 cr; prereq 3-301 and #) Staff
Supervised intensive study of intellectual, personality, and social development and functioning of individual normal children.

5-325f,w (127). SOCIAL BEHAVIOR OF CHILDREN. (3 cr; prereq 3-301 and #) Carlson and others
Behavior of children in groups; supervised observation and experience in the nursery school.

5-331f,s (100). PROCESSES OF SOCIALIZATION OF CHILDREN. (3 cr; prereq 3-301 or grad) Hartup, Masters, and others

Processes of social learning of children: identification, imitation, reward and punishment, object choice, etc.

- 5-333 (180). **PERSONALITY DEVELOPMENT.** (3 cr; prereq 5-331) Masters
Psychoanalytic and behavior theory formulations and related research literature.
- 5-335 (181). **PEER RELATIONS.** (3 cr; prereq 5-331) Moore
Peer influences; social interactions and social relations; developmental changes.
- 5-339 (189). **PARENT-CHILD RELATIONS.** (3 cr; prereq 5-331)
Discussion of parent-child relations and evaluation of relevant research literature.
- 5-341 (184). **SENSORY AND MOTOR DEVELOPMENT.** (3 cr; prereq 3-301) Yonas
Development of sensory and perceptual processes; simple and complex motor skills.
- 5-343w (186). **COGNITIVE DEVELOPMENT.** (3 cr; prereq 3-301 or equiv) Charlesworth
Development of cognitive processes; theories of intelligence and intellectual functioning; related research literature.
- 5-345f (183). **LANGUAGE DEVELOPMENT.** (3 cr; prereq 3-301) Templin
Development of structure and function of language, methodological problems, speech and language development; language scales; theories.
- 5-970f,w,s (190). **DIRECTED READINGS IN CHILD PSYCHOLOGY.** (Cr ar; prereq #) Staff
Independent reading.
- 5-990f,w,s (190). **RESEARCH IN CHILD PSYCHOLOGY.** (Cr ar; prereq #) Staff
Independent research.

CHINESE

See East Asian Languages

CLASSICS

Classics concentrates on the human experience of ancient Greece and Rome and encompasses prehistoric times as well as the interpenetration between classical culture and the ancient Near East and Minoan-Mycenaean civilization. It embraces Greek and Latin studies in the medieval, renaissance and modern periods. The Greek and Latin literatures and the archaeological and artistic remains offer various approaches to studies that are best called humane, or human: literature, philology, metrics, oral reading, rhetoric and poetics, archaeology, mythology, religion, philosophy, art criticism, daily life.

Most students can become qualified for 3-000 level courses by the end of the freshman year. Sometimes students with three years of high school Latin begin 3-000 level courses as freshmen. Four years or advanced placement is excellent qualification.

No courses are exclusively reserved for majors.

Major programs leading to the B.A. degree are offered in (1) Greek, (2) Latin, and (3) Greek and Latin. There is no major comprised entirely of courses designated as Classics, Classical Philology, or Modern Greek though work in Classics and Classical Philology may form part of a major in Greek or in Latin.

Courses with the designation "Classics" require no knowledge of the languages.

Nonmajors needing a broad general introduction to the field of Classics should consider these courses and, when possible, in combination with work in Greek or Latin.

Required Background Courses

1. For Classics courses—none
2. For Classical Philology courses—same as for Greek and Latin
3. For Greek courses—Grk 1-103 or 1-122 or 3-051 or equiv
4. For Latin courses—Three or four years of high school Latin or Lat 1-004 or 1-103 or 1-122 or 3-051 or equiv. Students with two years

Course Offerings and Major Sequences

of high school Latin or three years of uncertain progress should take Lat 1-003 initially.

● Major Sequences in Arts College

1. Major in Greek—45 cr in Greek courses numbered above 3-000 of which a maximum of 15 cr may be replaced by Upper Division work in courses designated as "Classics" or "Classical Philology" or in closely related courses offered in other departments.
2. Major in Latin—45 cr in Latin courses numbered above 3-000 of which a maximum of 15 cr may be replaced by Upper Division work in courses designated as "Classics" or "Classical Philology" or in closely related courses offered in other departments.
3. Major in Greek and Latin—30 cr in Greek courses numbered above 3-000 and 30 cr in Latin courses numbered 3-000 or above. No replacement is allowed.

Honors Program—In addition to minimum requirements for CLA honors and for one of the three majors in the Classics Department, candidates for honors must meet special requirements. Information may be obtained either in the Honors Division office or in the Department of Classics.

Greek (Grk)

LOWER DIVISION COURSES

1-101/1-102†(1-2). **BEGINNING CLASSICAL GREEK.** (5-5† cr; prereq 1-101 or equiv for 1-102)

To acquaint students with the "real" language from the start. Practice with language structure in context of graded reading materials. Before end of second quarter, students are reading selections from New Testament, Aesop, Xenophon, and Plato. Considerable stress on oral reading and on composition.

1-103 (3). **SELECTIONS FROM GREEK PROSE.** (5 cr; prereq 1-102 or equiv)
Readings mainly in Plato, Xenophon, and Herodotus.

1-111H/1-122H/1-133H (1H-2H-3H). **HONORS COURSE: BEGINNING CLASSICAL GREEK.** (5-5-5 cr; prereq regis in honors division, or high ability as indicated by college entrance records)

UPPER DIVISION COURSES

Upper Division courses are open to freshmen and sophomores who meet the prerequisites.

3-051s/3-052w† (50-51†). **READING CLASSICAL GREEK.** (5-5† cr, §1-101/1-102) McDonald

Intensive beginning course. Previous experience in another foreign language is highly desirable.

3-368 (68). **ORATORY.** (5 cr; prereq 1-103 or Δ)

3-461 (61). **HOMER.** (5 cr; prereq 1-103 or Δ)

3-462 (62). **HERODOTUS.** (5 cr; prereq 1-103 or Δ)

3-463 (63). **ARISTOPHANES.** (5 cr; prereq 1-103 or Δ)

3-464 (64). **XENOPHON.** (5 cr; prereq 1-103 or Δ)

3-465 (65). **SOPHOCLES.** (5 cr; prereq 1-103 or Δ)

3-466 (66). **PLATO.** (5 cr; prereq 1-103 or Δ)

3-467 (67). **EURIPIDES.** (5 cr; prereq 1-103 or Δ)

3-469 (69). **MENANDER.** (5 cr; prereq 1-103 or Δ)

3-471 (71). **DEMOSTHENES.** (5 cr; prereq 1-103 or Δ)

3-472 (72). **HESIOD AND HOMERIC HYMNS.** (5 cr; prereq 1-103 or Δ)

- 3-473 (73). THUCYDIDES. (5 cr; prereq 1-103 or Δ)
- 3-474 (74). AESCHYLUS. (5 cr; prereq 1-103 or Δ)
- 3-475 (75). PHILOSOPHY. (5 cr; prereq 1-103 or Δ)
- 3-476 (76). LYRIC POETRY. (5 cr; prereq 1-103 or Δ)
- 3-477 (77). HELLENISTIC HISTORIOGRAPHY. (5 cr; prereq 1-103 or Δ)
- 3-478 (78). HELLENISTIC POETRY. (5 cr; prereq 1-103 or Δ)
- 3-479 (79). HELLENISTIC PROSE. (5 cr; prereq 1-103 or Δ)
- 3-960H (95H-96H-97H). HONORS TUTORIAL. (5 cr; prereq Δ)
- 5-011 (111). PROSE COMPOSITION. (3 cr; prereq 25 cr in Greek or §; offered when feasible)
- 5-012/5-013 (112-113). PROSE COMPOSITION. (2 cr per qtr; prereq Greek Qualifying Examination for grad majors in wk prior to beginning of classes, fall qtr, and ¶5-264/5-265)
- 5-264, 5-265, 5-266 (164, 165, 166). GRADUATE SURVEY. (4 cr per qtr; prereq ¶5-012) 5-264: Epic and Lyric Poetry. 5-265: Drama. 5-266: Prose.
- 5-371, 5-372, 5-373, 5-374, 5-375, 5-376, 5-377, 5-378, 5-379 (174A,B,C, 176A,B,C, 178A,B,C). GREEK LITERATURE. (3 cr; prereq Δ)
 Authors read vary from term to term and from year to year. One or more appropriate authors are studied in a given course. 5-371: Oratory. 5-372: Tragedy. 5-373: Comedy. 5-374: History. 5-375: Philosophy. 5-376: Religious Texts. 5-377: Epic. 5-378: Lyric. 5-379: Romance.
- 5-601 (100). THE CRAFT AND CONTEXT OF TRANSLATION. (3 cr; prereq 10 Upper Division credits or §)
 Analysis of problems of translating the Greek classics for contemporary readers. Example of translation in previous centuries and today. Practice in translation with attention to literary skill and meaning.
- 5-701/5-702† (101-102). STRUCTURE OF GREEK. 5-5† cr; prereq 1-103 or 3-052 and Latin teaching major or §; recommended for Latin majors) Erickson
 Integrated review of basic Greek structures; experience in application of current linguistic theories to Greek texts; practice in substitution, transformation, and expansion of Greek patterns; special problems in reading Greek.
- 5-794s (194). PROSEMINAR: INTRODUCTION TO CLASSICAL STUDIES. (3 cr, §Lat 5-794; required of all new grad students; prereq grad major or §) Swanson
 Survey of research in classical scholarship, methods and bibliography, textual history and criticism.
- 5-970 (174D, 176D, 178D). DIRECTED STUDY. (1-5 cr; prereq § and Δ)
 Course devised for the independent study program, and designed to permit the student to pursue his interests in special reading and/or study.
- 5-980. DIRECTED TEACHING. (Cr ar; prereq § and Δ)
- 5-990. RESEARCH. (Cr ar)

Modern Greek (MdGk)

LOWER DIVISION COURSES

- 1-101/1-102/1-103 (1-2-3). BEGINNING MODERN GREEK. (5-5-5 cr)
 Initial experience in talking and reading demotic Greek. Pattern-practice drill, simple readings, some grammar.
- 1-104/1-105/1-106 (4-5-6). INTERMEDIATE MODERN GREEK. (3-3-3 cr)

UPPER DIVISION COURSES

Upper Division courses are open to freshmen and sophomores who meet the prerequisites.

- 5-970 (70). DIRECTED STUDIES. (1-5 cr)
 Course devised for the independent study program, and designed to permit the student to pursue his interests in special reading and/or study.
- 5-980. DIRECTED TEACHING. (Cr ar; prereq § and Δ)
- 5-990. RESEARCH. (Cr ar)

Course Offerings and Major Sequences

Latin (Lat)

LOWER DIVISION COURSES

- 1-003 (3R). INTERMEDIATE LATIN. (5 cr; prereq 2 yrs high school Latin or equiv or Δ) Both refresher course and continuation of previous training. Selections from Caesar, Cicero, Virgil, and others. Students with more than 2 years high school Latin who need review may register under P-N only.
- 1-004 (4R). INTERMEDIATE LATIN. (5 cr; prereq 1-003 or equiv or Δ) Continuation of 1-003. Emphasis on Virgil.
- 1-101f, 1-102w, 1-103s (1, 2, 3). BEGINNING LATIN. (5,5,5 cr) Gradual mastery of structure of Latin, for attaining reading knowledge; practice in oral reading and composition.
- 1-111H/1-122H/1-133H (1H-2H-3H). HONORS COURSE: BEGINNING LATIN. (5-5-5 cr; prereq regis in honors division or high ability as indicated by college entrance record)

UPPER DIVISION COURSES

Upper Division courses are open to freshmen and sophomores who meet the prerequisites.

- 3-011 (91). PROSE COMPOSITION. (5 cr; prereq # or Δ)
- 3-051f/3-052w† (50-51). READING LATIN. (5-5† cr, §1-101, 1-102, 1-103; prereq jr) Intensive beginning course. Previous experience in another foreign language is highly desirable.
- 3-461 (61). PLAUTUS AND TERENCE. (5 cr; prereq 1-103 or Δ)
- 3-462 (62). CAESAR. (5 cr; prereq 1-103 or Δ)
- 3-463 (63). LUCRETIUS. (5 cr; prereq 1-103 or Δ)
- 3-464 (64). CICERO: ORATORY. (5 cr; prereq 1-103 or Δ)
- 3-465 (65). CATULLUS. (5 cr; prereq 1-103 or Δ)
- 3-466 (66). SALLUST. (5 cr; prereq 1-103 or Δ)
- 3-467 (67). HORACE: ODES. (5 cr; prereq 1-103 or Δ)
- 3-468 (68). LIVY. (5 cr; prereq 1-103 or Δ)
- 3-469 (69). VIRGIL: AENEID. (5 cr; prereq 1-103 or Δ)
- 3-471 (71). CICERO: PHILOSOPHY AND LETTERS. (5 cr; prereq 1-103 or Δ)
- 3-472 (72). OVID: ELEGIACS. (5 cr; prereq 1-103 or Δ)
- 3-473 (73). TACITUS: AGRICOLA, GERMANIA, HISTORIES. (5 cr; prereq 1-103 or Δ)
- 3-474 (74). VIRGIL: BUCOLICS, GEORGICS. (5 cr; prereq 1-103 or Δ)
- 3-475 (75). PETRONIUS. (5 cr; prereq 1-103 or Δ)
- 3-476 (76). OVID: HEXAMETERS. (5 cr; prereq 1-103 or Δ)
- 3-477 (77). QUINTILIAN. (5 cr; prereq 1-103 or Δ)
- 3-478 (78). SENECA. (5 cr; prereq 1-103 or Δ)
- 3-479 (79). SUETONIUS. (5 cr; prereq 1-103 or Δ)
- 3-960H (95H, 96H, 97H). HONORS TUTORIAL. (5 cr; prereq Δ)
- 5-011 (111). PROSE COMPOSITION. (3 cr; prereq 3-011 or Δ ; offered when feasible)
- 5-012f/5-013s (112-113). PROSE COMPOSITION. (2-2 cr; prereq Latin Qualifying Examination for grad majors in wk prior to beginning of classes in fall qtr and ¶5-264/5-265)
- 5-038 (108). ORAL INTERPRETATION OF CLASSICAL LATIN LITERATURE. (5 cr, §Th 5-831; prereq Th 3-801 or 3-321 or Mus 1-104 or 3-104, 2 yrs Lat or equiv) Sonkowsky
Phonetics, prosody, and oral performance of selected texts in classical Latin.
- 5-235 (135). MEDIEVAL LATIN. (3 cr; prereq #)

Survey of Latin literature from 5th to 12th century; Carolingian and 12th-century Renaissance.

- 5-264/5-265/5-266 (164, 165, 166). **GRADUATE SURVEY.** (4 cr per qtr; prereq ¶5-012)
5-264: Latin Literature of the Republic. 5-265: Latin Literature of the Augustan Age. 5-266: Latin Literature of the Empire.
- 5-371, 5-372, 5-373, 5-374, 5-375, 5-376, 5-377, 5-378, 5-379 (174A,B,C, 176A,B,C, 178A,B,C). **LATIN LITERATURE.** (3 cr; prereq Δ)
Authors read vary from term to term and from year to year. One or more appropriate authors are studied in a given course. 5-371: History. 5-372: Epistles and Essays. 5-373: Oratory. 5-374: Epic and Pastoral Poetry. 5-375: Lyric and Elegiac Poetry. 5-376: Drama. 5-377: Satire. 5-378: Law. 5-379: Religious Texts.
- 5-601 (100). **THE CRAFT AND CONTEXT OF TRANSLATION.** (3 cr; prereq 10 Upper Division credits or $\$$)
Analysis of problems of translating the Latin classics for contemporary readers. Examples of translation in previous centuries and today. Practice in translation with attention to literary skill and meaning.
- 5-701f/5-702w/5-703s† (101-102-103). **STRUCTURE OF LATIN.** (1-2 cr per qtr; prereq sr or grad, 10 Upper Division credits or equiv, $\#$) Erickson
Integrated review of basic Latin structures; experience in application of current linguistic theories to Latin texts; practice in the substitution, transformation, and expansion of Latin patterns; special problems in reading Latin.
- 5-715 (115). **NEW CRITICAL APPROACHES TO CLASSICAL TEXTS.** (3 cr; prereq 15 cr Upper Division Latin and $\#$; recommended for Latin teaching majors) Schork
Designed to bring teachers up to date in significant research, especially in authors read in secondary schools. Recent approaches to Caesar, Cicero, Ovid, Virgil, Horace, Catullus, Livy, Tacitus are described and evaluated.
- 5-741 (141). **LATIN TO ROMANCE.** (3 cr; prereq $\#$)
Emphasis will be placed on the use of existing foreign language skills for facilitating the acquisition of a reading knowledge of a related language. French and Italian will serve as basic model Romance languages.
- 5-794s (194). **PROSEMINAR: INTRODUCTION TO CLASSICAL STUDIES.** (3 cr; $\$$ Grk 5-794; required of all new grad students; prereq grad major or $\#$) Swanson
Survey of fields of research in classical scholarship, methods and bibliography, textual history and criticism.
- 5-970 (174D, 176D, 178D). **DIRECTED STUDY.** (1-5 cr; prereq $\#$ and Δ)
- 5-980. **DIRECTED TEACHING.** (Cr. ar; prereq $\#$ and Δ)
- 5-990. **RESEARCH.** (Cr ar)

Classical Philology (ClPh)

- 3-773 (73G). **HELLENISTIC GREEK.** (3 cr; prereq $\#$)
Koine language used in New Testament the papyri, and other documents from 3rd century B.C. to 2nd century A.D. Attention to general principles of language study.
- 5-715f (115). **INTRODUCTION TO CLASSICAL PHILOLOGY.** (3 cr; prereq $\#$) Swanson
Sounds and forms of the classical languages; principles of linguistic paleontology. This course is essential to all other work in classical philology.
- 5-716 (116G). **HISTORY OF GREEK.** (3 cr; prereq 5-715 or equiv and 2 yrs Greek) Swanson
Semantic and formal development of Greek, from Mycenaean to Romanic; assigned readings, reports; lectures.
- 5-717 (116L). **HISTORY OF LATIN.** (3 cr; prereq 5-715 or equiv or $\#$ and 2 yrs Latin) Swanson
Readings in Old Latin philological texts; introduction to Latin etymology, word-formation, loanwords, historical syntax.
- 5-718 (120G). **GREEK DIALECTS.** (3 cr; prereq 5-715 and 2 yrs Greek or $\#$) Swanson
Introductory survey of epigraphic and literary monuments illustrating ancient Hellenic dialectology. Some consideration of the age-and-area hypotheses and of proto-Greek.
- 5-733 (133L). **VULGAR LATIN.** (3 cr; prereq $\#$; recommended for all students of language)
Development of Latin into Romance languages.
- 5-735 (135). **OSCAN-UMBRIAN.** (3 cr; prereq 5-715 and 5-717 or $\#$) Swanson
Epigraphic and onomastic techniques for the interpretation of languages of early Italy.

Course Offerings and Major Sequences

- 5-970. DIRECTED STUDY. (1-5 cr; prereq # and Δ)
5-980. DIRECTED TEACHING. (Cr ar; prereq # and Δ)
5-990. RESEARCH. (Cr ar)

Classics (Clas)

(Courses for which no knowledge of Greek or Latin is required)

LOWER DIVISION COURSES

- 1-001f, 1-002w, 1-003s (1, 2, 3). INTRODUCTION TO CLASSICAL CIVILIZATION: GREECE. (3,3,3 cr)
1001: World of Homer: Heroic Tradition and Intellectual Awakening. Transition in values and institutions from monolithic society represented in Homeric epic to relatively open society of archaic age. Cultural dynamism and contact with Near East. 1-002: Age of Pericles: City-State and Intellectual Maturity. Golden Age and classical ideal of self-realization in service to the polis. Explosion of creativity in literature, philosophy, art. Ideological struggle between democracy and authoritarianism. Failure of city-state. 1-003: Age of Alexander: Cosmopolitanism and Cultural Fusion. Hellenistic "big government" and rise of individualism. Spread of Greek culture to Near East. New emphases in literature, philosophy, art, and especially in science and religion.
- 1-004f, 1-005w, 1-006s (4, 5, 6). INTRODUCTION TO CLASSICAL CIVILIZATION: ROME. (3,3,3 cr; alternates with 1-001, 1-002, 1-003)
1-004: World of Cato. Changing values and institutions of early Roman agrarian society; rise of republic. Greek and Etruscan influences; clash with Carthage. 1-005: World of Augustus. From anarchy to Pax Romana, and consequences for Roman world. 1-006: World of Constantine. Consolidation and expansion of empire. World of Roman law and rise of Christianity.
- 1-011H, 1-022H, 1-033H, 1-044H, 1-055H, 1-066H (1H, 2H, 3H, 4H, 5H, 6H). HONORS COURSES: INTRODUCTION TO CLASSICAL CIVILIZATION. (4 cr per qtr; prereq regis in honors division or # or Δ)
Students attend lectures in 1-001, 1-002, 1-003, 1-004, 1-005, 1-006 and meet with lecturer one additional period each week.
- 1-042f,w,s (42). GREEK AND ROMAN MYTHOLOGY. (2 cr, §1-142; prereq soph)
Classical myths; acquaints students with stories of gods, demigods, and heroes which are a basic component of European cultural heritage; attention to their artistic, religious, psychological, and anthropological implications.
- 1-046 (46). ANCIENT LITERARY CRITICISM. (3 cr; prereq soph)
Aristotle's Poetics, Horace's Ars Poetica, and Longinus' On the Sublime (in translation); special attention to Alexandrianism; application of principles of criticism in ancient and modern writers (e.g., Sophocles, Catullus, Horace, Racine, Robinson Jeffers), comparison of some ancient and modern literary standards and critical tenets; study of ancient and modern ars poetica (e.g., Horace, Vida, Boileau, Pope, MacLeish).
- 1-048f,w,s (48). TECHNICAL TERMS OF SCIENCE, MEDICINE, AND HUMANITIES. (3 cr; prereq soph)
Presentation in English contexts of Greek and Latin prefixes, suffixes, and roots basic in modern technical vocabularies.
- 1-142 (42A). GREEK AND ROMAN MYTHOLOGY. (3 cr, §1-042; prereq soph)
Similar to 1-042 but with extra readings, lectures, more intensive study.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Archaeology

- 5-101f (100). INTRODUCTION TO PREHISTORIC GREEK ARCHAEOLOGY. (3 cr; prereq jr or #) McDonald
Aims and methods of modern field archaeology; the record of human habitation in the Aegean area from earliest times until the end of the Bronze Age with concentration on the Mycenaean period; the use of archaeological evidence as the basis for historical reconstruction.
- 5-102w (101). ARCHAIC AND CLASSICAL GREEK ART AND ARCHAEOLOGY. (3 cr, §ArtH 5-102; prereq jr or #) Coulson

Architecture, sculpture, pottery, and minor arts from the end of the Bronze Age to the end of the fifth century B.C. Concentration on specific sites such as Athens, Delphi, Olympia. Methods of gathering and interpreting archaeological data.

- 5-103s (102). **HELLENISTIC ART AND ARCHAEOLOGY.** (3 cr, §ArH 5-103; prereq jr or §) Coulson
Greek architecture, sculpture, ceramics, painting, and minor arts from the beginning of the fourth century B.C. to the end of the Hellenistic period. Attention paid to city planning, public buildings, and the topography of such sites as Athens, Olynthos, Corinth, Priene, Pergamon.
- 5-104 (119). **EARLY ROMAN ART AND ARCHAEOLOGY.** (3 cr, §ArH 5-104; prereq jr or §) McNally
Architecture, sculpture, painting, and minor arts of the Roman Republic and early Empire. Brief attention to Etruscans. Methods of gathering and interpreting archaeological data; concentration on selected sites.
- 5-105 (120). **LATER ROMAN ART AND ARCHAEOLOGY.** (3 cr, §ArH 5-105; prereq jr or §) McNally
Architecture, sculpture, painting, and minor arts of the late Roman Empire, third to fifth centuries A.D.
- 5-106 (169). **GREEK PAINTING.** (3 cr, §ArH 5-106; offered alt yrs) McNally
Place of painting in Greek art; particular emphasis on development of figure style.
- 5-107 (190). **PROSEMINAR: CLASSICAL ARCHAEOLOGY.** (3 cr, §ArH 5-107; prereq §)
- 5-124 (124). **FIELD RESEARCH IN ARCHAEOLOGY.** (3-6 cr; prereq 9 cr from 5-101 through 5-105 or equiv and Δ) McDonald
Field excavation, survey and research in archaeological sites in Greece, Turkey, Italy or the Mediterranean area. Intensive training in techniques of excavation and exploration as well as analysis and interpretation of archaeological materials.
- 5-170 (160). **PROBLEMS IN THE AGE OF DIOCLETIAN.** (3 cr, §ArH 5-170; prereq §) McNally

Classical Humanities

- 3-048f,w,s (68). **TECHNICAL TERMS OF SCIENCE, MEDICINE, AND HUMANITIES.** (3 cr, §1-048; prereq jr)
Meets with 1-048, but requires additional work for Upper Division credit.
- 3-071f (71). **GREEK AND HELLENISTIC RELIGIONS: INTRODUCTION TO HISTORY OF ANCIENT RELIGIONS.** (3 cr, §5-071; prereq jr) Kraabel
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.
- 3-072w (72). **HISTORY OF EARLIEST CHRISTIANITY.** (3 cr, §5-072; prereq 3-071) Kraabel
First-century Israel under Roman rule. Jesus of Nazareth. Earliest Christian communities. Jewish Christianity. Mission to gentiles. Paul the apostle. Beginnings of New Testament.
- 3-073s (73). **ROMAN RELIGIONS AND THE EXPANSION OF CHRISTIANITY UNDER THE ROMAN EMPIRE.** (3 cr, §5-073; prereq jr) Kraabel
The Etruscans Republican religion. 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 second and third centuries. Influence of Greco-Roman culture upon emerging Church. Constantine and Julian.
- 3-081f (80). **CLASSICAL EPIC IN TRANSLATION.** (3 cr, §5-081; prereq 8 cr in English literature beyond Engl 1-003 or in foreign literature, or Δ)
Readings of Homer's Iliad, Odyssey, Virgil's Aeneid, with attention to cultural context of epic, the heroic character, epic formulas, and poetic techniques.
- 3-082w (81). **GREEK TRAGEDY IN TRANSLATION (AESCHYLUS, SOPHOCLES, EURIPIDES).** (3 cr, §5-082; prereq 8 cr in English literature beyond Engl 1-003, or foreign literature, or Δ)
Introductory lectures on origin of European drama as distinct literary form, on characteristics of Greek tragedy, and ancient theaters and theatrical conventions. Careful discussion of selected tragedies. Major emphasis on understanding problems posed in relation to cultural patterns of the time.
- 3-083s (82). **ARISTOPHANES AND ROMAN DRAMA IN TRANSLATION (ARISTOPHANES,**

Course Offerings and Major Sequences

MENANDER, PLAUTUS, TERENCE, SENECA). (3 cr, §5-083; prereq same as 3-082)

Introductory material organized as in 3-082, with emphasis on tradition of comedy. Reading of about a dozen comedies and three Senecan tragedies.

3-091f,3-092w,3-093s (91,92,93). CLASSICAL LITERARY TRADITIONS. (3,3,3 cr, §5-091/5-092/5-093; prereq 9 cr in English literature beyond Engl 1-003, or in foreign literature)

Readings from classical literature; lectures on origin of literary forms and their traditions in European literature. Includes: (fall) epic, drama and dramatic prose (dialogue), rhetorical tradition; (winter) pastoral, didactic, choral, and personal lyric poetry; (spring) expository and narrative prose including history, romantic fiction, literary criticism.

5-046 (146). ANCIENT LITERARY CRITICISM. (3 cr, §1-046; prereq jr) Schork
Same class work as 1-046, but with independent reading and research assignments.

5-071f (171). GREEK AND HELLENISTIC RELIGIONS: INTRODUCTION TO THE STUDY OF ANCIENT RELIGIONS. (3 cr, §3-071; prereq #) Kraabel
Meets with 3-071; students do additional work for advanced credit.

5-072w (172). THE HISTORY OF EARLIEST CHRISTIANITY. (3 cr, §3-072; prereq #) Kraabel
Meets with 3-072; students do additional work for advanced credit.

5-073s (173). ROMAN RELIGIONS AND THE EXPANSION OF CHRISTIANITY UNDER THE ROMAN EMPIRE. (3 cr, §3-073; prereq #) Kraabel
Meets with 3-073; students do additional work for advanced credit.

5-081f (180). CLASSICAL EPIC IN TRANSLATION. (3 cr, §3-081) Schork
Meets with 3-081, but advanced independent work in addition to regular class assignments is required.

5-082w (181). GREEK TRAGEDY IN TRANSLATION. (3 cr, §3-082) Sonkowsky
Meets with 3-082, with additional independent work required.

5-083s (182). ARISTOPHANES AND ROMAN DRAMA IN TRANSLATION. (3 cr, §3-083)
Meets with 3-083, but advanced independent work in addition to regular class assignments is required.

5-091f/5-092w/5-093s (191,192,193). CLASSICAL LITERARY TRADITIONS. (3 cr per qtr; prereq grad or #)
Meets with 3-091, 3-092, 3-093 but requires additional work for advanced credit.

5-115 (105). CLASSICAL HUMANITIES PROSEMINAR. (3 cr; prereq #...rec for Latin teaching majors) Schork
Primary objective is to integrate the study of classical literary masterpieces with cultural and historical knowledge.

Spch 5-611 (109). CLASSICAL RHETORIC. (3 cr; prereq Spch 1-101 and Δ) Scott
Greek and Roman theories of speechmaking; historical and philosophic context and influence on education.

5-970 (198,199). DIRECTED STUDY. (1-5 cr; prereq # and Δ)

5-980. DIRECTED TEACHING. (Cr ar; prereq # and Δ)

5-990. RESEARCH. (Cr ar)

COMMUNICATION (Comm)

LOWER DIVISION COURSES

1-001f,w,s/1-002f,w,s/1-003f,w,s (1-2-3). COMMUNICATION. (4-4-4 cr, §Engl 1-001/1-002/1-003, or §Engl 1-311H/1-312H/1-313H; prereq assignment to Category 1, IA or 2 [see Important Note on page 97])

English language and its uses; constant practice in speaking, writing, listening, and reading. 1-001: Language in its social context; meaning, structure, and appropriateness in exposition. 1-002: Language and reasoning; processes and responsibilities of investigation, deliberation, and persuasion. 1-003: Language and public discourse; structure, content, and social implications of utterances through mass media of communication. Instruction individualized by conferences; staff consultant on speech available. Meets B.A. distribution requirement I, Freshman English.

1-001Hf/1-002Hw/1-003Hs (1H-2H-3H). HONORS COURSE: COMMUNICATION. (4-4-4 cr, §Engl 1-001/1-002/1-003 or §Engl 1-311H/1-312H/1-313H; prereq assignment

to Category 1, 1A or 2 [see Important Note on page 97], and Δ)
(Parallel to Comm 1-001/1-002/1-003) More extensive study of major works on language, rhetoric, and public discourse, greater individual participation in classwork.

COMPARATIVE LITERATURE (CLit)

For complete description of the Graduate Program in Comparative Literature, see *Graduate School Bulletin*. The program does not offer an undergraduate major.

COMPOSITION

See English

CRIMINAL JUSTICE STUDIES (CJS)

(Academic Administration)

The Department of Criminal Justice Studies offers an interdisciplinary program designed to permit students to specialize in Criminal Justice Studies. The CJS specialization is earned in conjunction with a two-year Associate in Liberal Arts Degree, or four-year Bachelor of Arts Degree program in the College of Liberal Arts, or a two-year Associate of Arts Degree program in the General College. Students specializing in Criminal Justice Studies should select a related major from existing CLA or General College fields; *there is no major in Criminal Justice Studies*.

All CJS courses are taught on the upper division and graduate level and are open to students who have met the prerequisites specified for each course. Courses are open to sophomores under conditions explained at the beginning of Section II.

To earn a CJS specialization, students must meet the "core requirements" of the program.

Core Requirements (Total — 18 cr)

Area A. The Role of the Police in Urban America
CJS 5-001 and 5-002 or 5-003 (6 cr)

Area B. Law
CJS 5-101 and 5-102 (6 cr)

Area C. Electives
6 additional cr in an approved elective course

Further information is available in the Criminal Justice Studies Office, 167 Social Sciences Building.

UPPER DIVISION COURSES

5-001f,s, 5-002w, 5-003s (101, 102, 103). **THE ROLE OF THE POLICE IN URBAN AMERICA.** (3,3,3 cr; prereq 5-001 for 5-002 and 5-003, or ¶5-001 for 5-003 or ¶) Galvin

5-001: Political settings of American Police Administration—Review of the development of American policing; the definition of its goals, the evolution of its structure; and an analysis of the milieu in which it operates. 5-002: Police Organization and Management, Part I—Principles of police organization and management; functions of police agencies; executive responsibilities; policy formulation and implementation; the management of staff units. 5-003: Police Organization and Management, Part II—The organization and management of police services; theory and practice of patrol administration; role of investigative, juvenile, vice and traffic programs.

5-101f, 5-102s (106, 107). **CRIMINAL LAW AND PROCEDURE.** (4, 2 cr; prereq 5-101 for 5-102) Livermore

Major problems of the criminal law and its administration of modern penal statutes; legislative problems of criminal law revision; juvenile court procedure; selected problems of criminal procedure and constitutional rights.

5-201f (104). **POLICE AND COMMUNITY RELATIONS.** (3 cr) Galvin

Course Offerings and Major Sequences

Critical issues in the police and community relationship; the nature of the relationship, an assessment of the problem; a survey and evaluation of present programs; and an agenda for change.

- 5-202w (105). **COMPARATIVE LAW ENFORCEMENT ADMINISTRATION.** (3 cr) Galvin
Application of the comparative method to the field of law enforcement administration; analysis of law enforcement activities in a variety of governmental settings; the role of the police in social and political change from a cross-cultural and cross-national perspective.

EAST ASIAN LANGUAGES

The department aims to promote in-depth understanding of the East Asian cultural complex, stressing a firm foundation of philological and linguistic competence. B.A. degrees in Chinese and Japanese are awarded.

Chinese (Chin)

Required Background Courses—Chin 1-101/1-102/1-103.

- *Major Sequence in Arts College*—Chin 3-001/3-002/3-003, 5-101/5-102/5-103, 5-201,5-202,5-203, and 6 cr from courses numbered above 5-000.

LOWER DIVISION COURSES

1-101/1-102/1-103 (1-2-3). **BEGINNING CHINESE.** (5-5-5 cr)

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

3-001/3-002/3-003 (51-52-53). **INTERMEDIATE CHINESE.** (5-5-5 cr; prereq 1-103; ¶1-103 with 5-101/5-102/5-103)

3-090H (91H,92H,93H). **HONORS TUTORIAL.** (3 cr per qtr; prereq Δ)

5-021/5-022/5-023 (135-136-137). **ADVANCED CONVERSATION AND COMPOSITION.** (3-3-3 cr; prereq 5-103)

5-101/5-102/5-103 (101-102-103). **BEGINNING LITERARY CHINESE.** (3-3-3 cr; prereq 1-103, ¶1-103 with 3-001/3-002/3-003)

5-111,5-112,5-113 (105,106,107). **INTRODUCTION TO CHINESE LINGUISTICS.** (3,3,3 cr; prereq 5-103 and Ling 3-011 or #)

5-201,5-202,5-203 (110,111,112). **SURVEY OF CHINESE LITERATURE.** (3,3,3 cr; prereq 5-103 plus 9 cr in literature)

5-261/5-262/5-263 (161-162-163). **SIX DYNASTIES LITERARY TEXTS.** (3-3-3 cr; prereq 5-103; offered 1971-72 and alt yrs)

5-271,5-272,5-273 (171,172,173). **POETRY OF T'ANG AND SUNG PERIODS.** (3,3,3 cr; prereq 5-103; offered 1970-71 and alt yrs)

5-274,5-275,5-276 (175,176,177). **LITERATURE OF YUAN, MING, AND CH'ING PERIODS.** (3,3,3 cr; prereq 5-103,5-603 or #)

5-281,5-282,5-283 (181,182,183). **TWENTIETH-CENTURY CHINESE LITERATURE.** (3,3,3 cr; prereq 5-603)

5-284,5-285,5-286 (185,186,187). **HISTORY OF CHINESE LITERARY CRITICISM.** (3,3,3 cr; prereq 5-273 or #)

5-601,5-602,5-603 (121,122,123). **VERNACULAR TEXTS.** (3,3,3 cr; prereq 3-003 and 5-103 or #; offered 1971-72 and alt yrs)

5-604,5-605,5-606 (125,126,127). **CHINESE DOCUMENTS.** (3,3,3 cr; prereq 5-103 or #; offered 1970-71 and alt yrs)

5-701,5-702,5-703 (151,152,153). **STUDIES IN CHINESE LINGUISTICS.** (3,3,3 cr; prereq 5-113 or #)

5-990H (191H,192H,193H). **HONORS COURSE: RESEARCH IN CHINESE LITERATURE.** (3 cr per qtr; prereq 5-103 or #)

Japanese (Jpn)

Required Background Courses—Jpn 1-101/1-102/1-103

- *Major Sequence in Arts College*—Jpn 3-001/3-002/3-003, 5-101/5-102/5-103, 6 cr from 5-201, 5-202, 5-203 and 6 cr selected from other courses numbered above 5-000.

LOWER DIVISION COURSES

1-101/1-102/1-103 (1-2-3). BEGINNING JAPANESE. (5-5-5 cr)

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-001/3-002/3-003 (51-52-53). INTERMEDIATE JAPANESE. (5-5-5 cr; prereq 1-103)
- 3-090H (91H,92H,93H). HONORS COURSE: HONORS TUTORIAL IN READING. (3 cr per qtr; prereq Δ)
Individual reading of texts selected to suit student's level and interest.
- 5-000 (100A,100B,100C). JAPANESE FOR GRADUATE STUDENTS. (3 cr per qtr; prereq Chin 5-103 or #; no grad credit given for majors in Chinese or Japanese)
For readers of Chinese who wish to make use of research materials in Japanese.
- 5-020 (135,136,137). JAPANESE CONVERSATION AND COMPOSITION. (2 cr per qtr; prereq 1-103; ¶3-001/3-002/3-003)
- 5-101/5-102/5-103 (101-102-103). ADVANCED JAPANESE. (3-3-3 cr; prereq 3-003)
- 5-111/5-112/5-113 (105-106-107). STRUCTURE OF JAPANESE. (3-3-3 cr; prereq 5-103 and Ling 3-003 or #)
Phonology, morphology, syntax.
- 5-201,5-202,5-203 (110,111,112). SURVEY OF JAPANESE LITERATURE. (3,3,3 cr; prereq 9 cr in literature and 5-103)
- 5-261/5-262/5-263 (161-162-163). CLASSICAL JAPANESE PROSE. (3-3-3 cr; prereq 5-103)
- 5-271/5-272/5-273 (171-172-173). POETRY OF NARA AND HEIAN PERIODS. (3-3-3 cr; prereq 5-103; offered 1970-71 and alt yrs)
- 5-281/5-282/5-283 (181-182-183). MODERN JAPANESE LITERATURE. (3-3-3 cr; prereq 5-603)
- 5-601/5-602/5-603 (121-122-123). READINGS IN CONTEMPORARY JAPANESE TEXTS. (3-3-3 cr; prereq 5-103)
- 5-990H (191H,192H,193H). HONORS COURSE: RESEARCH IN JAPANESE LITERATURE. (3 cr per qtr; prereq 5-103 or #)
- Hist 5-471,5-472 (Hist 148Fw, 149Fs). HISTORY OF JAPAN. (3,3 cr) Marshall

Oriental (Ortl)**UPPER DIVISION COURSES**

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-501 (76). ASIAN CIVILIZATION: CHINA. (3 cr; prereq soph with #; jr)
- 3-502 (77). ASIAN CIVILIZATION: JAPAN. (3 cr; prereq soph with #; jr)
- 3-980 (80). DIRECTED TEACHING. (1-3 cr per qtr; prereq soph with #; jr)

Thai**LOWER DIVISION COURSES**

1-101/1-102/1-103 (1-2-3). BEGINNING THAI. (5-5-5 cr)

Tibetan (Tib)

UPPER DIVISION COURSES

- 5-101/5-102/5-103 (101-102-103). **BEGINNING TIBETAN.** (3-3-3 cr; open to majors in East and South Asian Languages and students in linguistics)
- 5-121/5-122/5-123 (121-122-123). **INTERMEDIATE TIBETAN.** (3-3-3 cr; prereq 5-103)

ECOLOGY AND BEHAVIORAL BIOLOGY (EBB)

(College of Biological Sciences)

LOWER DIVISION COURSES

- 1-003 (10). **THE FINAL CRISIS.** (3 cr; television course offered through General Extension Division of the University of Minnesota) Brook
The ecological crisis, its crucial implications for man's future existence, and the current critical necessity for the development of an ecological awareness.

UPPER DIVISION COURSES

- 3-001w (50). **INTRODUCTION TO ECOLOGY.** (3 cr; open to jrs and above, but not to biology majors) Brook
Interrelationships between environmental influences and plants and animals, including man: population growth and regulation; nature, organization, and development of ecological systems. Role of man in biosphere.
- 3-002 (51). **ECOLOGY AND MAN.** (3 cr; prereq 3-001, Biol 3-041 or #) Megard
Man's impact on and his exploitation of the environment. Stresses human limits in terms of population, natural resources and waste disposal.
- 3-011 (82). **FIELD BIOLOGY.** (1 cr; prereq Biol 3-011/3-012)
Field trips stressing local habitat types and instruments used in ecological research.
- Biol 3-041 (Biol 80). **ECOLOGY.** (See biology listings.)
- 3-990 (99). **RESEARCH PROBLEMS.** (1-6 cr; prereq #)
Individual research for undergraduate majors in biology.
- 5-014 (130). **ECOLOGY OF PLANT COMMUNITIES.** (5 cr; prereq Biol 3-041) Cushing
Description, classification and mapping of plant communities, and theory of their structure, interrelationships, development, and stability. Field trips to local vegetation types; analysis of quantitative data.
- 5-015w (131). **STRUCTURE AND FUNCTION OF ECOSYSTEMS.** (5 cr; prereq Biol 3-041, 3-045, introductory chemistry and physics, or #)
Energy exchange and cycles of water and nutrients, in relation to biological productivity and development and regulation of ecosystems.
- 5-016s (133). **ECOLOGICAL PLANT GEOGRAPHY.** (3 or 5 cr; prereq Biol 3-041 or #; offered 1971-72 and alt yrs) Lawrence, Cushing
Ecological principles of plant distribution and landscape analysis, vegetation regions of North America, interpretation of regional vegetation patterns.
- 5-017s (137). **ECOLOGICAL LIFE HISTORIES OF PLANTS.** (5 cr; prereq Biol 3-012, 3-041, 3-045, Bot 3-132 and #; offered 1970-71 and alt yrs) Lawrence
Influence of environmental factors on each developmental stage of life cycle under natural conditions. Individual species assigned for study at Cedar Creek natural history area. Weekly half-day field trips.
- 5-018 (138). **WETLAND ECOLOGY.** (5 cr; prereq 15 cr in biological subjects, introductory chemistry or #...Biol 3-041 recommended) Gorham
Nature, origin, and development of lake, marsh, swamp, and bog ecosystems; environmental control and productivity.
- 5-019 (139). **PALEOECOLOGY.** (3 cr; prereq 8 cr in geology, Biol 3-041 or #; offered 1971-72 and alt yrs) Cushing
Nature of fossil evidence; problems and techniques for reconstruction of past habitats, populations, communities, and ecosystems. Examples from various parts of geologic column and from various groups of organisms.
- 5-022w (110). **ANIMAL BEHAVIOR.** (3 cr; prereq #) McKinney
Introduction to ethology, the causation, development, evolution, and adaptive significance of behavior.

- 5-023w (111). BEHAVIORAL ADAPTATIONS.** (3 cr; prereq Biol 3-041 and Ecol 5-022 or equiv and §) McKinney
Lectures and discussions on current problems in areas of overlap between ethology, ecology and evolution with special emphasis on social systems, spacing mechanisms and communication.
- 5-024 (124). ENVIRONMENTAL MEASUREMENT AND ANALYSIS I.** (3 cr; prereq 1 yr physics, 1 yr calculus) Maxwell
The use of the continuity principle in relating meteorological parameters to biologic systems and the modeling of environmental interactions with organisms.
- 5-025 (125). ENVIRONMENTAL MEASUREMENT AND ANALYSIS II.** (4 cr; prereq Ecol 5-024) Maxwell
The elements of a measuring system and the determination of meteorological parameters to study the physical relationships between an organism and its environment.
- 5-026 (126). ENVIRONMENTAL MEASUREMENT AND ANALYSIS III.** (2-5 cr; prereq Ecol 5-025 or §) Maxwell
The principles and techniques presented in 5-024 and 5-025 are applied to habitats found in the Itasca region.
- 5-027 (127). HUMAN POPULATION, ENVIRONMENT AND RESOURCES.** (3 cr) Serrin
Discussion of local, national and world demographic problems. Impact of population on environment, resources and resource allocation; ecological implications. Birth and death control programs. Demographic models; optimal rate predictions.
- 5-812su (119). AQUATIC ECOLOGY.** (5 cr; prereq 15 cr including Biol 1-002 or 3-011; offered in Lake Itasca sessions) Staff
Conditions for life in water and distribution of aquatic animals.
- 5-813 (120). ADVANCED LIMNOLOGY.** (5 cr; limited to 15 students; prereq Ecol 5-812 or equiv; offered in Lake Itasca sessions) Megard
Current topics in limnological research with emphasis on the analysis of aquatic productivity. Lectures, laboratory, and field work.
- 5-814su (135). COMMUNITY STRUCTURE AND FUNCTION.** (5 cr; prereq Biol 3-041 or §) Staff
Communities represented in Itasca Park and vicinity and their dynamic relationships. Also, the relationships of local communities to the flora and fauna of Minnesota as a whole. Use of modern methods of community analysis and measurement of environmental factors.
- 5-815su (136). FIELD ETHOLOGY.** (5 cr; limited to 15 students; prereq Biol 3-011 or equiv ...Zool 5-076/5-077 or 5-834 recommended; offered in Lake Itasca sessions) Oring
Studies of behavioral evolution, motivation, and ontogeny stressing the relationship between environment and behavior by using field research techniques.
- 5-816su (152). ECOLOGY OF FRESHWATER ALGAE.** (5 cr; prereq Bot 5-231 or 5-811 or §; offered in Lake Itasca biology sessions) Brook
Aspects of algal ecology in lakes and ponds; phytoplankton, benthos, and periphyton; also in streams, bogs, soils, and other terrestrial habitats.
- 5-817su (162). VERTEBRATE ECOLOGY.** (5 cr, §Ent 162; prereq Biol 3-041 or equiv; offered in Lake Itasca biology sessions) Staff
Field work on populations and their relationships to local environments; habitat analysis and ecological research methods. Individual and team research projects, field trips, and lectures.
- 5-818su (163). QUANTITATIVE ECOLOGY.** (5 cr; limited to 15 students; prereq 9 cr in ecology; offered in Lake Itasca sessions) Staff
Lectures, discussions, and field studies on populations, communities, and ecosystems. Emphasis on methods of sampling and measuring ecological parameters and on data analysis and interpretation.

ECONOMICS (Econ)

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 those contemplating careers in business, law, government or teaching. While not providing specialized vocational skills, it does familiarize the student with the basic features of the economic environment.

Course Offerings and Major Sequences

For more senior positions in government and for college teaching, graduate work is essential. Prospective public school teachers should consult the *College of Education Bulletin*.

Courses with few or no prerequisites which may specially interest non-majors are:

A. Econ 1-001/1-002, 1-014/1-015, 1-041, 3-001/3-002

B. Econ 5-021, 5-301, 5-307, 5-311, 5-313, 5-315, 5-401, 3-970; all having prereq 1-002

The advisers for majors and pre-majors are the department's Director of Undergraduate Studies and an assistant. To ascertain their office hours come to 1035 BA or call 373-3690. Students should feel free to bring suggestions or complaints to the Director of Undergraduate Studies.

The department maintains a "tutorial" service for students who need special assistance.

● Major Sequence for B.A.—

Required Background Courses:

Econ 1-001/1-002 or corresponding Honors sections or equiv, and Math 1-111 or equiv.

Stronger students who may later take graduate work are advised to enter the calculus sequence, Math 1-442/1-443/1-444, though this could be postponed until junior or senior year.

Upper Division Requirements—Complete a total of 33 cr in Upper Division courses consisting of:

A. Econ 3-101 or 3-101H or 3-104 or 5-151

B. Econ 3-102 or 3-102H or 3-105 or 5-152

C. Econ 3-131 or 3-131H

Students are urged to take 3-101 in the first quarter of their Upper Division work, and to take 3-102 and 3-131 in the following quarter.

D. Additional Upper Division economics courses, subject to conditions 1 through 5 below:

1. Econ 3-001/3-002, 5-301, 5-307, 5-311, 5-401, 5-701 are not open to economics majors.

2. Not more than 6 cr may be taken from the following courses: Econ 3-041, 3-970, 5-970, and extra credit work in any course.

3. As many as 3 courses from the following statistics courses can be applied toward the economic major. This is recommended for students who may do graduate work in economics.

Quantitative Analysis 3-052/3-053/3-054

Statistics 3-091, 5-101, 5-121/5-122/5-123

Public Health 5-450/5-452/5-454, 5-451/5-453/5-455

4. Honors sections are recommended for Honors students and superior students who prefer small classes, and usually carry one extra credit.

5. Superior undergraduates, especially Honors students, may find the following graduate level courses valuable. Undergraduates will receive 5 credits per course. Consult your adviser before registering.

5-161/5-162/5-163, 5-661, 5-164/5-165/5-166, 5-171/5-172, 5-461/5-462/5-463, 5-561/5-562, 5-671/5-672/5-673, 5-761/5-762, 5-861/5-862/5-863, and any course having a prerequisite of 5-161 or 5-164.

For further details pick up pamphlet, *Undergraduate Programs in Economics*, at 1035 Business Administration.

Honors Program—This is specially recommended for students who may do graduate work in economics. For details inquire at CLA Honors Division office or at 1035 Business Administration

LOWER DIVISION COURSES

- 1-001f,w,s/1-002f,w,s (1,2). **PRINCIPLES OF ECONOMICS.** (3-3 cr [at discretion of dept may be offered for 4 cr each qtr], §1-004, §1-005, §1-015, §3-001, §3-002; prereq 3rd qtr fr)
- 1-001: Macroeconomics: National income, money and banking, business cycles, international trade. 1-002: Microeconomics: Demand and supply, competition and monopoly, the distribution of income.
- 1-001Hf,w,s (1H). **HONORS COURSE: PRINCIPLES OF MACROECONOMICS.** (4 cr [at discretion of dept may be offered for 5 cr], §1-004, §1-015, §3-001, §3-002; prereq 3rd qtr fr...GPA of 3.00 recommended)
Honors section of 1-001.
- 1-002Hf,w,s (2H). **HONORS COURSE: PRINCIPLES OF MICROECONOMICS.** (4 cr [at discretion of dept may be offered for 5 cr], §1-005, §1-015, §3-001, §3-002; prereq 1-001...GPA of 3.00 recommended)
Honors section of 1-002.
- 1-004f,w/1-005w,s (1T,2T). **PRINCIPLES OF ECONOMICS.** (3-3 cr; prereq Math 1-142 or 1-442 or equiv; substitutes for 1-001, 1-002 for students with some background in mathematics)
- 1-014w (B). **SCOPE, METHODS, AND APPLICATION OF ECONOMICS.** (3 cr [no cr if taken after 1-001, 1-002 or equiv])
Overview of economics. Different members of economics profession explain type of work done in their special fields. Types of problems for which study of economics is useful.
- 1-015s (C). **INTRODUCTION TO ECONOMIC ANALYSIS.** (3 cr, §1-002, §1-004, §1-005; prereq 1-014; may substitute for Econ 1-002 as prereq for intermediate courses in economics [except for majors in business administration])
Elementary training in analytical approach; special applications to production and different market structures in American economy.
- 1-041 (20). **CONSUMER ECONOMICS.** (3 cr)
Application of economic principles to major decisions of consumers. How to use income most effectively. Use of credit. Saving; insurance principles; decisions to purchase a house. Sources of consumer information; product testing agencies; government efforts to protect consumers.
- 1-231 (40). **DECISION MAKING AND SCIENTIFIC INFERENCE.** (3 cr; prereq Math 1-111 or #)
Problems of decision making under uncertainty; applications to economics, statistical inference, and games of strategy.

UPPER DIVISION COURSES

- 3-001f,3-002w (50A-B). **ECONOMIC PROBLEMS OF AMERICAN ECONOMY.** (3,3 cr, §1-001, §1-002, §1-004, §1-005, §1-014, §1-015; not available to econ majors for Upper Division credit; offered 1971-72 and alt yrs)
Supplies need for general education in economics for average citizen.
- 3-021 (80). **SURVEY OF ECONOMIC IDEAS.** (3 cr; prereq 1-002 or equiv)
Economic thinking from Adam Smith to J. M. Keynes; emphasis on impact of industrial revolution and business cycle on formation of theory.
- 3-041 (70). **CURRENT ISSUES WORKSHOP.** (3 cr; prereq 3-101 or A grade in 1-002 or #)
Each quarter one or more topics of current interest will be analyzed using the tools and viewpoint of economic theory. Course will emphasize discussion rather than lectures, and active student participation.
- 3-081H (90H). **HONORS COURSE: UNDERGRADUATE SEMINAR IN ECONOMICS.** (4 cr; prereq 3-102, 3-131, or equiv, econ major, sr, honors degree candidate, or #)
Helps students integrate and apply material learned during their economics training.

Course Offerings and Major Sequences

- 3-082H (91H). HONORS COURSE: RESEARCH WORKSHOP.** (3 cr; prereq 3-081H or #)
Students present to workshop either independent or joint research projects.
- 5-021 (170). ECONOMICS, ETHICS, AND ECONOMIC PHILOSOPHY.** (3 cr; prereq 1-002 or equiv; offered when feasible)
Literature and issues it raises; relation of ethics to economic organization, practice, and policy. Different economic philosophies; elements involved in formulation of economic philosophy.
- 5-031, 5-032, 5-033 (150A-B-C). CURRENT ECONOMIC ISSUES.** (3,3,3 cr [with # course may be taken more than once]; prereq 3-101, 3-102 or equiv or #; offered when feasible)
Current controversies over economic policy and problems that underlie controversies. Selected topics.
- 5-041 (120). ECONOMICS OF CONSUMPTION.** (3 cr; prereq 3-102, 3-131)
Theories and research relating to savings and consumption; concept of saving; consumption function literature; forecasting of consumer spending; role of buying plans.

Economic Theory

- 3-101f,w,s (65). MICROECONOMIC THEORY.** (3 cr; prereq 1-002 or #)
Behavior of households, firms and industries under competitive and monopolistic conditions; factors influencing production, price, and advertising decisions.
- 3-101H (65H). HONORS COURSE: MICROECONOMIC THEORY.** (4 cr; prereq 1-002 or equiv or #...GPA of 3.00 or better recommended)
Honors section of 3-101.
- 3-104 (65T). MICROECONOMIC THEORY.** (4 cr; prereq ¶Math 1-443 or #)
A substitute for 3-101 for student with some background in mathematics.
- 3-102f,w,s (66). MACROECONOMIC THEORY.** (3 cr; prereq 3-101 or #)
Determinants of national income, employment, and price level; aggregate consumption and investment.
- 3-102H (66H). HONORS COURSE: MACROECONOMIC THEORY.** (4 cr; prereq 3-101 or equiv or #...GPA of 3.00 or better recommended)
Honors Section of 3-102.
- 3-105 (66T). MACROECONOMIC THEORY.** (4 cr; prereq 3-101 or 3-104, ¶Math 1-443 or #)
Substitute for 3-102 for students with some background in mathematics.
- 3-131f,w,s (75). WELFARE ECONOMICS.** (3 cr; prereq 3-101 or equiv)
Introduction to welfare economics. Economic efficiency and the conditions necessary to sustain it. Conflicts between the efficiency and income distribution goals. How market structure and public policies increase or decrease efficiency.
- 3-131H (75H). HONORS COURSE: WELFARE ECONOMICS.** (4 cr; prereq 3-101 or equiv or #...GPA of 3.00 or better recommended)
Honors section of 3-131.
- 5-111 (101A). FOUNDATIONS OF MATHEMATICS FOR SOCIAL SCIENTISTS.** (3 cr; prereq Math 1-111 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.
- 5-131 (115). SYSTEMS AND PROGRAM ANALYSIS.** (3 cr; prereq 3-131 or equiv)
Application of economic analysis to projects, systems and sub-systems. Criteria for optimization, scope of analysis, measurement of benefits and costs, time, discounting, and sensitivity analysis under uncertainty. Role and usefulness of analysis in decision making. Case studies from private and public sectors.
- 5-141 (157). BUSINESS CYCLES.** (3 cr; prereq 3-102, 3-751 or equiv)
Ups and downs of business; causes and statistical data; relationship of cycles to economic growth. Methods of forecasting. Proposals for economic stabilization.
- 5-151f,s (165). ELEMENTS OF ECONOMIC ANALYSIS: FIRM AND HOUSEHOLD.** (3 cr, §3-101; prereq grad or #)
Decision making by households and firms under conditions of competition, monopoly and monopolistic competition.
- 5-152f,s (166). ELEMENTS OF ECONOMIC ANALYSIS: INCOME AND EMPLOYMENT.** (3 cr, §3-102; prereq grad or #)
Determinants of national income, employment and price level; aggregate consumption, investment, and asset holding.

5-161f,w/5-162w,s/5-163s,f (185A-B-C). MICROECONOMIC THEORY. (5-5-5 cr for undergrads...3-3-3 cr for grads; prereq 5-151, Math 1-442 or #...Math 3-445 recommended)

Decision problems faced by the household and firm; theories of choice for solving those problems under conditions of certainty and uncertainty. Partial equilibrium analysis, under conditions of competition and monopoly. General equilibrium analysis, including linear models. Welfare economics: Pareto optimality, economic efficiency of alternative market structures, social welfare functions. Dynamics: stability of markets, introduction to capital theory, selected topics.

5-164f,w/5-165w,s/5-166s,f (176A-B-C). MACROECONOMIC THEORY. (5-5-5 cr for undergrads...3-3-3 cr for grads; prereq 3-102, Math 1-442 or #)

General equilibrium models for determining real 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 together with mathematical techniques required for their analysis. Weekly problem workshops mandatory.

5-171/5-172 (180A-B). HISTORY OF ECONOMIC THOUGHT. (5-5 cr for undergrads...3-3 cr for grads; prereq 5-162, 5-164)

5-171: Classical economists, Marx, beginnings of neoclassical economics. 5-172: Development of neoclassical economics through 1930's. Origins of macro-theory.

5-181/5-182/5-183 (195A-B-C). DECISION-MAKING AND OPERATIONS ANALYSIS. (3-3-3 cr; prereq 5-151, Math 1-250 or equiv or #)

Applications of various mathematical techniques of maximization and minimization to business problems. Calculus, linear programming, nonlinear programming, and dynamic programming methods applied to production, inventory, transportation, selling, and financial problems. Electronic computer programs used where feasible.

Econometrics

3-251 INTRODUCTION TO ECONOMETRICS. (3 cr; prereq 3-102, Math 1-142 or 1-442, Stat 1-051 or equiv)

Least-squares estimation in two- and three-variable linear model. Significance tests and confidence intervals. Autocorrelation and multicollinearity. Distributed lags. Simultaneous equation systems. Identification, least-squares bias. Two-stage least squares. Econometric case studies.

5-261/5-262 (131A-B). APPLIED ECONOMETRICS. (3-3 cr; prereq 3-102, Stat 5-123, Math 3-142 or equiv)

Conceptual basis of econometric theory (omitting many proofs of theorems) with application to economic models. Lab section required.

Economic Development, Comparative Systems, Area Studies

3-351 (63). ECONOMICS OF SCIENCE AND TECHNOLOGY. (3 cr; prereq 3-102 or equiv)

Relations of economic progress and growth of science and technology. Includes: effect of invention, discovery, and education on economic growth; effect of demand, market structure, and size of firm on rate of invention and adoption of new products and processes; private and social returns from research and education; associated problems of public policy.

5-301 (103). ECONOMIC DEVELOPMENT. (3 cr, §5-331; not available to econ majors; prereq 1-002 or equiv)

Problems of economic growth in low income countries. Theory of aggregate and per capita income growth. Role of population growth, productivity increases and capital formation. Allocation of resources between consumption and investment and among sectors. International assistance and trade.

5-307 (160). COMPARATIVE ECONOMIC SYSTEMS. (3 cr, §5-331; not available to econ majors; prereq 1-002 or equiv)

Functions of all economic systems: the market economy, liberal socialism, centrally planned economy. Analysis of American and Soviet economies.

5-311 (174). ECONOMY OF LATIN AMERICA. (3 cr, §5-341; not available to econ majors; prereq 1-002 or equiv)

Analysis of current economics problems: exchange controls, land reform, inflation, and fluctuation in prices of basic commodities. Evaluation of foreign aid proposals.

5-313 (164). ECONOMY OF U.S.S.R. (3 cr; prereq 1-002 or equiv)

Development of economic organization of state, planning and control of use of resources, and distribution of product. Performance of economy in agriculture and industry

Course Offerings and Major Sequences

- under 5-year plans. Internal and external economic policy. Public finance, income distribution, and economic incentives under Soviet system.
- 5-315 (184). ECONOMICS OF ASIA.** (3 cr; prereq 1-002 or equiv)
Economic development following contact with Western civilization. Some current problems; population, growth, capital formation, international economic relations, choice between types of economic organization.
- 5-331 (103A). ECONOMIC DEVELOPMENT.** (3 cr, §5-301; prereq 3-102 or equiv or #)
Problems of economic growth in low income countries. Theory of aggregate and per capita income growth. Role of population growth, productivity increases and capital formation. Allocation of resources between consumption and investment and between sectors. International assistance and trade.
- 5-337 (160A). COMPARATIVE ECONOMIC SYSTEMS.** (3 cr, §5-307; prereq 3-102 or equiv or #)
Functions of all economic systems: the market economy, liberal socialism, centrally planned economy. Analysis of American and Soviet economies.
- 5-341 (174A). ECONOMY OF LATIN AMERICA.** (3 cr, §5-311; prereq 3-102 or equiv or #)
Analysis of current economics problems; exchange controls, land reform, inflation, and fluctuation in prices of basic commodities. Evaluation of foreign aid proposals.
- 5-347/5-348 (143A-B). DEVELOPMENT OF AMERICAN ECONOMY.** (3-3 cr; prereq 3-102 or equiv or #)
Applications of economic theory and empirical methods to topics in American economic development, particularly during 19th-century period of accelerated growth and industrialization.

International Economics

- 5-401 (104). INTERNATIONAL ECONOMICS.** (3 cr, §5-431; not available to econ majors; prereq 1-002 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 rate changes, international monetary reform.
- 5-411 (134). U.S. FOREIGN ECONOMIC POLICY.** (3 cr; prereq 5-401 or equiv; offered 1970-71 and alt yrs)
Development of U.S. foreign economic policy in 20th century and current issues of U.S. foreign economic policy.
- 5-431 (104A). INTERNATIONAL ECONOMICS.** (3 cr, §5-401; prereq 3-102 or equiv or #)
The case for free trade. Effects of tariffs; protection of infant industries; common markets. Balancing international receipts and payments, the role of exchange rate changes, international monetary reform.
- 5-461f/5-462w/4-463s (114A-B-C). INTERNATIONAL TRADE AND PAYMENTS THEORY.** (5-5-5 cr for undergrads...3-3-3 cr for grads; prereq 3-102, 3-131, Math 1-442, # for undergrads...5-162, 5-164 for grads)
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.

Labor Economics

- 3-551 (62). LABOR ECONOMICS.** (3 cr; prereq 3-102 or equiv)
Role of labor in economy; labor as factor of production, population and labor force; economics of labor markets; labor market institutions; theories of wages and employment; unions and collective bargaining; current wage and employment practices; public policy.
- 5-531 (152). ECONOMIC HISTORY OF LABOR.** (3 cr; prereq 3-551 or equiv or #)
Historical analysis of labor in American economic development: labor force characteristics, wage level and structure, migration. Origins and growth of labor organizations and other labor market institutions. Economic and social consequences of these developments.
- 5-534 (182). ECONOMIC SECURITY.** (3 cr; prereq 3-551 or equiv or #)
Public and private approaches to problems of economic insecurity. Details of, and economic and social implications of private and public programs. Emphasis on economics of income and employment maintenance and stabilization rather than upon legal or administrative aspects of policy.
- 5-537 (172). LABOR MARKET BEHAVIOR AND REGULATION.** (3 cr; prereq 3-551 or equiv or #)

Public and private rules and policies directed at regulation of employer-employee-union relations and labor market behavior. Settlement of disputes. Control of employer and union self-help techniques. Emphasis on economics of control, rather than upon legal or administrative aspects of policy.

- 5-541 (102). CONTEMPORARY LABOR ISSUES.** (3 cr; prereq 3-551 or equiv or §)
Analysis of important labor problem areas. Current issues examined in light of their broader economic, legal, political, and social implications.
- 5-561/5-562 (192A-B). WAGES AND EMPLOYMENT.** (5-5 cr for undergrads...3-3 cr for grads; prereq 3-102, 3-131, Math 1-442 and § for undergrads...5-161, 5-164 for grads)
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 impacts of the union.

Industrial Organization

- 3-651f,w,s (69). GOVERNMENT REGULATION OF BUSINESS.** (3 cr; prereq 3-101, 3-131 recommended or §)
Economic aspects of public policy affecting market process. Relations between market structure and economic efficiency and welfare; economic origins of monopoly and other business limitations on free competition; purposes and effect of antitrust laws and laws relating to unfair business practices.
- 3-651H (69H). HONORS COURSE: GOVERNMENT REGULATION OF BUSINESS.** (4 cr; prereq 3-131 or equiv...GPA of 3.00 or better recommended)
Honors section of 3-651.
- 5-631 (129). SPECIAL TOPICS: INDUSTRIAL ORGANIZATION AND PUBLIC POLICY.** (3 cr; not open to grad econ majors; prereq 3-651 or §)
- 5-661 (140). ECONOMICS OF LOCATION.** (5 cr for undergrads...3 cr for grads; prereq 3-131, Math 1-442 and § for undergrads...5-161 for grads)
Analysis of location of economic activity in relation to resources and markets. Effects of changes in transport costs. Problems associated with urban growth.
- 5-671f/5-672w/5-673s (179A-B-C). INDUSTRIAL ORGANIZATION AND GOVERNMENT REGULATION.** (5-5-5 cr for undergrads...3-3-3 cr for grads; prereq 3-131, Math 1-442 and § for undergrads...5-161 for grads)
Profit maximization and other theories of business behavior; profits, assets and barriers to entry; concentration and other aspects of industry structure; scale economies and other determinants of industry structure; performance consequences of alternative industry structures; analysis of business pricing practices; determinants of invention and innovation; economic analysis of anti-trust, conservation, and direct regulatory activities of federal, state, and local governments.

Monetary Economics

- 3-751f,w,s (67). MONEY AND BANKING.** (3 cr, §5-701; prereq 3-102 or equiv)
Historical development, present pattern, and economic role of financial institutions: special emphasis on commercial banks, money supply, and Federal Reserve System.
- 3-751H (67H). HONORS COURSE: MONEY AND BANKING.** (4 cr; prereq 3-102 or equiv... GPA of 3.00 or better recommended)
Honors section of 3-751.
- 5-701 (107). MONEY, BANKING, AND MONETARY POLICY.** (3 cr, §3-751; not available to econ majors; prereq 1-002 or equiv or §)
Economic role of financial institutions with special emphasis on commercial banks, the money supply, and monetary policy.
- 5-761/5-762 (177A-B). MONETARY ECONOMICS.** (5-5 cr for undergrads...3-3 cr for grads; prereq 3-102, 3-131, Math 1-442, § for undergrads...5-162, 5-164, ¶5-165 for grads)
Monetary theory, determinants of value of money. Principal problems of monetary policy.

Public Finance

- 3-851f,w,s (68). ELEMENTS OF PUBLIC FINANCE.** (3 cr; prereq 3-102 or equiv)
Survey of government expenditures, budgeting, fiscal policy, debts, and taxes in terms of fiscal institutions, impact on business and the economy, and policy issues.
- 3-851H (68H). HONORS COURSE: ELEMENTS OF PUBLIC FINANCE.** (4 cr; prereq 3-102,

Course Offerings and Major Sequences

3-131 or equiv...GPA of 3.00 or better recommended)
Honors section of 3-851.

- 5-811 (188). STATE AND LOCAL FINANCE.** (3 cr; prereq 3-851 or equiv)
Main problems of state and local finance and proposed solutions; interstate comparisons and coordination of practices and policies.
- 5-831 (128). SPECIAL TOPICS; PUBLIC FINANCE.** (3 cr; not open to grad econ majors; prereq 3-851 or #; offered when feasible)
- 5-861f/5-862w/5-863s (178A-B-C). PUBLIC FINANCE.** (5-5-5 cr for undergrads...3-3-3 cr for grads; prereq 3-102, 3-131, Math 1-442 or # for undergrads...5-162, 5-165 for grads)
Theory of economic policy. Economic effects of taxes, public debt and public expenditure on resource allocation, employment and income distribution (including techniques of cost benefit analysis). Current problems of fiscal policy and taxation.

Directed Studies

- 3-970 (60). DIRECTED STUDIES.** (Cr ar; prereq #)
Areas useful to individual programs and objectives not available in regular course offerings.
- 5-970 (190). DIRECTED STUDIES.** (Cr ar; prereq #)
Areas useful to individual programs and objectives not available in regular course offerings.

EDUCATION

Psychological Foundations (PsyF)

(College of Education)

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

The following courses in educational psychology, offered by the College of Education, are regularly open to Arts College students. (Students formerly registered for these courses under the departmental abbreviation of EPsy.)

- PsyF 5-121 (EPsy 117). BASIC PRINCIPLES OF MEASUREMENT.** (3 cr; prereq PsyF 5-110 or 8-110 or Psy 3-801 or equiv)
Principles underlying construction of achievement examinations; developments in educational and psychological measurement; theory and practice related to statistical methods; types and uses of derived scores; factors influencing reliability and validity.
- PsyF 5-122 (EPsy 140). INSTRUMENTS AND TECHNIQUES OF MEASUREMENT.** (3 cr; prereq PsyF 5-120 or 5-121)
Measuring intelligence, achievement, interests, attitudes, and personality traits; use in educational guidance, personnel work, administration, and supervision.

ENGLISH (Engl)

(For courses in Freshman English and composition, see page 97).

The major sequence in English has been changed; students who had already begun to complete the old sequence may earn a B.A. in English by finishing either the old or the new major sequence.

● Major Sequence in Arts College

Plan A: At least ten courses, including 3 courses in periods earlier than 1660—that is from among the following courses and other such period courses acceptable to the department adviser: 1-821, 3-155, 3-156, 3-875, 5-135, 5-136, 5-161, 5-162, 5-163, 5-841/5-842, 5-847/5-848/5-849, 5-862, 5-894, 5-895, 5-896, 5-897, 5-898.

Plan B: Two courses from Engl 1-821, 1-822, 1-823.

At least eight Upper Division courses in English, including:
Two courses in Shakespeare: 3-155, 3-156

One course in Chaucer 3-875 if Engl 1-821 has not been taken.

One course in Milton 5-862 if Engl 1-822 has not been taken.

No more than 3 Upper Division cr in correspondence courses in English may be counted toward a major in English.

Honors Opportunities and Graduation with Honors: Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the department office.

The Department of English regards the knowledge of foreign languages, and especially of Latin, French, Greek, Italian, and German, as of particularly high value to students of the English language and English literature, and especially urges students planning to major in English to include as much foreign language study in their programs as possible and to begin such study as early as possible. Students who look forward to graduate study should consider this especially and should take into account the need for Latin in connection with English studies in certain fields.

Students who look forward to graduate study in English should be forewarned that some graduate departments (this one, for instance) requires undergraduate work in Chaucer, Shakespeare, and Milton. Potential graduate students should also take into account the need for Latin in connection with English Studies in certain areas.

General Education—The Department of English believes that all its courses numbered below 5-000 are properly regarded as courses in general education and are suitable for nonmajor students.

LOWER DIVISION COURSES

Note—For courses in freshman English, see page 97.

1-821f,w, 1-822w,s, 1-823f,s (21,22,23). **INTRODUCTION TO LITERATURE.** (4,4,4 cr; prereq^{**})

Chronological study of English literature with work on types of literature and literary ideas. 1-821: Medieval and Renaissance literature. 1-822: Milton, Restoration, 18th century. 1-823: Romantic movement and Victorians.

1-821H,1-822H,1-823H (21H,22H,23H). **HONORS COLLOQUIUM: INTRODUCTION TO LITERATURE.** (4,4,4 cr; prereq ¶any regular section of 1-821, 1-822, 1-823, consent of honors adviser)

1-937f,1-938w, 1-939s (37,38,39). **MODERN LITERATURE.** (4,4,4 cr; for students in all departments and colleges, not particularly for English majors; prereq [except in General Extension Division] soph,^{**})

Readings in modern poetry, fiction, and drama, mainly British and American. 1-937: Poetry. 1-938: Prose fiction. 1-939: Drama.

UPPER DIVISION COURSES

Engl 3-827, 3-828, 3-829; 3-155/3-156; 3-966/3-967, and 3-721/3-722/3-723 are open to Lower Division students who have completed the Freshman English requirement. Other Upper Division courses are open to sophomores under the conditions explained at the beginning of Section II.

3-155f,w,s/3-156f,w,s (55-56). **SHAKESPEARE.** (4-4 cr; students may not start with 3-156 except by Δ)

3-155: Readings of plays from Shakespeare's early and middle periods. All sections will read Richard II, A Midsummer Night's Dream, The Merchant of Venice, Hamlet, and two or three other plays from early and middle periods. 3-156: Reading of plays from middle and late periods. All sections will read Twelfth Night, King Lear, Macbeth, The Tempest, and two other plays from middle and late periods.

3-155H,3-156H (55H-56H). **HONORS COURSE: SHAKESPEARE.** (4,4 cr; prereq consent of English honors adviser)

^{**}Must have fulfilled freshman English requirement.

Course Offerings and Major Sequences

- 3-601f,w,s (60). INTRODUCTION TO ENGLISH LANGUAGE.** (4 cr, §5-645; intended primarily for majors in elementary education; prereq**)
How English exemplifies basic concepts of language with respect to inner structure, outer form, time, situation, and user.
- 3-721f,w/3-722w,s/3-723f,s (72-73-74). AMERICAN LITERATURE.** (4-4-4 cr, §5-721,5-722, 5-723; prereq 3-721 for either 3-722 or 3-723, except for education minors...or #)
3-721: Beginnings through Hawthorne. 3-722: Thoreau and Melville through James. 3-723: Crane to present.
- 3-827f,3-828w,3-829s (52,53,54). ENGLISH NOVEL.** (4,4,4 cr, §5-827, §5-828, §5-829)
3-827: The 18th-century. 3-828: Early and mid-19th-century. 3-829: Late 19th and early 20th-century.
- 3-875f,w,s (75). CHAUCER.** (4 cr, §5-875)
Readings of selections from *The Canterbury Tales* with introduction dealing with grammar and literary forms of 14th-century English.
- 3-877f,3-878w,3-879s (77,78,79). TWENTIETH-CENTURY BRITISH LITERATURE.** (4,4,4 cr)
Critical survey of major figures.
- 3-910 (57,58,59). TOPICS IN ENGLISH AND AMERICAN LITERATURE.** (4 cr)
Topics will be annually specified in the Class Schedule.
- 3-940 (61,62,63). FIGURES IN ENGLISH AND AMERICAN LITERATURE.** (4 cr)
Figures will be annually specified in the Class Schedule.
- 3-966f/3-967w (66-67). LITERATURE OF THE BIBLE.** (4-4 cr)
Readings in Old and New Testaments from literary point of view. Selections from historical narratives, prophets, psalms, tales, wisdom literature, apocalypse.
- 3-970 (70). DIRECTED STUDIES.** (1 to 15 cr ar; prereq #)
This is a course devised for the independent study program, and is designed to permit the student to pursue his interests in special reading and/or study.
- 3-393H (93H). HONORS THESIS.** (4 cr; prereq honors candidacy in English and consent of English honors adviser)
- 3-390H (97H, 98H). HONORS SEMINAR.** (4 cr; prereq consent of English honors adviser)
- 5-128w (127). DRAMA FROM ca. 1800 TO ca. 1920.** (4 cr; prereq 3-156)
Beginnings of modern realism, naturalism and expressionism in English and Continental drama.
- 5-129s (129). DRAMA SINCE ca. 1920.** (4 cr; prereq 3-156)
Survey of chief dramatists, English, American, and Continental.
- 5-135,5-136 (135,136). ADVANCED SHAKESPEARE I AND II.** (4,4 cr; prereq 3-156)
Intensive study of a few plays.
- 5-141s (156). AMERICAN DRAMA.** (4 cr)
Critical survey of American drama; primary emphasis upon American drama from 1914 to present; some representative American plays of 18th, 19th, and early 20th centuries.
- 5-161 (168). MEDIEVAL DRAMA.** (4 cr)
- 5-162 (169). TUDOR AND ELIZABETHAN DRAMA EXCLUSIVE OF SHAKESPEARE.** (4 cr)
Interludes, moralities, academic and court plays; plays of Kyd, Marlowe, Lyly, Greene, and Peele.
- 5-163 (170). JACOBEAN AND CAROLINE DRAMAS EXCLUSIVE OF SHAKESPEARE.** (4 cr; prereq 3-156 or 5-162)
Selected plays of Jonson, Webster, Middleton, and others.
- 5-164f (126). RESTORATION AND 18TH-CENTURY ENGLISH DRAMA.** (4 cr; prereq 3-156)
Heroic play, tragedy, comedy of manners, sentimental comedy.
- 5-184f,5-185w,5-186s (184,185,186). FORM AND IDEA IN DRAMATIC LITERATURE.** (4,4,4 cr; prereq 3-155/3-156 recommended)
Dramatic types, in chronological sequence; analytical reading of selected representa-

**Must have fulfilled freshman English requirement.

- tive plays. 5-184: Tragic and religious drama (classical, medieval, Renaissance, and modern); theories of tragedy. 5-185: Comedy (classical, Renaissance, and modern); theories of comedy. 5-186: Experimental and nonrealistic drama.
- 5-501f/5-502w (120-121). **TECHNIQUES OF POETRY.** (4-4 cr)
Certain technical aspects of poetry in relation to poetic meaning.
- 5-503f,5-504w (123,124). **TECHNIQUES OF NOVEL.** (4,4 cr; prereq for undergrad, English major with B avg or #)
Special studies in novels of late 19th and 20th centuries with particular regard to structure. See also Comp 5-101, 5-102, 5-103 for writing of fiction.
- 5-511 (179). **CLASSICS OF LITERARY CRITICISM.** (4 cr)
- 5-512 (181). **MODERN LITERARY CRITICISM.** (4 cr)
Major texts and movements in modern literary criticism; examination of a few of more important historical documents from earlier centuries.
- 5-631 (125). **LANGUAGE AND LITERATURE.** (4 cr; prereq 5-645 or 8-604)
The place of linguistic analysis in a theory of literary criticism; stylistic analysis in Europe and America since 1920; an examination of theories of linguistic description relevant to critical analysis; application to texts in prose and poetry.
- 5-633 (133). **AMERICAN SOCIAL DIALECTS.** (4 cr)
Social and class variation in American English, with emphasis upon the dialects of the culturally disadvantaged, and their relation to standard English as a second dialect.
- 5-645f,w,s (165). **STRUCTURE OF MODERN ENGLISH.** (4 cr)
Introduction to three English grammars: traditional, structural, and transformational, with applications in the study of social and regional variations.
- 5-646s (166). **HISTORY OF ENGLISH LANGUAGE.** (4 cr)
Historical influences upon, and changes within, language as both popular and literary medium of communication.
- 5-666 (164). **SEMANTICS: SURVEY OF THEORIES OF MEANING.** (4 cr)
Discussion of relationship in English between semantics and syntax. Not a course in general semantics.
- 5-667 (167). **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).
- 5-674s (174). **AMERICAN ENGLISH.** (4 cr)
History of the English language in the United States; significant regional variations; access to collections of Linguistic Atlas of the Upper Midwest.
- 5-704w (104). **EMERSON AND THOREAU.** (4 cr)
- 5-705f (105). **HAWTHORNE AND MELVILLE.** (4 cr)
- 5-706s (106). **WHITMAN AND MARK TWAIN.** (4 cr)
- 5-713s (113). **AMERICAN SHORT STORY.** (4 cr)
Historical examination of American short story from 18th century to present.
- 5-718 (172). **HENRY JAMES.** (4 cr)
- 5-721f,5-722w,5-723s (130, 131, 132). **AMERICAN LITERATURE.** (4,4,4 cr, §3-721,3-722, 3-723)
5-721: The beginnings through Hawthorne. 5-722: Thoreau and Melville through James. 5-723: Crane to present.
- 5-734s (134). **ORIGINS OF AMERICAN NATURALISM.** (4 cr)
- 5-751w,5-752s (154, 155). **AMERICAN NOVEL.** (4,4 cr)
History of American novel from beginning to present.
- 5-757f,5-758w (157, 158). **AMERICAN POETRY.** (4,4 cr)
Critical survey of American Poetry from Anne Bradstreet to present; some attention to historical and intellectual backgrounds; emphasis upon major figures.
- 5-761,5-762 (159, 160). **EARLY AMERICAN LITERATURE.** (4,4 cr)
Critical survey: emphasis upon principal writers and major cultural themes, from Puritans to Transcendentalists.
- 5-771 (171). **BLACK WRITERS OF THE UNITED STATES.** (4 cr)
Prose, poetry, and drama, with emphasis on writers of the 20th century.

Course Offerings and Major Sequences

- 5-801f,s (100). OLD ENGLISH (ANGLO-SAXON).** (4 cr)
Introduction to sounds and grammar with some prose reading. Relation to modern English stressed.
- 5-802w (102). READINGS IN OLD ENGLISH PROSE AND VERSE.** (4 cr; prereq 5-801)
Critical reading of texts, and introduction to versification.
- 5-803s (103). BEOWULF.** (4 cr; prereq 5-801)
Introduction to the Old English poem, with reading of considerable portions of text.
- 5-811f,5-812w,5-813s (108,109,110). ROMANTIC POETRY AND PROSE.** (4,4,4 cr)
5-811: Blake's lyrics, Wordsworth's poetry to 1807, Coleridge's poetry and criticism.
5-812: Blake's and Wordsworth's narrative poetry, essays of Lamb and DeQuincey.
5-813: Byron, Shelley, and Keats.
- 5-814 (112). THE ROMANTIC TRADITION.** (4 cr)
- 5-827f, 5-828w, 5-829s (117,118,119). ENGLISH NOVEL: DEFOE TO HARDY.** (4,4,4 cr, §3-827,3-828,3-829)
5-827: The 18th century. 5-828: Early and mid-19th century. 5-829: Late 19th and early 20th centuries.
- 5-837f, 5-838w, 5-839s (137,138,139). VICTORIAN LITERATURE.** (4,4,4 cr)
Prose, poetry, and selected fiction. Emphasis on critical study of particular works of major authors and their relation to recurrent themes and literary interests of the period.
- 5-841w/5-842s (140-141). ADVANCED CHAUCER.** (4-4 cr; prereq 3-875 or equiv)
A review of The Canterbury Tales; reading of the longer poems.
- 5-844, 5-845 (142,143). JAMES JOYCE.** (4,4 cr)
Critical reading of the texts.
- 5-847f/5-848w/5-849s (147,148,149). MIDDLE ENGLISH LITERATURE EXCLUSIVE OF CHAUCER.** (4-4-4 cr; prereq 3-875 and 5-801 or §)
Leading genres of Middle English literature. 5-847: Devotional prose and lyric verse. 5-848: Religious allegory and the drama. 5-849: Epic and romance.
- 5-862f,w,s (162). MILTON.** (4 cr)
Minor poems: Areopagitica, Paradise Lost, and Samson Agonistes.
- 5-875s (175). CHAUCER.** (4 cr, §5-875 or equiv; prereq 5-801)
Reading of The Canterbury Tales with introduction dealing with grammar and literary forms of 14th-century English.
- 5-883f (183). POETRY OF T. S. ELIOT.** (4 cr)
- 5-886f, 5-887w, 5-888s (187,188,189). EIGHTEENTH-CENTURY LITERATURE.** (4,4,4 cr)
Survey of English literature from 1700 to 1790. Parallel readings and critical essays.
- 5-889 (173). DR. JOHNSON AND HIS CIRCLE.** (4 cr; prereq Δ)
Boswell; Johnson's influence on his contemporaries.
- 5-893s (193). POETRY OF W. B. YEATS.** (4 cr)
- 5-894f, 5-895w, 5-896s (194, 195, 196). ELIZABETHAN PROSE AND VERSE.** (4,4,4 cr)
5-894: From beginning of Tudor period to about 1580. 5-895: From early work of Spenser and Sidney to mid-90's. 5-896: Decade centering in last year or two of Queen's reign.
- 5-897f, 5-898w, 5-899s (197, 198, 199). SEVENTEENTH-CENTURY LITERATURE.** (4,4,4 cr)
5-897, 5-898: Prose and nondramatic poetry of century to 1660. 5-899: Dryden and his contemporaries.
- 5-910 (114,115,116). TOPICS IN ENGLISH AND AMERICAN LITERATURE.** (4 cr)
Topics will be annually specified in the Class Schedule.
- 5-933 (128). LITERATURE AND THE OTHER ARTS.** (4 cr)
An informal, highly tentative exploration of possible 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.
- 5-940 (176,177,178). FIGURES IN ENGLISH AND AMERICAN LITERATURE.** (4 cr)
Figures will be annually specified in the Class Schedule.
- 5-991f, 5-992w, 5-993s (190, 191, 192). TWENTIETH-CENTURY WRITERS.** (4,4,4 cr)
Authors will vary from year to year, and will be specified in Class Schedule.

Freshman English; Composition

● **Major Sequence**—There is no major sequence in composition.

Concurrent registration in Freshman English and in Advanced Composition courses is not permitted.

Important Note—No student may register for any freshman course in English composition or communication without presenting a "Memorandum or Placement" as evidence of his assignment. On the basis of various factors, including examinations, the student is assigned to one of four categories.

If he is assigned to:

Category 1.

He is not required to take any course in freshman English or communication (though he may, if he wishes, take Engl 1-001/1-002/1-003 or 1-004 or Comm 1-001/1-002/1-003, and he is eligible to take any course for which completion of or exemption from the freshman English requirement is the sole prerequisite.

Category 1A.

He is subject to the privileges and restrictions above; but the student in Category 1A is eligible to take Engl 1-311/1-312/1-313, and he is given 6 cr of advanced standing in composition.

Category 2.

He must take Engl 1-001/1-002/1-003 or 1-004 or Comm 1-001/1-002/1-003.

Category 3.

He must take Comp 0-001; and he must, after passing it take Engl 1-001/1-002/1-003 or 1-004 or Comm 1-001/1-002/1-003.

Engl 1-001/1-002/1-003 or 1-004 is a 9-cr course in composition, using literature as the reading material and the subject matter for composition; Comm 1-001/1-002/1-003 (offered in one of the interdisciplinary programs), a 12-cr course in composition and speech. The student may satisfy the freshman English requirement for graduation, and for admission to the Upper Division, by passing either of these courses or by being assigned to Category 1 or 1A. Comp 0-001 is a no-credit course in composition. Any student who has already completed one or more quarters of freshman English in another college or university must consult the Committee on Scholastic Standing of his college before registering for any freshman course in English or communication.

Any student who receives a grade of A in Engl 1-001 or 1-002 may, upon his instructor's recommendation, be exempted from any further requirement in freshman English.

LOWER DIVISION COURSES

Comp 0-001 (X). ** PREPARATORY COMPOSITION. (No cr; prereq assignment to Category 3 [see Important Note above])
Remedial course in composition.

1-001f,w/1-002w,s/1-003f,s or 1-004f,s (1-2-3).** FRESHMAN ENGLISH. (3-3-3 cr; prereq assignment to Category 1, 1A, or 2)

A course in composition in which literature serves both as reading material and as subject matter for writing. Not a course in the history of literature or in literary criticism. 1-004 is a course alternative to 1-003. The course emphasizes the close reading and analysis of selected literary texts.

**Any student absent the first day will lose his place in class. Any student absent from final examination will be given a grade of F, whatever the reason for his absence, unless he satisfactorily explains his absence to his instructor beforehand or as soon as possible afterward.

Course Offerings and Major Sequences

1-311H/1-312H/1-313H (10H-11H-12H). ** HONORS COURSE: FRESHMAN LITERATURE AND COMPOSITION. (5-5-5 cr; prereq assignment to Category 1A [see Important Note above])

A course in composition using literature as the basis for discussion and writing. For the exceptionally able student.

Comp 1-027f,w,s/1-028f,w,s (27-28). ** ADVANCED WRITING. (3-3 cr; prereq completion of, or exemption from, freshman English requirement; after 1st day of class students must have Δ to attend class)

1-027: (a) Expository prose; (b) argumentation. 1-028: Narrative and descriptive writing.

Comp 5-101f, 5-102w, 5-103s (101, 102, 103). WRITING OF FICTION AND POETRY. (4,4,4 cr; prereq #...samples of writing must be submitted in advance)

Principles of composition in these arts.

FAMILY STUDIES (FamS)

The Family Study Center administers an interdisciplinary program in education for marriage and parenthood for the Arts College. One cannot major in this area. These courses are designed to analyze the roles involved in family living with the aim in mind of helping the student to better understand his own conception of effective family living.

LOWER DIVISION COURSES

1-001f,w,s (1). DYNAMICS OF DATING, COURTSHIP AND MARRIAGE. (3 cr) Huyck, Kokosh, Meyers, Wahlstrom

Application of principles from behavioral sciences to dating, courtship, mate selection, engagement, mixed marriages, roles of men and women, interaction on marital spouses, and marital stability.

3-001f,w,s (1A). DYNAMICS OF DATING, COURTSHIP AND MARRIAGE. (3 cr, §1-001) Holland, Huyck

(See FamS 1-001) Designed for engaged or married students or #.

1-025f,w,s (25). PARENTHOOD. (3 cr) Huyck

Examination of differing concepts of family roles—father, mother, son, daughter, sister, brother. Their implications for parent-child and sibling interaction. Effects of parenthood on husband-wife relations.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

3-015s (50). LIFE STYLES OF EDUCATED AMERICAN WOMEN. (3 cr; prereq #) Truax

The roles and statuses of American women and how they compare and reciprocate with those of men. The kind of education she gets; what influences it; how she uses it throughout her life. Possibilities and needs for change in terms of various objectives in the future.

5-001f,w,s (100). HUMAN SEXUAL BEHAVIOR. (3 cr; prereq 15 cr in psychology or sociology) Neubeck

Nature of sexual functioning; sexual development, ethics and attitudes, research problems.

FOREIGN STUDY (FoSt)

(SPAN Program)

5-960 (161su-162su). SEMINAR FOR FOREIGN STUDY. (12 cr; prereq Δ ; apply to Professor T. G. Stavrou, Dept. of History, or SPAN office)

Directed field study (SPAN program) in selected foreign countries, investigating current economic, political, educational, cultural, and religious patterns of life. Each student

**Any student absent the first day will lose his place in class. Any student absent from final examination will be given a grade of F, whatever the reason for his absence, unless he satisfactorily explains his absence to his instructor beforehand or as soon as possible afterward.

studies his host country and his project during year preceding summer abroad, and writes comprehensive report upon returning. Countries to be visited in 1971 are: Cyprus, Ghana, the German Democratic Republic and Honduras. Applications are now open until October 1, 1970. For further information, contact Professor T. G. Stavrou, Department of History or SPAN office, 133 Clay School-West Campus.

FRENCH AND ITALIAN

French (Fren)

- **Required background courses:**
French 1-001/1-002/1-003, 1-004, 1-005
- **Major Sequence for B.A. degree:**
40 credits in courses numbered 3-104 and above, including:
 - A. Language: 3-011, 3-021; plus one of 3-012 or 3-022 or 3-031
 - B. Civilization: 3-501 or 3-502
 - C. Literature: 3-104, 3-201; plus four courses numbered 3-209 through 3-305
 - D. Any three other courses at the Upper Division level (3-001 through 3-998)
- **Honors Opportunities and Graduation with Honors:**
Information concerning opportunities for honors students and departmental requirements for graduation may be obtained at the Honors Division office (115 Johnston) or the department office.
- **Accelerated Sections:**
Recently developed special accelerated sections formed in the course of 1-001/1-002/1-003 sequence allow highly motivated students to complete their language requirement and enter advanced courses more rapidly than was formerly possible.
- **General Education:**
French translation (3-601/3-602/3-603) is offered for non-majors.

LOWER DIVISION COURSES

- 1-001/1-002/1-003 (1-2-3). BEGINNING FRENCH (TV).** (5-5-5 cr; students submitting 1 yr high school French for entrance must take 1-002 or 1-002H and those offering 2 yrs must take 1-003 or 1-003H)
Course with speaking objectives based on an audio-lingual approach. Students will learn to understand and express fundamental ideas, to write in French anything they can say, and to master the fundamental structures of the language. (See section marked Accelerated Sections)
- 1-101/1-102/1-103 (1-2-3). BEGINNING FRENCH (Non-TV).** (5-5-5 cr; students submitting 1 yr high school French for entrance must take 1-002 or 1-002H and those offering 2 yrs must take 1-003 or 1-003H)
Course with speaking objectives based on an audio-lingual approach. Students will learn to understand and express fundamental ideas, to write in French anything they can say, and to master the fundamental structures of the language. (See section marked Accelerated Sections)
- 1-002H/1-003H/1-004H (2H-3H-25H). HONORS SEQUENCE: BEGINNING AND INTERMEDIATE FRENCH.** (5-5-5 cr; open to superior students on basis of performance in previous qtr or #)
- 1-004 (25). INTERMEDIATE FRENCH.** (4 cr; prereq 1-003 or 3 yrs high school French)
Consolidation of basic structures and development of oral fluency through readings and discussion.

Course Offerings and Major Sequences

- 1-005 (26). INTERMEDIATE FRENCH.** (3 cr; prereq 1-004)
Readings in contemporary culture. Development of vocabulary and improvement of ability to read, write and speak the language.
- 3-011 (54). FRENCH COMPOSITION.** (3 cr; prereq 1-004H or 1-005...[3-021 highly recommended])
Course in writing paragraphs developing into short essays based on models and collections of essays.
- 3-011H (54H). HONORS COURSE: FRENCH COMPOSITION.** (3 cr; prereq 1-004H [with A or B grade] or 1-005 [with A grade])
- 3-012 (57). ADVANCED FRENCH COMPOSITION.** (3 cr; prereq 3-011 or #)
- 3-021 (55). FRENCH CONVERSATION AND PRONUNCIATION.** (3 cr; prereq 1-004H or 1-005; 3 rec and 1 lab hr...[3-011 highly recommended])
In addition to regular conversation course, an hour each week is devoted to practical phonetics and pronunciation drill.
- 3-022 (58). ADVANCED FRENCH CONVERSATION.** (3 cr; prereq 3-021 or #)
- 3-023 (56A). ADVANCED FRENCH CONVERSATION.** (Offered Summer-Sessions-only at French House)
- 3-031 (59). THEME ET VERSION.** (3 cr; prereq 3-012 or #)
Specialized course in techniques of essay writing and translation. Discussion in French of problems of expression and composition.
- 3-104 (53). INTRODUCTION TO FRENCH LITERARY TEXTS.** (3 cr; prereq 1-004H or 1-005 or equiv)
Variety of literary works representing principal genres are examined through stylistic analyses and literary explications. Students learn critical terminology and discuss literary problems and techniques.
- 3-104H (53H). HONORS COURSE: INTRODUCTION TO FRENCH LITERARY TEXTS.** (3 cr; prereq 1-004H or 1-005 or equiv and successful completion of a proficiency exam)
Variety of literary works representing principal genres are examined through stylistic analyses and literary explications. Students learn critical terminology and discuss literary problems and techniques. Taught in French.
- 3-201 (64). THE FRENCH LITERARY TRADITION.** (3 cr; prereq 3-104)
An overall view of tradition and innovation in French literature, with emphasis on discussion of specific masterpieces and theoretical works. Taught in French.
- 3-209 (80). TOPICS IN MEDIEVAL FRENCH LITERATURE.** (3 cr; prereq 3-201)
Reading and discussion of selected texts. Taught in French.
- 3-219 (81). TOPICS IN 16th-CENTURY FRENCH LITERATURE.** (3 cr; prereq 3-201)
Reading and discussion of selected texts. Taught in French.
- 3-239 (82). TOPICS IN 17th-CENTURY FRENCH LITERATURE.** (3 cr; prereq 3-201)
Reading and discussion of selected texts. Taught in French.
- 3-259 (83). TOPICS IN 18th-CENTURY FRENCH LITERATURE.** (3 cr; prereq 3-201)
Reading and discussion of selected texts. Taught in French.
- 3-269 (84). TOPICS IN 19th-CENTURY FRENCH LITERATURE.** (3 cr; prereq 3-201)
Reading and discussion of selected texts. Taught in French.
- 3-289 (85). TOPICS IN 20th-CENTURY FRENCH LITERATURE.** (3 cr; prereq 3-201)
Reading and discussion of selected texts. Taught in French.
- 3-301 (86). FRENCH LYRIC POETRY.** (3 cr; prereq 3-201)
Reading and discussion of selected texts and development of notions of convention and genre.
- 3-303 (87). FRENCH DRAMA.** (3 cr; prereq 3-201)
Reading and discussion of selected texts and development of notions of convention and genre.
- 3-305 (88). THE FRENCH NOVEL.** (3 cr; prereq 3-201)
Reading and discussion of selected texts and development of notions of convention and genre.
- 3-399H (98H). HONORS SEMINAR: FRENCH LITERATURE.** (3 cr; prereq regis in Honors Division with major in French or #)

Detailed study of an author, tendency or period with discussion and written work in French.

- 3-501 (60). FRENCH CIVILIZATION AND CULTURE.** (4 cr; prereq 1-004H or 1-005)
Systematic study of development of French culture, with oral and written exercises based on material of course. Taught in French.
- 3-502 (61). CONTEMPORARY FRENCH CIVILIZATION AND CULTURE.** (4 cr; prereq 1-004H or 1-005)
Study of contemporary French culture and institutions. Taught in French.
- 3-503 (62). ASPECTS OF FRENCH CIVILIZATION AND CULTURE.** (3 cr; prereq 3-501 or 3-502)
Detailed study of a period or aspect of French culture. Taught in French.
- 3-601/3-602/3-603 (77-78-79). FRENCH LITERATURE IN ENGLISH TRANSLATION.**
(3-3-3 cr; for students with little or no knowledge of French but with an interest in the contribution of French to European and world literature; knowledge of French not required; does not count toward a major in French)
Representative works, chosen from medieval times to present day, are examined through various movements, genres, or themes.
- 3-701 (90). DEVELOPMENT OF THE FRENCH LANGUAGE.** (3 cr; prereq 3-011 or #)
Introduction to a study of the origins and development of the French language. Readings of selected texts.
- 5-011 (104). ADVANCED PROBLEMS IN FRENCH LANGUAGE.** (3 cr; prereq major in French and #) Chastain
Study in depth of the more troublesome aspects of the French Language principally as they relate to grammar, usage, levels of expression and pronunciation. Special emphasis will be placed on the problems most frequently encountered by the native speaker of American English. These will be explored by graduate student teachers through actual classroom contact with students enrolled in Beginning and Intermediate French classes.
- 5-012 (105). STYLISTICS.** (3 cr; prereq 3-012 or #)
Structural dimensions of literary works, principally as they relate to language, are examined in depth. Examples from a variety of genres and periods. Taught in French.
- 5-013 (150). INTRODUCTION TO FORMAL ANALYSIS.** (3 cr)
Outstanding literary texts from Middle Ages to 20th century. Designed to reveal how language, themes, and structure analyzed as a whole, in depth, lead to maximal appreciation of beauty and significance of great literary texts.
- 5-201/5-202/5-203 (175-176-177). FRENCH LITERARY DOCTRINES FROM PLEIADE TO THE PRESENT.** (3-3-3 cr)
Taught in French.
- 5-204/5-205/5-206 (182-183-184). MOUVEMENT DES IDEES.** (1-3 cr per qtr; prereq 3-501, 3-502, 3-503 or #)
Designed primarily for graduate students. Taught in French.
- 5-219. HUMANISM AND ITALIANISM IN THE LITERATURE OF THE 16TH CENTURY.**
(3 cr; prereq 3-209 or above) Renaud
Systematic study of those aspects of Italian civilization of the 14th-15th-16th centuries that lead to the French Renaissance and the Humanistic trends. The study is principally in French and Italian literary works but will also involve some paraliterary works.
- 5-260. ROMANTIC POETS: LAMARTINE, MUSSET, VIGNY.** (3 cr; prereq 3-209 or above)
Analysis of the poetry of Lamartine, Musset, and Vigny.
- 5-262 (132). SYMBOLIST POETS: VERLAINE, MALLARME, RIMBAUD.** (3 cr; prereq 3-209 or above) Robinson
Selected works, representing different aspects of symbolism, are studied in depth. Taught in French.
- 5-269 (136). FRENCH ROMANTICISM.** (3 cr; prereq 3-209 or above)
Graduate survey of principal theoretical and literary works.
- 5-270. POST-SYMBOLIST POETS: LaFORGUE, CORBIERE, SAINT-POL ROUX, HENRI DE REGNIER** (3 cr; prereq 3-209 or above) Robinson
Poetry between symbolism and surrealism.
- 5-271. PROSE POETRY OF THE 19TH CENTURY.** (3 cr; prereq 3-209 or above)
Prose poems of Baudelaire, Rimbaud, and Lautreamont.

Course Offerings and Major Sequences

- 5-280. SURREALIST POETRY: APOLLINAIRE, BRETON, ELUARD.** (3 cr; prereq 3-209 or above) Kalb
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 as a conscious effort to renovate literature.
- 5-301 (118). MEDIEVAL LYRIC POETRY.** (3 cr; prereq 3-209 or above) Akehurst
Origins, form, and content of lyric poetry from the trouveres to Villon.
- 5-303. MEDIEVAL FRENCH DRAMA.** (3 cr; prereq 3-209 or above) Akehurst
History of the medieval French theatre from its origins to the Renaissance.
- 5-305 (113). MEDIEVAL FRENCH ROMANCE.** (3 cr; prereq 3-209 or above) Akehurst
The roman courtois, with emphasis on Chretien de Troyes.
- 5-307. MEDIEVAL FRENCH ALLEGORY AND SATIRE.** (3 cr; prereq 8-021 or #) Akehurst
Study of the use of satire and allegory in the French Fabliaux, the Roman de Renart and the Roman de la rose.
- 5-309. MEDIEVAL FRENCH EPIC.** (3 cr; prereq 8-021 or #) Akehurst
Origins, form, and history of epic literature of French middle ages.
- 5-310. RENAISSANCE POETRY BEFORE THE PLEIADE.** (3 cr; prereq 3-209 or above)
Renaud
From the Grands Rhetoriqueurs to Marot and Saint-Gelais, then to "l'ecole lyonnaise" with special attention to Sceve.
- 5-311. POETRY OF THE 16TH CENTURY AFTER SCEVE.** (3 cr; prereq 3-209 or above)
Concentrates on Ronsard and DuBellay but examines the lesser poets of the Pleiade and the first baroque poets, including Sponde, DuBartas, Desportes, Chassignet.
- 5-313 (120). RENAISSANCE—BAROQUE DRAMA (EXCLUSIVE OF CORNEILLE).** (3 cr; prereq 3-209 or above)
The dramatic genres, particularly the tragedy from Jodelle to Rotrou.
- 5-330 (128). FRENCH POETRY FROM d' AUBIGNE TO La FONTAINE.** (3 cr; prereq 3-209 or above) Renaud
The movement from baroque to classicism is studied in the great verse creations of the 17th century.
- 5-333 COMEDY OF THE 16TH AND 17TH CENTURIES (EXCLUSIVE OF MOLIERE).**
(3 cr; prereq 3-209 or above) Renaud
The rebirth of comedy during the Renaissance, its encounter with the traditional comic genres of the Middle Ages, its elaboration into a new comedy that was a blend of an heritage that came from Greece, Rome, Italy, Spain and France itself. This kind of comedy continues while Moliere lives and long after his death.
- 5-335 (129). THE NOVEL OF THE 17TH CENTURY.** (3 cr; prereq 3-209 or above) Renaud
- 5-338 (122). NONFICTION PROSE OF THE 17TH CENTURY.** (3 cr; prereq 3-209 or above)
A study of significant writings in prose other than the novel. Among the authors examined are Guez de Balzac, Chapelain, LaRocheffoucauld, LaBruyere.
- 5-339. SHORT STORIES OF THE 16TH AND 17TH CENTURIES.** (3 cr; prereq 3-209 or above) Renaud
The development of narrative techniques and the variants of short stories in France during the 16th and 17th centuries.
- 5-354 (141). DRAMA OF THE 18TH CENTURY.** (3 cr; prereq 3-209 or above) Waldauer
Discussion of tragedy, drame, comedy; emphasis on latter.
- 5-355 (140). NOVEL OF THE 18TH CENTURY.** (3 cr; prereq 3-209 or above) Waldauer
Emphasis on novels of Prevost, Marivaux, Rousseau, Diderot and Laclos.
- 5-361. PARNASSIAN POETRY: GAUTIER, LECONTE DE LISLE, HEREDIA.** (3 cr; prereq 3-209 or above)
The Art for Art's Sake movement and the Parnasse.
- 5-363 (137). 19TH-CENTURY DRAMA.** (3 cr; prereq 3-209 or above)
From Alexandre Dumas to Henry Becque and Maeterlinck, with special attention to Hugo.
- 5-367 (112). 19TH-CENTURY DRAMA: MUSSET.** (3 cr; prereq 3-209 or above)
The theater of Alfred de Musset.
- 5-368 (157). SHORT STORIES OF THE 19TH CENTURY.** (3 cr; prereq 3-209 or above)
From Charles Nodier to Anatole France with particular attention to Daudet and Villiers de l'Isle-Adam. (see 5-467 for Flaubert and Maupassant)

- 5-380. **VALERY AND THE HERITAGE OF SYMBOLISM.** (3 cr; prereq 3-209 or above) Kalb
Thorough study of the poetry of Valery with attention to the sources of his concept of poetry.
- 5-381. **CLAUDEL, PEGUY, JAMMES.** (3 cr; prereq 3-209 or above) Kalb
The great Catholic poets of the 20th century.
- 5-383 (148). **DRAMA OF THE 20TH CENTURY.** (3 cr; prereq 3-209 or above)
The main trends, themes and dramatic theories are followed from symbolist and surrealist drama to the "theatre de l'absurde."
- 5-384 (149). **DRAMATISTS OF THE 20TH CENTURY.** (3 cr; prereq 3-209 or above)
Concentrates on Anouilh, Sartre, Camus, Genet, Ionesco, Beckett, Audiberti; also examines less well-recognized dramatists of the last decade.
- 5-385 (171). **THE FRENCH NOVEL IN THE 20TH CENTURY.** (3 cr; prereq 3-209 or above)
The trends in the novel in France during the 20th century. Typical works will be selected.
- 5-390. **RECENT FRENCH POETRY.** (3 cr; prereq 3-209 or above) Robinson
Several contemporary French Poets.
- 5-395 (172). **NOVEL OF L'ENTRE-DEUX GUERRES.** (3 cr; prereq 3-209 or above)
This course complements others on the French novel of this century. Includes works of Bernanos, Jules Romains, Colette, Duhamel, Giono, Giraudoux, Martin du Gard and Saint-Exupery.
- 5-396 (159). **EXISTENTIAL NOVEL.** (3 cr; prereq 3-209 or above)
Stress upon novelists from 1930's to present whose work reveals concern for what Malraux calls "the human condition": Malraux, Celine, Sartre, Camus, Blanchot, and Beckett.
- 5-397 (162). **LE NOUVEAU ROMAN AND REPRESENTATIVE FRENCH NOVELISTS SINCE 1950.** (3 cr; prereq 3-209 or above)
Includes last existentialist novels and innovations of Nathalie Sarraute, Alain Robbe-Grillet, Michel Butor, and others.
- 5-415 (170). **RABELAIS.** (3 cr; prereq 3-209 or above) Renaud
Gargantua and Pantagruel in original text.
- 5-418 (123). **MONTAIGNE.** (3 cr; prereq 3-209 or above) Renaud
The Essais are studied in depth, partially in the light of the Journal de Voyage.
- 5-434 (125). **BAROQUE TRAGEDY: CORNEILLE.** (3 cr; prereq 3-209 or above) Renaud
Plays are studied both as unique creations and in the perspective of the aesthetics of the time.
- 5-438 (124). **PASCAL.** (3 cr; prereq 3-209 or above) Renaud
The literary originality of the Provinciales is analyzed but the course is principally devoted to Les Pensees.
- 5-443 (127). **CLASSICAL COMEDY: MOLIÈRE.** (3 cr; prereq 3-209 or above) Renaud
- 5-444 (126). **CLASSICAL TRAGEDY: RACINE.** (3 cr; prereq 3-209 or above) Renaud
- 5-457 (144). **ROUSSEAU.** (3 cr; prereq 3-209 or above) Waldauer
- 5-458 (142). **VOLTAIRE.** (3 cr; prereq 3-209 or above) Waldauer
- 5-459 (143). **DIDEROT.** (3 cr; prereq 3-209 or above) Waldauer
- 5-460 (130). **VICTOR HUGO.** (3 cr; prereq 3-209 or above) Robinson
- 5-461 (131). **BAUDELAIRE.** (3 cr; prereq 3-209 or above) Robinson
Analysis of Les Fleurs du Mal, Baudelaire's major work where most of his creative adventures are represented.
- 5-462. **RIMBAUD.** (3 cr; prereq 3-209 or above) Robinson
Poetry and writings.
- 5-465 (154). **STENDHAL.** (3 cr; prereq 3-209 or above) Lock
- 5-466 (153). **BALZAC.** (3 cr; prereq 3-209 or above) Lock
- 5-467 (155). **FLAUBERT, MAUPASSANT AND NARRATIVE TECHNIQUES.** (3 cr; prereq 3-209 or above) Lock
- 5-470. **MALLARME.** (3 cr; prereq 3-209 or above) Robinson
Study of the poetry and writings of Mallarme.

Course Offerings and Major Sequences

- 5-485 (173). MAURIAC AND THE CATHOLIC NOVEL.** (3 cr; prereq 3-209 or above) Kalb
Explication de texte by individual students.
- 5-505. FRENCH ROMANCES OF THE MIDDLE AGES AND THE "LIBROS DE CABELLERIA."** (3 cr; prereq at least one Upper Division course in the literature of France or Spain) Akehurst, Jones
The legends of the Breton cycle as they existed in French romances particularly, are followed to the Amadis de Gaula and the flood of "libros de caballeria."
- 5-509. ITALIAN AVATARS OF FRENCH MEDIEVAL EPICS: BOIARDO, ARIOSTO, TASSO.** (3 cr; prereq at least one literature course in either French or Italian) Akehurst, Schneider
A brief study of a number of French epics followed by selected readings in Boiardo's Orlando Innamorato; close study of Ariosto's Orlando Furioso and Tasso's Gerusalemme Liberata. Other works are examined briefly.
- 5-519. THE CONTINENTAL RENAISSANCE IN LITERATURE.** (3 cr; prereq at least one Upper Division course in Italian or Spanish or French or Portuguese literature, #) Renaud and others
Origin and dissemination of ideas, attitudes, themes, and some literary genres, first in Italy, then in Spain, Portugal, and France.
- 5-529/5-530/5-531. THE BAROQUE IN EUROPEAN LITERATURE: FRANCE, GERMANY, ITALY, PORTUGAL, SPAIN, WITH SOME ATTENTION TO HOLLAND AND ENGLAND.** (3-3-3 cr; prereq at least one Upper Division course in the literature of France or Germany or Italy or Portugal or Spain) Jones, Renaud, Weiss, and others
The baroque in literature as it spreads through Europe where the economy, political and religious thoughts, and public feeling still maintained many characteristics in common. Italian baroque is observed.
- 5-538. NOVELLE, NOVELAS, AND NOUVELLES: FROM BOCCACCIO TO CERVANTES AND MME. DE LAFAYETTE.** (3 cr; prereq at least one Upper Division course in French or Spanish or Italian literature, #) Renaud
Boccaccio's tales, the evolution of narrative techniques in Italy, then into Spain and France. Concentration will be on the genres called nouvelle-novela-nouvelle, which in France gave birth to the "first modern novel," La Princesse de Cleves, and also contributed to the elaboration of the realistic novel.
- 5-539. NARRATIVE TECHNIQUES AND THEMES IN THE LITERATURE OF FRANCE AND SPAIN FROM THE LIBRO DE BUEN AMOR TO GIL BLAS DE SANTILLANE.** (3 cr; prereq at least one Upper Division course in French or Spanish literature, #) Renaud
"Realistic" trends, including the picaresque, between the 14th and 18th centuries, with special attention to the 16th and 17th.
- 5-560 (133). 19TH-CENTURY POETIC THEORY.** (3 cr; prereq 3-209 or above) Robinson
Investigation of the poetic theory concerning language, versification and aesthetics of the 19th century.
- 5-565. REALISM IN THE 19TH-CENTURY NOVELS OF FRANCE AND SPAIN.** (3 cr; prereq at least one Upper Division course in French or Spanish literature preferably in the 19th century, #) Pattison, Lock, Sullivan
Reactions to Romanticism as they manifest themselves in a progressively growing interest in material facts utilized to present a positivist approach to literature, particularly in narrative fiction in France and Spain.
- 5-575. NATURALISM IN FRENCH AND HISPANIC LITERATURES.** (3 cr; prereq at least one Upper Division course in French or Spanish Literature, #) Lock, Pattison, Sullivan
The movement from preoccupations with material representation (realism) to a desire to represent human nature "as it really is," with concentration on the baser, more brutal, or special side. This pseudo-scientific approach to literature is studied in the novels of France, Spain and some Latin-American countries.
- 5-580. POETICS OF THE 20TH CENTURY.** (3 cr; prereq 3-209 or above)
Study of the innovations in versification, aesthetics, and doctrines.
- 5-589 (106). STRUCTURAL RHETORICS AS APPLIED TO FRENCH WORKS.** (3 cr; prereq grad standing or #)
An examination of rhetoric, especially the notions of "ecart" and "degre zero." Structural classification of classical rhetorical figures. Rhetoric as applied to other arts (stories, films, paintings). Use of figures in modern French authors.
- 5-599 (111). LITTERATURE FRANCAISE ET SOCIETE.** (3 cr; prereq 3-209 or above)

Problems and methods of sociological literary criticism.

5-701/5-702/5-703 (107-108-109). **STRUCTURE OF MODERN FRENCH: PHONOLOGY, MORPHOLOGY, SYNTAX.** (3 cr per qtr; prereq 3-012 or #) Mantini
Application of linguistics to study of present-day French.

5-970. **DIRECTED READINGS FOR UNDERGRADUATE STUDENTS.** (1-3 cr; prereq # and consent of dept chairman)

Italian (Ital)

- **Required background courses:**
Italian 1-001/1-002/1-003, 1-004, 1-005
- **Major sequence for B.A. degree:**
35 credits in courses numbered 3-104 and above, including:
 - A. Language: 3-011, 3-021; plus one of 3-012 or 3-022 or 3-031
 - B. Civilization: 3-501 or 3-502
 - C. Literature: 3-014, 3-201; plus choice of any four courses numbered 3-209 through 3-305
 - D. One other Italian course at the Upper Division level
- **Honors Opportunities and Graduation with Honors:**
Information concerning opportunities for honors students and departmental requirements for graduation may be obtained at the Honors Division Office (115 Johnston) or the department office.
- **Accelerated Section:**
Recently developed special accelerated sections formed in the course of 1-001/1-002/1-003 sequence allow highly motivated students to complete their language requirement and enter advanced courses more rapidly than was formerly possible.
- **Italian Students May Also Wish to Consider:**
 - Fren 5-219—Humanism and Italianism in the Literature of the 16th Century
 - Fren 5-209—Italian Avatars of French Medieval Epics: Boiardo, Ariosto, Tasso
 - Fren 5-519—The Continental Renaissance in Literature
 - Fren 5-529/5-530/5-531—The Baroque in European Literature: France, Germany, Italy, Portugal, Spain, with some attention to Holland and England
 - Fren 5-538—Novelle, Novelas and Nouvelles: From Boccaccio to Cervantes and Mme. de LaFayette

General Education:

Italian in translation (5-601/5-602/5-603) is offered for nonmajors

LOWER DIVISION COURSES

- 1-001/1-002/1-003 (1-2-3). **BEGINNING ITALIAN.** (5-5-5 cr)
Provides the student with the fundamentals of the Italian language. Based on an audio-lingual method and it stresses aural comprehension, correct pronunciation and a practical reading knowledge. It also provides the basic grammar of Italian. Intended for students who wish to gain a basic written and spoken knowledge of the language as an introduction to the study of Italian culture and literature.
- 1-002H/1-003H/1-004H (2H-3H-25H). **HONORS SEQUENCE: BEGINNING AND INTERMEDIATE ITALIAN.** (5-5-5 cr; prereq grade A or B in previous qtr or #)
Development of Ital 1-001 with progressive emphasis on notions of structure and acquisition of vocabulary based on reading and discussion of literary texts. For prospective Italian majors as well as for highly motivated students who are interested in Italian literature and culture.
- 1-004 (25). **INTERMEDIATE ITALIAN.** (4 cr; prereq 1-003 or equiv)
Consolidation of basic structures and development of oral fluence through readings

Course Offerings and Major Sequences

and discussions. Prepares students for more advanced language, literature, and civilization courses.

1-005 (26). INTERMEDIATE ITALIAN. (3 cr; prereq 1-004)

Complements the student's knowledge of the Italian language with the study of cultural texts chosen from among representative works. Develops the student's vocabulary and improves his ability to read, write and speak the language. For students who are completing their basic language requirements as well as for those who wish to go into the more advanced language, literature and civilization courses.

UPPER DIVISION COURSES

3-011 (54). ITALIAN COMPOSITION. (3 cr; prereq 1-004)

3-012 (57). ADVANCED ITALIAN COMPOSITION. (3 cr; prereq 3-021)

3-021 (55). ITALIAN CONVERSATION. (3 cr; prereq 1-004 or #)

3-022 (58). ADVANCED ITALIAN CONVERSATION. (3 cr; prereq 3-021)

3-031 (59). WRITING TECHNIQUES. (3 cr; prereq 3-012 or #)

Specialized course in techniques of essay writing and translation. Discussion in Italian of problems of expression and composition.

3-104 (53). INTRODUCTION TO ITALIAN LITERARY TEXTS. (3 cr; prereq 1-004H or 1-005 or #)

Variety of literary works representing principal genres are examined through stylistic analyses and literary explication. Students learn critical terminology and discuss literary problems and techniques.

3-201 (64). THE ITALIAN LITERARY TRADITION. (4 cr; prereq 3-104 or #)

Overall view of tradition and innovation in Italian Literature, with emphasis on discussion of specific masterpieces and theoretical works. Three lectures and one discussion session. Taught in Italian.

3-209 (80). TOPICS IN MEDIEVAL ITALIAN LITERATURE. (3 cr; prereq 3-201)

Reading and discussion of selected texts. Taught in Italian.

3-219 (81). TOPICS IN RENAISSANCE ITALIAN LITERATURE. (3 cr; prereq 3-201)

Reading and discussion of selected texts. Taught in Italian.

3-239 (82). TOPICS IN 17TH-CENTURY ITALIAN LITERATURE. (3 cr; prereq 3-201)

Reading and discussion of selected texts. Taught in Italian.

3-259 (83). TOPICS IN 18TH-CENTURY ITALIAN LITERATURE. (3 cr; prereq 3-201)

Reading and discussion of selected texts. Taught in Italian.

3-279 (84). TOPICS IN 19TH-CENTURY ITALIAN LITERATURE. (3 cr; prereq 3-201)

Reading and discussion of selected texts. Taught in Italian.

3-289 (85). TOPICS IN 20TH-CENTURY ITALIAN LITERATURE. (3 cr; prereq 3-201)

Reading and discussion of selected texts. Taught in Italian.

3-301 (86). ITALIAN LYRIC POETRY. (3 cr; prereq 3-201)

Reading and discussion of selected texts and development of notions of convention and genre. Taught in Italian.

3-303 (87). ITALIAN DRAMA. (3 cr; prereq 3-201)

Reading and discussion of selected texts and development of notions of convention and genre. Taught in Italian.

3-305 (88). THE ITALIAN NOVEL. (3 cr; prereq 3-201)

Reading and discussion of selected texts and development of notions of convention and genre. Taught in Italian.

3-501 (60). ITALIAN CIVILIZATION AND CULTURE. (4 cr; prereq 1-004H or 1-005 or #)

Systematic study of such topics as the Gothic, the Concept of Man in the Renaissance, Baroque Art, the Enlightenment, Historicism. Lecture in Italian.

3-502 (61). CONTEMPORARY ITALIAN CIVILIZATION AND CULTURE. (4 cr; prereq 1-004 or 1-005 or #)

Study of contemporary Italian culture and institutions. Taught in Italian.

3-503 (62). ASPECTS OF ITALIAN CIVILIZATION AND CULTURE. (3 cr; prereq 3-501 or #)

Italian civilization and culture as represented by a tendency through the ages, or detailed study of a period. Taught in Italian.

5-012 (115). ITALIAN STYLISTICS. (3 cr; offered alt yrs) Staff

- 5-308 (155). **THE ITALIAN SHORT STORY.** (3 cr; prereq 3-104 or §; offered every 3rd yr) Staff
- 5-320 (173). **CHIVALRIC POETRY: BOIARDO, ARIOSTO, TASSO.** (3 cr; offered alt yrs) Staff
- 5-328 (174). **RENAISSANCE PROSE WRITERS: MACHIAVELLI, CASTIGLIONE.** (3 cr; offered alt yrs) Staff
- 5-330 (152). **MODERN POETRY: GOZZANO TO QUASIMODO.** (3 cr; offered alt yrs) Pipa, Schneider
- 5-384 (151). **MODERN DRAMA: PIRANDELLO TO FABBRI.** (3 cr; offered alt yrs) Pipa, Schneider
- 5-385 (150). **MODERN NARRATIVE: SVEVO TO MORAVIA.** (3 cr; offered alt yrs) Pipa, Schneider
- 5-400/5-401/5-402 (160-161-162). **DANTE: INFERNO, PURGATORIO, PARADISO.** (3 cr per qtr; offered alt yrs) Pipa
- 5-409 (163). **DANTE'S MINOR WORKS.** (3 cr; offered alt yrs) Pipa
- 5-410 (165). **PETRARCH.** (3 cr; offered alt yrs) Pipa
- 5-418 (167). **BOCCACCIO.** (3 cr; offered alt yrs) Staff
- 5-460 (176). **LEOPARDI.** (3 cr; offered alt yrs) Pipa
- 5-465 (175). **MANZONI.** (3 cr; offered alt yrs) Pipa
- 5-601,5-602,5-603 (177,178,179). **ITALIAN LITERATURE IN ENGLISH TRANSLATION.** (3 cr per qtr; prereq §, Δ, fr, soph; knowledge of Italian not required; offered every yr) Schneider
- 5-609 (164). **DANTE (in English).** (3 cr; prereq §; offered when feasible) Staff
- 5-610 (166). **PETRARCH AND PETRARCHISM (in English).** (3 cr; prereq §; offered when feasible) Staff
- 5-701/5-702 (104-105). **ITALIAN LANGUAGE.** (3 cr per qtr; prereq §; offered alt yrs) Mantini
- 5-970 (189). **DIRECTED READINGS.** (2-3 cr) Pipa, Schneider

GENETICS AND CELL BIOLOGY (GCB)

(College of Biological Sciences)

UPPER DIVISION COURSES

- 3-002s (68). **HUMAN GENETICS, SOCIAL AFFAIRS.** (3 cr, §3-022 or Biol 3-070)
An introduction to human genetics with special emphasis on the study of individuals, families, populations, and races with respect to differences in intelligence, behavior, disease, and other matters of social concern. For students in programs not directly related to the biological sciences.
- 3-012s (51). **CELL BIOLOGY.** (3 cr; primarily designed for students other than CBS majors and CLA biology majors; prereq Biol 1-002 or 1-049...Chem 1-004...or 20 cr in math and physical science)
Dynamic aspects of cell structure and macromolecular organization with emphasis on current research.
- 3-022f,w,s (66). **GENETICS.** (3 cr; primarily designed for students other than CBS major and CLA biology majors; prereq Biol 1-002 or equiv)
The mechanisms of heredity, their implications for biological populations and applications to practical problems.
- 3-025f,w,s (67). **LABORATORY: GENETICS.** (2 cr; prereq 3-022 or Biol 3-070)
Genetic problems are explored using both prokaryotic and eukaryotic organisms. The laboratory is scheduled for one meeting per week with an equivalent amount of time reserved for independent work.
- 3-970 (97). **INDEPENDENT STUDY.** (Cr ar; prereq §)
Individual study on selected topics or problems with emphasis on selected readings and use of scientific literature.
- 3-990 (99). **LABORATORY RESEARCH.** (Cr ar; prereq §)
Individual projects on selected topics and problems.

Course Offerings and Major Sequences

5-023su (161). GENETICS AND THE BIOLOGY OF POPULATIONS. (3 cr; prereq [GCB 3-022 or equiv or #])

Primarily designed for secondary school teachers. Emphasis is on elementary development of basic concepts in population genetics and population biology. Topics include population expansion and deterioration of the environment, analysis of gene frequency changes under natural and relaxed selection, genetic loads and reproductive excess, population genetics of quantitative characters, inbreeding, and the genetics of population isolates. Examples are to be drawn largely from human populations.

5-031f,s (140). INTERMEDIATE GENETICS I. (3 cr; prereq Biol 3-070 or GCB 3-022 and BioC 5-002, BioC 5-742 or BioC 5-002 or #)

The mechanics of inheritance. Comparative organization of genetic material in prokaryotic and eukaryotic organisms. The use of mutation, complementation, and recombination as operational criteria for genetic analysis.

5-032w (141). INTERMEDIATE GENETICS II. (3 cr; prereq 5-031)

The action of the gene in molecular, cellular, and organismal development. The mechanisms of storage of genetic information, modes of information transfer and mechanisms of regulating these processes in various biological systems.

5-033s (142). INTERMEDIATE GENETICS III. (3 cr; prereq 5-031 and Biom 5-011)

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.

5-042f (162). POPULATION, QUANTITATIVE GENETICS. (3 cr; prereq 5-033...Biom 5-040 recommended)

Selection with reference to population changes in gene frequencies and means of quantitative characters. Information required for predicting effects of selection and related research. Emphasis is on logical analysis.

5-043s (175). HUMAN GENETICS. (3 cr; prereq 3-022 or #)

Inherited characters in man, particularly in relation to medicine, with some reference to the relation of genetics in marriage and to social conditions.

5-044w (176). METHODS IN HUMAN GENETICS. (3 cr; prereq 5-043 and PubH 5-450 or equiv and #)

Methods for research in human genetics. Importance of appropriate statistical techniques. Use of genetic concepts in exploring new problems. Individual study of current problems and group discussion.

5-052s (121). QUANTITATIVE TECHNIQUES, CELL BIOLOGY. (3 cr; prereq #)

A discussion of methods used to study the growth, behavior and function of cells. Techniques include tissue culture, cell synchronization, isolation of subcellular organelles, assessment of purity of fraction, compartmental analysis in eucaryotic systems, subcellular fractional of organelles, single cell electrophoresis, examples of some basic biological problems and the design of pertinent experimental methods.

5-062w (131). CELLULAR REGULATION. (3 cr; prereq #)

Control of the biosynthesis and function of macromolecules. Topics to be discussed will include the induction and repression of enzyme synthesis, constitutivity, the specific activation and inhibition of enzyme activity by metabolic effectors, regulation of RNA and DNA synthesis, regulation of chromosome replication, steady states of growth and transitions between steady states of growth, control of cell division, and the cycle of cell duplication. Much of the discussion will center on research with microbial systems; but where possible, work with higher organisms will be introduced.

5-082s (132). MEMBRANES AND INTERFACES. (3 cr; prereq #)

The thermodynamics and statistical mechanics of interfaces; the electrical properties of interfaces; experimental methods for the study of gas/liquid and liquid/liquid interfaces; interfaces in biological systems; cell membranes; the plasma membrane; the mitochondrial membranes; special membranous systems within cells; methods for isolation of membranes; chemical reactions at interfaces; the dynamic properties of interfaces; model membrane systems; the cell surface region and cell-contact relations.

GEOGRAPHY (Geog)

Major Sequence in Arts College—

Required Background Courses: Two courses from geography 1-301, 1-311, 1-401, 3-001

Requirements:

A. 30 cr in Upper Division courses in geography including:

1. Two regional courses (3-101, 3-111, 3-121, 3-141, 3-161, 3-181, 3-282, 5-101, 5-102, 5-111, 5-112, 5-113, 5-131, 5-132, 5-171, 5-172, 5-173, 5-174, 5-141, 5-181, 5-211, 5-212, 5-213, 5-221, 5-299)
2. Two topical courses (3-311, 3-341, 3-351, 3-361, 5-321, 5-331, 5-332, 5-333, 5-371, 5-375, 5-376, 5-381, 5-383, 5-391, 5-421, 5-422, 5-433, 5-441, 5-442)
3. Two technique courses (3-511, 3-531, 3-551, 5-511, 5-512, 5-531, 5-532, 5-551, 5-552, 5-571)
4. One field course (5-711, 5-731, 5-732, 5-733, 5-742, 5-743)
5. One course in the history and philosophy of geography (5-801, 5-802, 5-811, 5-899)

General Education—In the Lower Division, Geography 1-301, 1-311, and 1-401 deal with world patterns of resources, population, and production which are an essential part of general education. In the Upper Division, the survey courses of particular countries, continents, or regions of the world offer much of interest to the nonspecialist.

LOWER DIVISION COURSES

- 1-301f,w,s (4f,w,s). **HUMAN GEOGRAPHY.** (5 cr) Hart, Rice, Schwartzberg, Tuan, Webb
 Geography of population and principal ways of life; capacity of earth for future population.
- 1-301Hf,w,s (4Hf,w,s). **HONORS COURSE: HUMAN GEOGRAPHY.** (5 cr; prereq #)
 Students attend lectures in Geog 1-301 and meet with lecturer 2 hours per week in honors discussion section.
- 1-311f,w,s (41f,w,s). **ECONOMIC GEOGRAPHY.** (5 cr) Adams
 Introductory survey and analysis of world patterns of economic activity. Emphasis on raw material occurrence and resource potential, centers of industrial fabrication, and circulation of trade and services.
- 1-311Hf,w,s (41Hf,w,s). **HONORS COURSE: ECONOMIC GEOGRAPHY.** (5 cr; prereq #)
 Students attend lectures in Geog 1-311 and meet with lecturer 1 hour per week in honors discussion section.
- 1-401f,w,s (1f,w,s). **PHYSICAL GEOGRAPHY.** (5 cr) Barrett, Borchert, Skaggs
 Major features of distribution patterns of climate, relief, vegetation and soils; regional differences in problems of physical development.
- 1-401Hf,w,s (1Hf,w,s). **HONORS COURSE: PHYSICAL GEOGRAPHY.** (5 cr; prereq #)
 Students attend lectures in Geog 1-401 and meet with lecturer 2 hours per week in honors discussion section.
- 1-425 (25). **INTRODUCTION TO METEOROLOGY.** (4 cr; prereq high school algebra and physics or #) Baker, Skaggs
 Pre-calculus introduction to nature of the atmosphere and its behavior. Topics include atmospheric composition, structure, stability and motion; precipitation processes, air masses, fronts, cyclones and anticyclones; general weather patterns; meteorological instruments and observations; plotting and analysis of maps; forecasting.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Regional Studies

- 3-101s (66s). **GEOGRAPHY OF UNITED STATES AND CANADA.** (3 cr; prereq 5 cr in geography or #) Hart, Mather
 Examination of manner in which abilities of different peoples have interacted with natural environment in producing regional differentiation of United States and Canada.
- 3-111f (67). **GEOGRAPHY OF MINNESOTA.** (3 cr) Borchert
 Survey of physical resources, population, and commercial production. Field trips in eastern Minnesota.

Course Offerings and Major Sequences

- 3-121w (65). LATIN AMERICA.** (3 cr) Barrett, Mather
Survey: major features of physical and human geography of Latin America.
- 3-141w (64). AFRICA.** (3 cr; prereq 5 cr in geography or #) Porter
Regional differentiation of human groups and environments with special emphasis on culture contact and problems of underdeveloped countries south of the Sahara.
- 3-161f (61). EUROPE.** (3 cr; prereq 5 cr in geography or #) Rice, Webb
Identification and analysis of broad cultural-economic realms in Europe (excluding U.S.S.R.) with brief survey of areal organization of each realm.
- 3-181w (63). SOVIET UNION.** (3 cr) R. Adams
Character of and bases for regional diversity of physical resources, population, agriculture, manufacturing, and transportation in U.S.S.R.
- 3-281f (73). GEOGRAPHY OF TROPICS.** (3 cr; prereq 5 cr in geography or #; offered 1971-72 and alt yrs) Barrett
Investigation of physical and human geography of tropics and bearing of geography on current development.
- 3-282f (74). GEOGRAPHY OF NORTHLANDS.** (3 cr; prereq 5 cr in geography or #) Rice
Examination of environment and historical settlement of Arctic and sub-Arctic regions of world, followed by analysis of effect of varying societal objectives on modern settlement patterns.
- 5-101w/5-102s (130,131). HISTORICAL GEOGRAPHY OF NORTH AMERICA.** (3,3 cr) Lukermann
Sequential analysis of settlement and economy in the changing environment and resource pattern of North America. 5-101: Aboriginal North America through initial phase of frontier settlement. 5-102: Agrarian, industrial, urban and metropolitan phases of settlement.
- 5-111f (134). EASTERN UNITED STATES.** (3 cr) Hart
Physical and human resources east of Great Plains.
- 5-112s (133s). WESTERN UNITED STATES.** (3 cr) Mather
Physical and human resources of western United States.
- 5-113s (137s). CANADA AND ALASKA.** (3 cr; prereq 10 cr in geography or #) Mather
Analysis of physical and human geography. Both internal and external areal relationships.
- 5-131s (141s). MIDDLE AMERICA.** (3 cr) Barrett
Physical and human geography of West Indies and mainland from Mexico to Colombia.
- 5-132f (143f). SOUTH AMERICA.** (3 cr) Mather
Survey of physical resources, population, agriculture, manufacturing, and transportation in countries of South America.
- 5-141 (118). AFRICA: SELECTED TOPICS.** (3 cr; prereq 3-141 or #) Porter
Case studies of characteristic geographical problems of Africa in regional context, including population pressure, water management, industrialization, commercial and subsistence agriculture, and plural societies.
- 5-171w (101w). WESTERN EUROPE.** (3 cr; prereq 5 cr in geography or #) Webb
Physical and human geography considered as a whole, followed by more intensive discussion of selected topics on British Isles, France, Low Countries, Rhine basin.
- 5-172w (102w). EAST CENTRAL EUROPE.** (3 cr; prereq 5 cr in geography or #) Rice
Physical and human geography of East-Central Europe followed by more intensive discussion of population patterns, resources, and industries in Peoples Republics.
- 5-173f (103f). NORDEN.** (3 cr; prereq 5 cr in geography or #) Rice
Cultural and political development of Scandinavia, Finland, and Iceland. Effects of changing resource appraisal upon patterns of economic activity and human occupancy.
- 5-174w (115w). MEDITERRANEAN REGION.** (3 cr; prereq 5 cr in geography or #) Webb
Physical and human geography of lands adjacent to Mediterranean Sea: Greece, Italy, Spain, Portugal, and southern France.
- 5-181s (106). REGIONS OF U.S.S.R.** (3 cr; prereq 3-181 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.
- 5-211 (122). EAST ASIA.** (3 cr prereq 5 cr in geography or #) Hsu
Physical and human geography of China, Korea, and Japan: geographic aspects of population pressure, economic development, and international relations.

- 5-212f (120). **SOUTH ASIA.** (3 cr; prereq 5 cr in geography or #) Schwartzberg
Physical and human geography of India, Pakistan, Ceylon, Afghanistan, and Himalayan kingdoms; geographic aspects of social structure, population pressures, economic development, and international relations.
- 5-213w (121). **SOUTHEAST ASIA.** (3 cr; prereq 10 cr in geography or #)
Physical and human geography of Burma, Thailand, Indochina, Malaya, Indonesia, and Philippines; geographic aspects of population pressure, development of resources, and international relations.
- 5-221w (126). **AUSTRALIA-NEW ZEALAND-OCEANIA.** (3 cr; offered 1970-71 and alt yrs)
Barrett
Physical and human geography of Australia, New Zealand, Polynesia, and Melanesia; modification of aboriginal land use after European contact, current land use trends in non-European societies, and use and modification of environment by Europeans.
- 5-331f (110). **SPATIAL ORGANIZATION OF EUROPE TO EARLY MEDIEVAL TIMES.** (3 cr; prereq 5 cr or #) deSouza
Culture areas of Europe and adjacent regions, including the spread of the neolithic economy, the organization of town and city networks, and the impact of Germanic and other peoples on classical culture regions.
- 5-332w (111). **SPATIAL ORGANIZATION OF MEDIEVAL EUROPE.** (3 cr; prereq 5 cr in geography or 3-161 or #) Rice
Cultural regions of Europe as they had developed by end of Middle Ages. Analysis of these regions as reflected in patterns of trade and network of towns.
- 5-333s (112). **SPATIAL ORGANIZATION OF MODERN EUROPE.** (3 cr; prereq 5 cr in geography, 3-161 or #) Webb
Historical geography of Europe since 17th century. Areal organization in early modern times. Changes in spatial organization of polity, economy, and settlement. Twentieth century Europe as functional region.

Topical Studies

- 3-311f,w,s (71). **MAPS AND MAP INTERPRETATION.** (3 cr; prereq soph, 5 cr in geography or #) Brown, Porter
Uses and abuses of maps. Interpretation of topographic and statistical maps. Survey of map sources, and air photo as a map. Emphasis on map analysis with minimum of drafting.
- 3-341w (78). **GEOGRAPHY OF INDUSTRIALIZATION.** (3 cr; prereq 1-311 or #) Adams, Lukermann
Historical and comparative geography of changing landscape, socioeconomic structure, and trade relations of selected areas in world undergoing industrialization in 18th, 19th, and 20th centuries.
- 3-351s (79). **NORTH AMERICAN RESOURCE MANAGEMENT.** (3 cr; prereq 1-401 or #)
Barrett
Comparative current and historical analysis of factors affecting regional landscapes in Canada, United States, and Mexico; emphasis on interaction of physical setting and institutions; effect of industrialization, urbanization, and population growth on environment.
- 3-361f (75). **ENVIRONMENTAL EVALUATION AND ADAPTATION.** (3 cr; prereq 1-301 or #) Tuan
The making of "worlds" out of "environments"; survey of how different peoples evaluate and adapt to their natural surroundings, with emphasis on past and non-literate cultures.
- 5-321s (163). **POLITICAL GEOGRAPHY.** (3 cr; prereq 1-301 or #) Schwartzberg
Scope and methods of political geography; analysis of selected concepts, problems, and areas.
- 5-371f (165). **URBAN GEOGRAPHY.** (3 cr; prereq 1-301 or #) Webb
Discussion of character and distribution of cities in present-day world, including analysis of their development. Emphasis on internal and external characters and their functional differentiation.
- 5-375w/5-376s (167-168). **AMERICAN CITIES—LOCATION AND GEOGRAPHIC DESIGN.**
(3-3 cr; prereq #) Borchert
Changing regional and local patterns of urban growth in United States; methods and results of projections of future geographic patterns, and their relation to urban planning.

Course Offerings and Major Sequences

- 5-381f (171). GEOGRAPHY OF ECONOMIC LOCALIZATION.** (3 cr; prereq 1-311 or #) Adams, Lukermann
Analysis of localization of economic activity, circulation of resources, and process of industrial regionalization in economics of world.
- 5-383s (172). TRANSPORTATION GEOGRAPHY.** (3 cr; prereq 1-311 or #) Adams
Principles and theory of spatial development of transport systems; interaction of resource exploitation and network growth; model characteristics by commodity and passenger flow analysis; case studies at national, regional and local levels.
- 5-391s (175). RURAL GEOGRAPHY.** (3 cr) Mather
Geographic components and assemblages of rural settlement. World patterns and geographic problems of rural settlement on American scene.
- 5-421f (151). CLIMATOLOGY.** (3 cr; prereq 1-401 or #) Barrett, 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.
- 5-422w (152). ADVANCED CLIMATOLOGY.** (3 cr; prereq 5-421 or #) Barrett, Skaggs
Detailed study of heat and moisture balance of the earth; reception and disposal of precipitation and energy in local environment.
- 5-433w (154). DYNAMIC AND SYNOPTIC CLIMATOLOGY.** (3 cr; prereq 5-421 or #) Skaggs
Application of dynamic and synoptic meteorological theory to broadscale climate genesis; introduction to explanatory climatological models.
- 5-441f (157f). LANDFORM GEOGRAPHY.** (3 cr; prereq 1-401 or #) Brown
Detailed consideration of landform resources in regional setting; emphasis on North America.
- 5-442w (158). GEOMORPHOMETRY.** (3 cr; prereq 5-441 or #) Brown, Skaggs
Analysis of numerical methods for representation of landform shape and geomorphic processes and their theoretical, statistical, and descriptive applications.

Field Studies

- 5-711s (131A). HISTORICAL GEOGRAPHY OF NORTH AMERICA—FIELD COURSE.**
(2 cr; prereq 5-101 or 5-102 or #) Lukermann
Sequential analysis of settlement and economy in changing environment and resource patterns of Minnesota and contiguous states.
- 5-731f (165A). FIELD COURSE.** (3 cr; prereq 15 cr in geography) Webb
Concepts and techniques of field work. Saturdays devoted to field study in eastern Minnesota and neighboring areas.
- 5-732s (168). AMERICAN CITIES—FIELD STUDY.** (3 cr; prereq 5-376 or ¶5-376) Borchert
Directed Field study of urban land use problem in Twin Cities and vicinity. Excursion to another selected Midwestern metropolitan area.
- 5-733f (171A). GEOGRAPHY OF ECONOMIC LOCALIZATION—FIELD STUDY.** (3 cr; prereq ¶5-381 or #) Adams, Lukermann
Analysis of localization of economic activity, circulation of resources, and process of industrial regionalization in economy of Minnesota and contiguous states.
- 5-742 (152A). ADVANCED CLIMATOLOGY: FIELD COURSE.** (3 cr; prereq 5-422 or #) Barrett, Skaggs
Laboratory work and field observations in quantitative description and analysis of climate. Particular emphasis on north central United States.
- 5-743s (157). LANDFORM GEOGRAPHY: FIELD COURSE.** (3 cr; prereq 5-441 or #) Brown
Directed study of field techniques of landform and process analysis. Field study in Twin Cities and neighboring areas.

History and Philosophy of Geography

- 5-801f (160). DEVELOPMENT OF GEOGRAPHIC THOUGHT.** (3 cr; prereq sr, 15 cr in geography) Lukermann
Objectives, subdivisions, concepts, and methods of geography; special reference to different schools of geographic thought as expressed in literature of last century.
- 5-802s (162). GEOGRAPHICAL EXPLORATION AND DISCOVERY.** (3 cr; prereq 5 cr in geography or #) Webb
Extension of geographic horizons of Western society, by discovery of basic land-sea relationships of earth, from Portuguese explorations along coast of Africa down to modern times.

- 5-811w (161). ENVIRONMENTALISM, ENVIRONMENT, AND THE QUALITY OF LIFE.** (3 cr; prereq 3-361 or #) Tuan
 A survey of ideas on environmentalism with special emphasis on those that lead to the organization of the physical environment into human settings (rural and urban) in the belief that they affect life's ideals.

Geographical Techniques

- 3-001 (50). INTRODUCTION TO GEOGRAPHIC INQUIRY.** (3 cr) Lukermann, Porter, others
 An introduction to questions and approaches in geography (e.g. distance, direction, scale, location, hierarchy, metric, and space) with examination of the analyses that these entail.
- 3-511f,w,s (81). INTRODUCTION TO CARTOGRAPHY.** (3 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.
- 3-531f (87). QUANTITATIVE METHODS IN GEOGRAPHY.** (3 cr) Adams, Hart, Skaggs
 Applications of quantitative techniques to problems of classification, measurement, areal association and sampling, and comparative regional analysis. Examples from the geographical literature employing statistical sources commonly used by geographers.
- 3-551w (83w). INTRODUCTION TO REMOTE SENSING.** (4 cr; prereq 10 cr or #) Brown, Skaggs, Porter
 Consideration of the theory and applications of imaging remote sensors to environmental problems. Analysis and interpretation of remote sensor images in geographic studies.
- 5-511w (181). STATISTICAL CARTOGRAPHY.** (3 cr; prereq 3-511, 3-531, or #) Brown, Hsu, Porter
 Analysis of cartographic techniques of representing quantitative data on maps. Principles of generalization. Sampling techniques for areal data and other quantitative techniques related to mapping.
- 5-512s (182). ADVANCED CARTOGRAPHY.** (3 cr; prereq 5-511 or #) Brown, Hsu, Porter
 Advanced statistical mapping techniques; selected topics in cartography: visual perception, automation, spatial statistics, and history of cartography.
- 5-531w (187). QUANTITATIVE RESEARCH DESIGN.** (3 cr; prereq 3-531, Soc 3-801, or #) Adams, Skaggs
 Formulation of quantitative problems for hypothesis testing and model building; applications of data processing facilities to student-selected problems.
- 5-532s (188). AREA SAMPLING AND ANALYSIS.** (3 cr; prereq 3-531, Soc 3-801, or #) Adams, Skaggs
 Design and selection techniques for areally-sampled information; evaluation of sampling error, census, field and mapping methods; sampling error; literature study and individual student project.
- 5-551f (183). ELEMENTS OF REMOTE SENSING.** (3 cr; prereq Δ) Brown, Porter, Skaggs
 Consideration of theory, information content, and geographical interpretation of imaging systems which sense in nonvisible portion of electromagnetic spectrum.
- 5-552s (184). AIR PHOTO INTERPRETATION.** (3 cr; prereq 3-511 or #) Brown, Porter
 Extraction of quantitative and qualitative information from air photos. Analysis and interpretation of physical and cultural phenomena. Air-photo scale control, stereoscopy, and sources.
- 5-571s (185). SOURCE MATERIALS FOR GEOGRAPHIC RESEARCH.** (3 cr; prereq sr, 15 cr in geography)
 Bibliographic aids and archival sources of geographic material at international, national, and local levels. Particular attention given to methods of handling data and to preparation of written reports.

Directed Studies

- 3-970 (70). DIRECTED READINGS.** (1-15 cr) Staff
 Course devised for independent study program and designed to permit student to pursue interests in special reading and/or study.
- 3-980H (90H,91H,92H). UNDERGRADUATE HONORS SEMINAR.** (3 cr; prereq 10 cr in geography, 3.00 GPA and #)
 Supervised investigation of selected topics.
- 3-990. DIRECTED RESEARCH.** (1-15 cr)

Course Offerings and Major Sequences

- 5-299s (196). PROSEMINAR: EAST AND SOUTH ASIA. (3 cr, §Anth 5-971, §Pol 5-486, §Ortl 5-549, and §Hist 5-549; prereq sr; integrating course for students majoring in East and South Asian area studies program) Interdepartmental staff
- 5-899f (197). PROSEMINAR: DEVELOPMENT OF GEOGRAPHIC THOUGHT. (3 cr; prereq sr, 15 cr in geography with B avg overall, or §)
Objectives subdivisions, concepts, and methods of geography; special reference to different schools of geographic thought as expressed in literature of last century.
- 5-900 (193). TOPICS IN GEOGRAPHY. (3 cr; prereq sr or grad and Δ)
Special topics and regions offered by visiting professors in their research fields.
- 5-910f,w,s (191A,191B,191C). INSTITUTE IN GEOGRAPHY. (3,3,3 cr; prereq secondary school tchrs with Bachelor's degree and 10 cr in geography or Δ)
General survey: major topical themes, selected regional case studies, field work, cartographic and statistical methods. Emphasis on historical and cultural approaches in study of geography and use of advanced materials in secondary school teaching.

GEOLOGY AND GEOPHYSICS (Geo)

(School of Earth Sciences, Institute of Technology)

● Major Sequences in Arts College—

- A. Chem 1-004/1-005†, 1-006
- B. Math 1-441, 1-442/1-443/1-444, 3-445 or CICS 3-101
- C. Phys 1-270/1-280/1-290
- D. Biol 1-001/1-002† or Phys 3-500, 3-510
- E. Geo 1-111, 1-112, 3-401, 3-201, 3-651, 3-100, 5-401
- F. Geo 5-110
- G. Two of the following: Geo 5-451, 5-502, 5-503, 5-501, 5-151, 5-301

More complete preparation for graduate work and some degree of specialization can be achieved by electing additional courses in biological or physical sciences. Some recommended sequences are:

- A. Bot 3-201, 5-111, Chem 3-301, 3-302, Geo 5-151
- B. Gen 3-022, Zool 5-071, Biol 3-080, Zool 5-096, Chem 3-301, 3-302, Geo 5-151
- C. Chem 5-520/5-521
- D. Math 5-510, 5-280/5-281, Phys 5-010/5-011/5-012
- E. Geo 5-251, 5-601, 5-611, 5-301, 5-452, CE 3-400.

It is strongly recommended that the sequences in mathematics and chemistry be started in the freshman year and that the sequences in physics and earth sciences be started in the sophomore year.

The Department of Geology and Geophysics offers degree curricula in both the Arts College and the Institute of Technology. Three curricular options are available in I.T.—general geology, mineralogy and petrology, and geophysics.

For the student contemplating a scientific career, it is strongly recommended that he consult the Director of Undergraduate Studies in the department to ascertain which degree program he should pursue. Prospective majors should take Geo 1-111 and Geo 1-112 rather than Geo 1-001 and Geo 1-002.

Honors Opportunities and Graduation with Honors—Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the department office.

Geo 1-001, 1-002 and 3-401 are designed for general education and are recommended for nonmajors interested in understanding the formation and history of the earth. Open to students from any college. Recommended for secondary school science teachers.

LOWER DIVISION COURSES

1-001f,w,s (1). PHYSICAL GEOLOGY. (5 cr; prereq high school physics and chemistry recom-

mended; 3 lect hrs, one 2-hr lab, 1 rec hr per week) Rapp

A first course in geology for science majors, and introduction to scientific method and nature of the earth for others. Survey: main features of physical world, and processes that have formed them. Six to eight homework problems in special fields of geology and geophysics.

1-002f,w,s (2). **HISTORICAL GEOLOGY.** (4 cr; prereq 1-001 or 1-111; 3 lect hrs, one 2-hr lab per wk) Sloan

Evolution of earth from its origin to present; special attention to succession of physical and biological events of past 600 million years.

1-111f (11). **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) Weiblen

Intensive sequence.

1-112s (22). **INTRODUCTORY HISTORICAL GEOLOGY.** (5 cr; for prospective majors and others desiring more intensive course; prereq 1-111 or #; 3 lect hrs, 1 rec hr, and two 2-hr labs per wk) Bright, Swain

Intensive sequence.

UPPER DIVISION COURSES

3-099f,w,s (99). **SENIOR RESEARCH.** (3 cr; prereq sr in geology or geophysics, #)

Research on geological or geophysical problem selected on basis of individual interests and background, leading to written report. Emphasis on independent data collecting (field, laboratory, or both), and analysis of results.

3-100 (65). **INTRODUCTORY FIELD GEOLOGY.** (2 cr; required of and restricted to geology, geophysics, and geological engineering majors; prereq 3-401, 3-201 or #; 1 lect-rec and 4 field hrs per wk)

Methods used in geologic field work and their application to problems in Minnesota geology.

3-201f (63). **INTRODUCTORY STRUCTURAL GEOLOGY.** (4 cr; prereq 3-401, or 5-004 or #; 3 lect and 1 lab-rec hr per wk)

Primary and secondary structures of rocks, mechanics and modes of deformation, and structural techniques. Laboratory exercises in three-dimensional representation and solution of selected structural problems.

3-401s (62). **INTRODUCTORY MINERALOGY.** (5 cr; prereq 1-001, 1-111 or #...1 term college chemistry, Math 1-441; 3 lect and 6 lab hrs per wk) Rapp

Introduction to crystallography, crystal chemistry, and mineralogy. Descriptive and determinative mineralogy. Study of minerals in natural rock systems.

3-651w (64). **INTRODUCTORY SEDIMENTOLOGY AND STRATIGRAPHY.** (3 cr; prereq 3-401; 2 lect and 3 lab hrs per wk) Swain

Sedimentary processes and products with particular reference to modern sedimentary processes and products with particular reference to modern sedimentary environments; principles of physical stratigraphy, correlation, facies, tectonic control, classification of stratigraphic units.

5-002 (120). **STRUCTURAL GEOLOGY.** (3 cr, §3-201 or equiv; not open to geology, geophysics, geo-engineering, mineral resources engineering, and metallurgy-materials science majors; prereq 3-401 or 5-004 or #; 3 lect and 2 lab hrs per wk)

Primary and secondary structures of rocks, mechanics and modes of deformation, and structural techniques. Laboratory exercises in three-dimensional representation and solution of selected structural problems.

5-004s (162). **MINERALOGY.** (4 cr, §3-401; not open to geology, geophysics and geological, mineral and metallurgical engineering majors...open to majors in College of AFHE and postgrad students in education; prereq 1-001 or 1-111 or #...1 term college chemistry, Math 1-442; 3 lect and 6 lab hrs per wk) Rapp

Introduction to crystallography, crystal chemistry, and mineralogy. Descriptive and determinative mineralogy. Study of minerals in natural rock systems.

5-006w (110). **SEDIMENTOLOGY AND STRATIGRAPHY.** (3 cr, §3-651 or equiv; not open to geology, geophysics, geo-engineering, mineral resources engineering, and metallurgy-materials science majors; prereq 3-401; 3 lect and 2 lab hrs per wk) Swain

Sedimentary processes and products with particular reference to modern sedimentary environments; principles of physical stratigraphy, correlation, facies, tectonic control, classification of stratigraphic units.

5-051su (109C). **PHYSICAL GEOLOGY FOR TEACHERS.** (4 cr, §1-001, §1-111; only for students holding degrees in education, prereq 1 term college chemistry or physics)

Course Offerings and Major Sequences

- Introduction to scientific methods and nature of the earth. Survey: main features of physical world and processes that have evoked them.
- 5-052su (122C). HISTORICAL GEOLOGY FOR TEACHERS.** (4 cr, §1-002, §1-112; only for students holding degrees in education; prereq 1-001 or 1-111 or 5-051 or §; laboratory, field work, and seminar)
Introduction to origin of the earth, physical evolution of its crust through geological time, and biological changes that occurred during its history.
- 5-099f,w,s (103). PROBLEMS IN GEOLOGY AND GEOPHYSICS.** (1-6 cr; prereq §)
Individual research in laboratory or field problems at Upper Division or graduate level.
- 5-101 (104). ADVANCED GENERAL GEOLOGY.** (3 cr; open to science majors in any field with supplemental reading by non-geologists; prereq §; offered when demand warrants)
Considers central problems in modern and classical geology through seminar-type discussion, evaluation of professional publications, and special projects.
- 5-102s (111). STRATIGRAPHY.** (3 cr; prereq 3-651 or 5-006) Swain
Analysis of stratigraphy of typical and unique sequences of (a) Precambrian and Paleozoic rocks, or (b) Mesozoic and Cenozoic rocks. Methods of presenting stratigraphic data. Term paper required.
- 5-110 (100). FIELD GEOLOGY.** (9 cr; restricted to students majoring in geology, geophysics, and geological engineering; prereq 3-201, 3-100, and §)
Measurement of stratigraphic sections; study of fossils and igneous, sedimentary, and metamorphic rocks. Geological surveying on aerial photographs and topographic maps. Preparation of geologic maps and cross sections. Study of structural and geomorphic features and geologic setting of mineral deposits.
- 5-111 (101). FIELD GEOLOGY IN MINNESOTA.** (2 cr; primarily for majors in earth science in College of Education; prereq 3-201)
Study of representative field areas in Minnesota to include igneous, metamorphic, sedimentary, and glacial features. Field observations correlated by use of geologic maps.
- 5-151s (105). INTRODUCTION TO PALEONTOLOGY.** (5 cr; prereq 1-002 or 1-112 or §) Sloan
Introduction to morphology and classification of major fossil groups.
- 5-152 (106). INVERTEBRATE PALEONTOLOGY.** (5 cr; prereq 5-151; 3 lect and 4 lab hrs per wk; offered when demand warrants) Bright
Detailed studies of morphology, classification, and ecology of selected groups of invertebrate fossils.
- 5-154f (107). VERTEBRATE PALEONTOLOGY I.** (5 cr; prereq 5-151 or Zool 5-124) Sloan
Morphology, evolution, and stratigraphic distribution of fossil fish, amphibians, reptiles, and birds.
- 5-155w (108). VERTEBRATE PALEONTOLOGY II.** (5 cr; prereq 5-154 or Zool 5-124) Sloan
Morphology, evolution, and stratigraphic distribution of fossil mammals.
- 5-156f (112). MICROPALAEONTOLOGY.** (3 cr; prereq 5-151) Swain
Biology and paleontology of microorganisms of geologic importance including Foraminifera, Radiolaria, flagellate Protista, Diatomaceae, Characea, Ostracoda, and conodonts.
- 5-201w (121). ADVANCED STRUCTURAL GEOLOGY.** (3 cr; prereq 3-201 or 5-002)
Fundamental problems and genesis of secondary structural features; detailed analysis of typical examples. Comprehensive term paper required for graduate credit.
- 5-251s (115). GEOMORPHOLOGY.** (4 cr; prereq 1-002 or 1-112, Math 1-111 or 1-441 or §... Geo 3-401 and Math 1-220 recommended; 3 lect and 2 lab hrs per wk) Hooke
Quantitative study of processes and resulting landforms in humid and arid regions of the earth's surface, in the ocean basins, and on the lunar surface. Topics covered include slope processes, weather, fluvial erosion and deposition, shore processes, wind action, impact phenomena, and tectonics. Field trips; term paper or field project.
- 5-261f (116). GLACIAL GEOLOGY.** (4 cr [5 cr with term paper]; prereq 1-002 or 1-112)
Formation and characteristics of modern glaciers; erosional and depositional features of Pleistocene glaciers; history of Quaternary environmental changes in glaciated and non-glaciated areas. Field trips.
- 5-262w (117). PLEISTOCENE GEOLOGY.** (3 cr; prereq 5-261) Wright
Problems in Pleistocene history of glaciated and non-glaciated areas, particularly North America, Europe, and the Mediterranean. Relation of Pleistocene climatic changes to soils, biogeography, and archaeology. Pollen analysis.

- 5-255 (119). GLACIOLOGY.** (3 cr; prereq Math 1-250 or equiv or #; offered 1970-71 and alt yrs) Hooke
Theories of glacier flow. Internal structures and heat flow in glaciers. Reading assignments, problems, term paper.
- 5-252f (118). PROBLEMS IN GEOMORPHOLOGY.** (3 cr; prereq 5-251; offered 1969-70 and alt yrs) Hooke
Detailed study of selected geomorphic processes. Emphasis on fluvial processes and arid region geomorphology.
- 5-301 (149). INTRODUCTORY GEOCHEMISTRY.** (3 cr; prereq Chem 1-006, Chem 5-501 of 5-520 or ¶) Hall
Application of solution chemistry to geologic problems. Solubility and stability of sedimentary and hydrothermal minerals. Ocean-water chemistry and history of atmosphere and oceans. Chemistry of ore-forming fluids and formation of hydro-thermal ore deposits.
- 5-302f (150). GENERAL GEOCHEMISTRY.** (3 cr; prereq Chem 5-502 or 5-521 or #) Murthy
Introduction to some basic principles and data of geochemistry, origin and cosmic abundance of elements, structure and composition of the earth, and geochemistry of some major elements in earth's crust and mantle.
- 5-303w (151). NUCLEAR GEOLOGY.** (3 cr; prereq 5-452, 5-302 or #; offered 1970-71 and alt yrs) Murthy
Includes studies of radioactive decay schemes and nuclear properties of certain elements in geochronology and geochemical processes such as origin of igneous rocks, continents, and early history of earth and solar system.
- 5-309w (152). PROBLEMS IN GEOCHEMISTRY.** (2 cr; prereq 5-303 or #; offered 1969-70 and alt yrs) Murthy
Selected topics.
- 5-351 (155). MINERAL DEPOSITS I.** (3 cr; prereq 5-452 or #) Hall, Sawkins
Nature and distribution of mineral deposits, and analysis of processes by which elements are concentrated in magmatic, hydrothermal, sedimentary, and surface environments.
- 5-352 (156). MINERAL DEPOSITS II.** (5 cr; prereq 3-201 or 5-002, 5-452, 5-351, or #) Sawkins
Lecture and seminar course dealing with the major types of metal deposits and their regional tectonic setting. Detailed discussion of type examples—their structural setting, mineralogy and genesis. Utilization of genetic concepts in mineral exploration.
- 5-361f (157). MINERAL FUEL DEPOSITS.** (3 cr; prereq 3-651, or 5-006, 3-201 or 5-002 or #) Swain
Origin and distribution of petroleum and coal deposits; source materials, reservoir rocks and structures, stratigraphic distribution of important deposits.
- 5-401f (140). MINERAL SYSTEMS I.** (3 cr; prereq 3-401 or #, trigonometry, 1 yr college physics and chemistry; 3 lect and 2 lab hrs per wk) Zoltai
Basic and compound symmetry elements. Derivation and study of point groups, coordinate systems, crystal forms, lattices, plane groups and space groups. Introduction to x-ray diffraction. Introduction to crystal chemistry and crystal structures.
- 5-402w (160). X-RAY MINERALOGY.** (3 cr; prereq 5-401 or #) Zoltai
Physics of x-rays. Diffraction of x-rays by crystalline material. Description of x-ray powder instruments. Use of powder pattern for mineral identification and for mineralogical and crystallographical research.
- 5-403s (161). SINGLE CRYSTAL X-RAY DIFFRACTION.** (2 cr; prereq 5-402 or #) Zoltai
Introduction to principles and practice of single crystal x-ray diffraction. Lattice and space group determination. Introduction to crystal structure determination.
- 5-411s (163). ELECTRON MICROPROBE ANALYSIS.** (3 cr; prereq Chem 5-504 or Phys 3-510 or Geo 5-402 or #) Weiblen
Introduction to theory of electron optics, review of x-ray fluorescence. Electron microprobe analysis with mineral and pure element standards.
- 5-451 (141). OPTICAL MINERALOGY AND PETROGRAPHY.** (4 cr; primarily for nongeology grad students; prereq 3-401 or #; 3 lect, 4 lab hrs per wk)
Behavior of isotropic and anisotropic media in polarized light. Optical properties of minerals and their determination. Introduction to petrography.
- 5-452s (142). MINERAL SYSTEMS II.** (3 cr; prereq 5-451, Chem 5-502 or 5-521, Math 1-240)
Petrology; phase equilibria, mineral and rock associations, textures and structures developed through igneous and metamorphic processes. Laboratory and term paper.

Course Offerings and Major Sequences

- 5-453f (145). PHASE EQUILIBRIA IN MINERAL SYSTEMS.** (3 cr; prereq 5-451, chem 5-521 or 5-504; offered 1970-71 and alt yrs) Phinney
Graphical and mathematical treatment of one-, two-, three-, and four-component systems. Includes phase rule, open vs. closed systems, and effects of disequilibrium.
- 5-454w (146). IGNEOUS PETROLOGY.** (3 cr; prereq 5-453; offered 1970-71 and alt yrs) Phinney
Igneous processes in light of experimental data and theory. Discussion of classical studies of igneous rock associations. Term paper required.
- 5-455s (147). METAMORPHIC PETROLOGY.** (3 cr; prereq 5-454; offered 1970-71 and alt yrs) Phinney
Metamorphic processes in light of experimental data and theory. Discussion of classical studies in metamorphism. Term paper required.
- 5-501w (171). INTRODUCTION TO EARTHQUAKE SEISMOLOGY.** (3 cr; prereq Phys 1-230 and Geo 1-001 or #)
Physics and geology of earthquakes; causes, effects, distribution, seismic waves.
- 5-502 (170A). EARTH PHYSICS I.** (3 cr; prereq Phys 1-230) Braslau
Magnetic and gravity fields of the earth.
- 5-503 (170B). EARTH PHYSICS II.** (3 cr; prereq Phys 1-230) Roy
Internal constitution of the earth, thermal history, geochronology.
- 5-511s (175). PRINCIPLES OF GRAVITY AND MAGNETIC EXPLORATION.** (3 cr; prereq Phys 1-230)
Instrumentation, surveying techniques, reduction of data, interpretation, case histories.
- 5-512w (176). PRINCIPLES OF SEISMIC EXPLORATION.** (3 cr; prereq Phys 1-230)
Reflection and refraction seismology; theory, interpretation, instruments.
- 5-513 (177). PRINCIPLES OF ELECTRICAL EXPLORATION.** (3 cr; prereq Phys 1-230)
Resistivity, electromagnetic induced polarization, and other methods.
- 5-521 (175A). PRINCIPLES OF GRAVITY AND MAGNETIC EXPLORATION.** (2 cr; prereq Phys 1-230) Roy
Same as Geo 5-511 but without laboratory; for civil engineering and geo-engineering students.
- 5-522 (176A). PRINCIPLES OF REFRACTION SEISMIC EXPLORATION.** (2 cr, §5-512; principally for civil engineering and geo-engineering students; prereq Phys 1-230)
Seismic wave theory; refraction seismology.
- 5-523 (177A). PRINCIPLES OF ELECTRICAL EXPLORATION.** (2 cr; prereq Phys 1-230)
Non laboratory version of Geo 5-514 for civil engineering and geo-engineering students.
- 5-531 (178). LINEAR DATA PROCESSING WITH GEOPHYSICAL APPLICATIONS.** (2 cr; prereq 5-513 and EE 5-001 or #; offered when demand warrants) Mooney
Geophysical applications of linear system and random variable theory.
- 5-601f (128). LIMNOLOGY.** (4 cr, §Ecol 128; prereq Chem 1-005 or equiv and #) Shapiro
Description and analysis of events occurring in lakes, reservoirs, and ponds, beginning with their origins and progressing through study of their physics, chemistry, and biology. Emphasis on interrelationships of these parameters, and on effects of civilization on lakes. Laboratory, field trips.
- 5-611s (131). GROUND WATER GEOLOGY.** (3 cr; prereq 1-001 or 1-111, Math 1-230, 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.
- 5-612 (132). ANALYTICAL GEOHYDROLOGY.** (3 cr; prereq Geo 5-611, Math 1-240 or 5-601, CE 3-400 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.
- 5-651w (125). SEDIMENTARY GEOCHEMISTRY.** (4 cr; prereq Chem 5-504 or #; 3 lect and 2 lab hrs per wk)
Properties of bulk and absorbed water. Phase relations from electrode measurements. Thermodynamic and kinetic implications of defective crystal structures. Stable isotope studies.
- 5-652s (126). SEDIMENTARY PETROLOGY.** (4 cr; prereq 3-651 or 5-006 or #; 3 lect and 2 lab hrs per wk)

Mineralogy, textures, and structures of sedimentary rocks. Role of tectonic framework. Differential effects of weathering and transport. Modern classification schemes.

GERMAN (Ger)

● **Major Sequence in Arts College**—35 cr in courses numbered 3-104 or above, including 3-401, 3-402 and at least 12 other cr in literary courses.

Admission to German Department Honors Program—All German majors with a 3.0 overall grade point average and a 3.0 grade point average in German courses are eligible to become candidates for honors. Application for admission to the German honors program should be made at the Honors Program Office, 115 Johnston Hall. The application will then be sent to the departmental chairman for approval.

Graduation with Honors in German—In order to graduate with honors in German, a student must complete at least 60 cr in Upper Division courses at the University of Minnesota, and he must complete all the requirements of the German Departmental honors program. The minimum overall grade point averages are for *cum laude*, 3.0; for *magna cum laude*, 3.25; for *summa cum laude*, 3.4. All honors candidates must register for German 3-341, 3-342 with departmental permission.

Candidates for the degree *summa cum laude* must present an acceptable thesis written under the guidance of a professor chosen by the candidate in consultation with his adviser and the departmental chairman. The thesis will be judged acceptable or unacceptable by a committee which will be selected by the Honors Council.

Candidates for *summa cum laude* honors must also pass a comprehensive oral examination in language and literature. The examination is conducted in German.

● **Requirements for a Teacher's Certificate**—for specialized curriculum see *College of Education Bulletin*.

LOWER DIVISION COURSES

Dut 1-201f/1-202w/1-203s (1-2-3). **BEGINNING DUTCH.** (5-5-3 cr)

Basic experience in speaking, reading, and understanding Dutch language and structure through acquisition of basic speech patterns in the first two quarters and reading and analysis of literary texts in the third quarter. Knowledge of German recommended but not required.

There are three first-year German sequences, Ger 1-001/1-002/1-003, 1-101/1-102/1-103, and 1-201/1-202/1-203. A student in the 1-001/1-002/1-003 sequence must register for Ger 1-004/1-005/1-006 if he continues. The other two sequences prepare students for Ger 1-301. The student should study the description of each sequence and choose the one best suited to his needs and interests. Credit can be earned in only one of these sequences.

1-001f/1-002w/1-003s (1-2-3). **BEGINNING GERMAN: ORAL APPROACH.** (5-5-5 cr,

§corresponding qtrs of 1-101/1-102/1-103, 1-201/1-202/1-203, or HS German; lectures on CCTV twice a wk, small drill sections 3 times a wk) C. Wood

Speaking and oral comprehension developed through acquisition of basic speech patterns and knowledge of German structure. Reading knowledge developed in later part of course.

1-004f/1-005w/1-006s (7-8-9). **INTERMEDIATE GERMAN.** (3-3-4 cr; prereq 1-003 or #;

not open to students who have had 1-101/1-102/1-103 or 1-201/1-202/1-203; 3 class meetings a wk) C. Wood

1-101f,w/1-102f,w,s/1-103f,w,s (1A-2A-3A). **BEGINNING GERMAN: ORAL APPROACH.** (5-5-5 cr; 5 class meetings per wk)

Basic experiences in speaking, reading and understanding German language and structure through acquisition of basic speech patterns and reading and analysis of texts.

Course Offerings and Major Sequences

- 1-201f/1-202w/1-203s (1B-2B-3B). BEGINNING GERMAN: LANGUAGE AND CULTURE.** (5-5-5 cr; 5 class meetings per wk)
Stresses rapid progress in comprehension of written and spoken German and provides essential minimum speaking knowledge. Texts introduce writers such as Goethe, Heine, Thomas Mann.
- 1-211Hf/1-212Hw (1H-2H). HONORS COURSE: BEGINNING GERMAN.** (5-5 cr, plus 5 cr on passing special exam after completing the 2 qtrs; for students of high ability as indicated by their college entrance records; prereq §; 5 class meetings per wk)
Covers material of 1-201/1-202/1-203 sequence.
- 1-301f,w,s (4). INTERMEDIATE GERMAN.** (3 cr, §1-003; prereq 1-103 or 1-203 or 3 yrs high school German)
- 1-302f,w,s (5). INTERMEDIATE GERMAN.** (3 cr, §1-003; prereq 1-103 or 1-203 or 3 yrs high school German or §)

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-011/3-012/3013 (57-58-59). COMPOSITION AND CONVERSATION.** (3-3-3 cr; prereq 1-301, 1-302)
Review of German grammar. Emphasis on colloquial usage and original compositions. Systematic development of vocabulary in areas which relate to everyday life and practice in the use of spoken German.
- 3-014/3-015/3-016. ADVANCED COMPOSITION AND CONVERSATION.** (3-3-3 cr; prereq 3-013)
- 3-040w,s (69). GERMAN PLAY.** (1 or 2 cr; prereq 1-003, 1-103, or 1-203)
Practice in use of standard German through participation in dramatic productions.
- 3-104f,w,s (56A). READING AND ANALYSIS OF LITERARY TEXTS.** (3 cr; not open to students who have had literature courses 3-301 or above; prereq 1-301 or 4 yrs high school German)
Short stories read to develop reading fluency and appreciation of literary values.
- 3-105f,w,s (56B). INTERPRETATION OF LITERATURE.** (3 cr; recommended especially for German majors and honors students; prereq 3-104 or §)
Instructor demonstrates basic techniques of literary interpretation and familiarizes students with necessary terminology. Oral and written interpretations by students are analyzed and evaluated in class.
- 3-201f,3-202w,3-203s (94,95,96). SURVEY OF LITERATURE.** (3,3,3 cr; recommended for all undergrad majors; prereq 3 cr in courses 3-301 or above)
Reading of significant literary works. Lectures on history and development of German literature. Taught in German. 3-201: Early beginnings to 18th century. 3-202: From 18th century to end of Goethe period. 3-203: Romanticism to 20th century.
- 3-301f,3-302w,3-303s (70,71,72). LYRIC POETRY FROM GOETHE TO RILKE.** (3,3,3 cr; prereq 3-104 or §) F. Wood
3-301: Goethe period. 3-302: Heine to end of 19th century. 3-303: Twentieth century.
- 3-311f,3-312w,3-313s (73,74,75). GERMAN DRAMA FROM LESSING TO PRESENT.** (3,3,3 cr; prereq 3-104, or 1-301 and Δ) Menze
Reading and analysis of outstanding German dramatic works. 3-311: Classical period. 3-312: Nineteenth century. 3-313: Naturalism, impressionism, expressionism.
- 3-321f, 3-322w, 3-323s (76,77,78). GERMAN PROSE OF 19th AND 20th CENTURIES.** (3,3,3 cr; prereq 3-104 or §)
Selected Novellen by renowned German prose writers. Taught in German. 3-321: Nineteenth century. 3-322 and 3-323: Writers representative of literary movements of 20th century.
- 3-331,3-332 (81, 82). DIE DEUTSCHE KOMODIE.** (2,2 cr; prereq 6 cr in literature courses 3-301 or above) Hirschbach
- 3-341Hf/3-342Hw (89H-90H). HONORS COURSE: PROSEMINAR IN GERMAN.** (3-3 cr; prereq candidacy for honors in German) Taraba
3-341H: Lectures on a significant theme in German literature supplemented by discussion of assigned readings. Lectures also by various staff members in areas of their competence. 3-342H: Students write papers supervised by professors of their choice.

- 3-401f,3-402w (97,98). **LITERATURE OF THE CLASSICAL PERIOD.** (3,3 cr; required of all Arts College German majors; prereq 9 cr in courses 3-301 and above) Ramras
Reading of works by Klopstock, Herder, Wieland, Lessing, Goethe, and Schiller.
- 3-403s (99). **FAUST I.** (3 cr; prereq 9 cr in courses above 3-301) Ramras
- 3-501 (68). **CONTEMPORARY GERMANY.** (3 cr; prereq 3-104, or 1-301 and Δ)
Introduction to culture and civilization of present-day Germany.
- 3-511f, 3-512w, 3-513 (91,92,93). **GERMAN CIVILIZATION AND CULTURE.** (3,3,3 cr; prereq 3 cr in literature courses 3-301 and above) Weiss
Survey of important movements and leading personalities in art, music, science, religion, and education. Class discussions and lectures supplemented with demonstration materials. Taught in German.
- 3-601f,3-602w,3-603s (53,54,55). **GERMAN LITERATURE IN TRANSLATION.** (2,2,2 cr)
Requires no knowledge of German. Representative literary works from medieval to modern times read in translation and related to other literatures. Cannot be taken by German majors and minors for credit towards major or minor.
- 3-701 (80). **HISTORY OF GERMAN LANGUAGE.** (3 cr; prereq 6 cr in literature courses 3-301 or above) C. Wood
- 3-702 (79). **BEGINNING MIDDLE HIGH GERMAN.** (3 cr; prereq 6 cr in literature courses 3-301 or above) C. Wood, Firchow, Wakefield
Middle High German grammar. Reading of selected Middle High German literary texts. For juniors and seniors. Knowledge of modern German recommended.

Courses with the new number prefix of 5 are open to seniors upon recommendation of advisers. Prerequisites are 14 cr in literature courses numbered 3-301 and above or equivalent (except for specific course prerequisites).

Composition and Bibliography

- 5-011/5-012/5-013 (103,104,105). **GERMAN STYLE AND COMPOSITION.** (1-1-1 cr; prereq 3-016 or equiv)

Literature

- 5-101/5-102+ (107-108). **THE STRUCTURE OF MODERN GERMAN.** (3 cr per qtr) Firchow, C. Wood
5-101: German Phonology. 5-102: German structure.
- 5-111,5-112,5-113 (159A,159B,159C). **FUNDAMENTALS OF THE STUDY OF GERMAN LITERATURE.** (3 cr per qtr) Hirschbach, Ramras
5-111: History of literary studies and criticism. 5-112: Study and interpretation of literature. 5-113: Bibliography.
- 5-201,5-202,5-203,5-204 (116,117,118,150). **THE MIDDLE HIGH GERMAN LITERATURE.** (3 cr per qtr; prereq 5-723 or #) Firchow
- 5-211 (151). **LITERATURE FROM 1500 to 1600.** (3 cr) Weiss
- 5-212/5-213 (153-154). **GERMAN LITERATURE OF THE 17TH CENTURY.** (3 cr per qtr) Weiss
- 5-214,5-215,5-216 (155,156,157). **GERMAN LITERATURE FROM 1700 to 1800.** (3 cr per qtr)
Tendencies, developments, movements, ideas, and forms of 18th century literature. 5-214: Enlightenment. 5-215: Storm and Stress. 5-216: The Goethe period.
- 5-217,5-218,5-219 (146,147,148). **LITERATURE OF THE 19TH CENTURY.** (3 cr per qtr) Taraba
Literature, literary movements and influences represented in drama, lyric and shorter prose forms.
- 5-221,5-222,5-223 (170,171,172). **ROMANTICISM.** (3 cr per qtr) Menze
- 5-231,5-232,5-233 (183,184,185). **STUDIES IN THE LITERATURE OF THE 20TH CENTURY.** (3 cr per qtr) F. Wood
Literature movements represented in drama, lyric, and shorter prose forms.
- 5-241,5-242 (189A,189B). **EXPRESSIONISM IN GERMAN LITERATURE.** (3 cr) Hirschbach

Course Offerings and Major Sequences

- 5-251,5-252,5-253 (190,191,192). STUDIES IN ENGLISH-GERMAN LITERARY RELATIONS. (3 cr per qtr)
- 5-254,5-255,5-256 (190A,191A,192A). STUDIES IN FRENCH-GERMAN LITERARY RELATIONS. (3 cr per qtr) F. Wood
- 5-261,5-262 (196,197). GERMAN LITERATURE SINCE WORLD WAR II. (3 cr per qtr)
- 5-301,5-302,5-303 (173,174,175). THE 19TH-CENTURY NOVEL. (3 cr per qtr) Menze
- 5-304,5-305,5-306 (134,135,136). NONFICTIONAL PROSE OF THE 18TH, 19TH AND 20TH CENTURIES. (3 cr per qtr)
- 5-307,5-308,5-309 (143,144,145). THE GERMAN NOVELLE: FROM GOETHE TO KAFKA. (3 cr per qtr) Taraba
- 5-311,5-312,5-313 (180,181,182). THE 20TH-CENTURY NOVEL. (3 cr per qtr) Ramras, F. Wood, Hirschbach
- 5-314,5-315,5-316 (158A,158B,158C). THE 18TH-CENTURY DRAMA: GOTTSCHED, JOHANN ELIAS SCHLEGEL, GELLERT, IFFLAND, KOTZEBUE. (3 cr per qtr)
- 5-321,5-322,5-323 (176,177,178). THE 19TH-CENTURY DRAMA. (3 cr per qtr) Menze
- 5-324,5-325,5-326 (179A-B-C). GERMAN DRAMA FROM NATURALISM TO THE PRESENT. (3 cr per qtr) Hirschbach, Weiss
5-324: from 1880 to 1910. 5-325,5-326: from 1910 to present.
- 5-333,5-334,5-335 (186,187,188). LYRIC POETRY. (3 cr per qtr) F. Wood
5-333: Renaissance through Sturm und Drang. 5-334: Goethe through Romanticism. 5-335: Heine to Rilke.
- 5-401,5-402 (160,161). KLOPSTOCK, WIELAND, HERDER. (3 cr per qtr) Ramras
- 5-403/5-404 (162A-B). LESSING. (3 cr per qtr) Hirschbach
- 5-405,5-406,5-407 (163,164,165). GOETHE. (3 cr per qtr) Ramras
- 5-411,5-412,5-413 (166,167,168). SCHILLER. (3 cr per qtr) Ramras
- 5-601,5-602,5-603 (140,141,142). DRAMA IN TRANSLATION. (3 cr per qtr; prereq 9 cr in theatre arts or in literature above 3-001; no knowledge of German language required; cannot be used for German major or minor) Menze
- 5-811,5-812,5-813 (193,194,195). STUDIES IN LITERARY THEORY AND CRITICISM. (3 cr per qtr) Ramras
- 5-970 (149). DIRECTED READING. (1-5 cr)

Germanic Philology

- 5-701 (124). PHILOLOGICAL PROSEMINAR: BIBLIOGRAPHY AND METHODS. (3 cr) Firchow
- 5-711/5-712† (122-123). HISTORY OF THE GERMAN LANGUAGE. (3 cr per qtr) Firchow, C. Wood
- 5-721/5-722/5-723† (110-111-112). MIDDLE HIGH GERMAN LANGUAGE. (3 cr per qtr; prereq 3-201 and 11 cr in courses 3-301 and above or equiv) C. Wood, Wakefield
- 5-731/5-732/5-733† (119-120-121). OLD HIGH GERMAN. (3 cr per qtr; prereq 5-723 or #) Firchow
- 5-734 (126). OLD SAXON. (3 cr; prereq 5-733) C. Wood
- 5-741 (113). GOTHIC. (3 cr; prereq 3-701 and 11 cr in courses 3-301 and above or equiv) C. Wood
- 5-742/5-743† (114-115). METHODS OF COMPARATIVE GERMANIC LINGUISTICS. (3 cr per qtr; prereq 5-741) C. Wood
- 5-744 (131). READINGS IN PHILOLOGY. (3 cr; prereq #) C. Wood, Firchow
- 5-751 (127). MANUSCRIPT READINGS AND TEXT RECONSTRUCTION. (3 cr; prereq #) Firchow
- 5-752 (125). RUNIC INSCRIPTIONS. (3 cr; prereq #) C. Wood
- 5-761,5-762,5-763 (128,129,130). PHILOLOGICAL SEMINAR. (3 cr per qtr; prereq #) Firchow, C. Wood

GREEK

See Classics

GUJARATI

See South Asian Languages

HEBREW

See Middle Eastern Languages

HINDI

See South Asian Languages

HISTORY (Hist)

● **Major Sequence in Arts College**—Students planning to major in history should obtain the *Description of the Undergraduate History Major* from the departmental office as soon as possible. They should also check the undergraduate bulletin board located outside of the departmental office for any changes subsequent to the printing of this bulletin.

Required Background Courses:

Two complete surveys chosen from the following: Hist 1-001, 1-002, 1-003 or 1-151, 1-152, 1-153 or 1-101, 1-102, 1-103 or 1-051, 1-052, 1-053 or 1-451, 1-452, 1-453 or 1-301, 1-302 or 1-431, 1-432, 1-433. The student is strongly recommended to complete these two surveys while in Lower Division. Upper Division majors who have not completed the prerequisite surveys must take Hist 3-051, 3-052, 3-053 or 3-101, 3-102, 3-103 or 3-151, 3-152, 3-153 or 3-451, 3-452, 3-453 or 1-301, 1-302 or 1-431, 1-432, 1-433.

Requirements: A minimum of 33 cr in history courses numbered 3-500 or above selected to meet the following requirements:

- A. A minimum of 18 cr in 6 or 9-hour sequence courses (two consecutive quarters of a 9-cr sequence counts as a 6-cr sequence course).
- B. A minimum of 9 cr from both the modern and pre-modern categories of courses.
- C. A minimum of 18 cr in one of the five areas of concentration.
- D. Hist 3-961—the 3-cr major paper course. During each Spring quarter, every history major seeking to graduate during the next academic year must sign up for Hist 3-961 in the department office, indicating the quarter in which he will take the course and the general area of his work. This course involves the writing of a research paper.

The student should consult the *"Description of the Undergraduate History Major"* for a listing of the pre-modern categories of courses and for the five areas of concentration.

In special cases students will be allowed to substitute sequence courses numbered 3-500 or above in lieu of the prerequisite survey courses. Such substituted courses may not be used to fulfill the Upper Division major requirements. Upper Division majors who have completed the two prerequisite survey courses may take a maximum of 10 cr from the following: Hist 3-051, 3-052, 3-053 or 3-101, 3-102, 3-103 or 3-451, 3-452, 3-453. These credits may be counted toward the Upper Division major requirements although they may not be used for the student's area of concentration. Other courses numbered below 3-500 may not be used for Upper Division credit in satisfying the major requirements.

Course Offerings and Major Sequences

Students planning to do advanced work in history should acquire a reading knowledge of French, German, or other appropriate languages in their early undergraduate years.

Requirements for Honors in History—Students majoring in history who have a University average of 3.00 and an average of 3.25 in history courses may try for honors in history.

In the junior year the candidate for honors in history will be expected to take one 6-cr Upper Division sequence course and Hist 3-951H/3-952H. If for one reason or another it is not possible to take the honors course in the junior year, another 6-cr Upper Division course may be substituted; the honors course would then be taken in the senior year. The department strongly urges that Hist 3-951H/3-952H be taken in the junior year. In the senior year the honors candidate will take a 9-cr sequence course and one of the proseminars (numbered 5-500 or above) in which he will prepare a research paper.

When program is completed a committee (made up of chairman of department, professor in charge of the honors course, and professor under whom research paper was written) will pass upon the award of honors, high honors, or highest honors in history.

Requirement for a Teacher's Certificate (applicable only to students in the College of Education)—*Major Recommendation*: a minimum of 48 cr; at least 30 cr must be in Upper Division courses numbered 3-500 or above. See the *College of Education Bulletin* for details. *Minor Recommendation*: a minimum of 29 cr of which at least 12 cr must be in courses numbered 3-500 or above.

No major recommendation to teach history will be given unless the candidate has taken the general course in American History, Hist 1-301, 1-302 or equivalent. For other history courses the same provisions apply as for Arts College majors in history, noted above.

For a specialized minor curriculum in social studies see the *College of Education Bulletin*.

General Education—The offerings of the Department of History numbered below 5-500 attract and are designed to serve the needs of students from all areas of the University. For Lower Division students, any of the courses listed as such will fit the category of general education and provide the basis for more advanced work. For Upper Division students who have had no previous work in history, the department particularly recommends courses numbered between 3-001 and 3-499.

LOWER DIVISION COURSES

1-001f, 1-002w, 1-003s (1, 2, 3). **INTRODUCTION TO MODERN EUROPEAN HISTORY.** (3,3,3 cr; not open to jrs, srs) Kieft, Munholland, Noonan, Pfanze, Rudolph, Thayer, Wright

1-001: Development of western European civilization to 1715. 1-002: Revolution, liberalism, and nationalism, to 1870. 1-003: 1870 to recent times.

1-001Hf, 1-002Hw, 1-003Hs (1H, 2H, 3H). **HONORS COURSE: INTRODUCTION TO MODERN EUROPEAN HISTORY.** (3,3,3 cr; prereq #) Kieft, Munholland, Noonan, Pfanze, Rudolph, Thayer, Wright

1-051f, 1-052w, 1-053s (14, 15, 16). **ANCIENT CIVILIZATION.** (3,3,3 cr) T. Jones, Kelly
1-051: Near East to 500 B.C. 1-052: Greek civilization, 750 to 323 B.C. 1-053: Roman civilization to A.D. 305.

1-061f, 1-062w, 1-063s (14A, 15A, 16A). **ANCIENT CIVILIZATION WITH BASIC READINGS.** (5,5,5 cr) T. Jones, Kelly
Students attend lectures in 1-051, 1-052, 1-053 and meet 2 additional hrs per week to discuss assigned readings.

1-101f, 1-102w, 1-103s (11, 12, 13). **MEDIEVAL AND RENAISSANCE HISTORY.** (3,3,3 cr) Bachrach, Hoyt
1-101: Early Middle Ages. 1-102: High Middle Ages. 1-103: Later Middle Ages and early Renaissance.

- 1-111f, 1-112w, 1-113s (11A, 12A, 13A). **MEDIEVAL AND RENAISSANCE HISTORY WITH BASIC READINGS.** (5,5,5 cr; prereq #) Bachrach, Hoyt
Students attend lectures in 1-101, 1-102, 1-103 and meet two additional hours a week to discuss readings and historiographical problems relative to Medieval and Renaissance history.
- 1-121Hf, 1-122Hw, 1-123Hs (11H, 12H, 13H). **HONORS COURSE: MEDIEVAL, RENAISSANCE HISTORY.** (1,1,1 cr; prereq #...must be taken concurrently with 1-101, 1-102, 1-103 or 1-111, 1-112, 1-113) Bachrach, Hoyt
Students attend lectures in 1-101, 1-102, 1-103 and meet with lecturer 2 hours every fortnight to discuss readings, problems in historiography, and research methods relative to Medieval and Renaissance history.
- 1-151f, 1-152w, 1-153s (4, 5, 6). **ENGLISH HISTORY.** (3,3,3 cr) Altholz
1-151: Medieval England. 1-152: Tudors, Stuarts, and Hanoverians. 1-153: 1760 to the present.
- 1-301, 1-302 (23, 24). **AMERICAN HISTORY.** (4,4 cr; prereq soph; offered qtrly) Berman, Brauer, Carroll, Chambers, Green, Howe, A. Jones, McCrary, Modell, Murphy, Spear
1-301: Colonial, early national period through sectional crisis. 1-302: Modern America.
- 1-301H, 1-302H (23H, 24H). **HONORS COURSE: AMERICAN HISTORY.** (4,4 cr; prereq soph and #) Berman, Brauer, Carroll, Chambers, Green, Howe, A. Jones, McCrary, Modell, Murphy, Spear
- 1-431, 1-432, 1-433 (30, 31, 32). **HISTORY OF AFRICA.** (3,3,3 cr, \$5-431, \$5-432, \$5-433) Coifman, Isaacman
1-431: To 1500. 1-432: From 1500 to the 19th century establishment of European rule. 1-433: From the 19th century European arrival to the present.
- 1-451f, 1-452w, 1-453s (17, 18, 19). **HISTORY OF ASIA.** (5,5,5 cr) Farmer, Kopf, Marshall, Taylor
1-451: China, Japan, and India to A.D. 1200. 1-452: Asia, A.D. 1200 to 1800. 1-453: Modern Asia: impact of Europe, nationalism.
- 1-951f, 1-952w, 1-953s (41, 42, 43). **WORLD MILITARY HISTORY: A SURVEY.** (2,2,2 cr, \$Mil 1-101, \$Mil 1-102, \$Mil 1-103; may not be used to satisfy requirements for major in history) Loehr
1-951: From ancient times to the Thirty Years War. 1-952: From 1648 to the Crimean War. 1-953: From the American Civil War to World War II.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-001f, 3-002w, 3-003s (53, 54, 55). **INTRODUCTION TO MODERN EUROPEAN HISTORY.** (3,3,3 cr, \$1-001, \$1-002, \$1-003) Kieft, Munholland, Noonan, Pflanze, Rudolph, Thayer, Wright
- 3-051f, 3-052w, 3-053s (50, 51, 52). **ANCIENT CIVILIZATION.** (3,3,3 cr, \$1-051, \$1-052, \$1-053) T. Jones, Kelly
- 3-101, 3-102, 3-103 (50A, 51A, 52A). **MEDIEVAL, RENAISSANCE HISTORY.** (3,3,3 cr, \$1-101, \$1-102, \$1-103) Bachrach, Hoyt
- 3-151f, 3-152w, 3-153s (56, 57, 58). **HISTORY OF ENGLAND.** (3,3,3 cr, \$1-151, \$1-152, \$1-153) Altholz
- 3-451f, 3-452w, 3-453s (59, 60, 61). **HISTORY OF ASIA.** (5,5,5 cr, \$1-451, \$1-452, \$1-453) Farmer, Kopf, Marshall, Taylor
- 3-491f, 3-492w (62A, 63A). **CULTURAL HISTORY OF JAPAN.** (3,3 cr; offered when feasible) Copeland
3-491: Prehistoric times to A.D. 1600. 3-492: A.D. 1600 to present.
- Heb 3-501f, 3-502w (Heb 74A, 75A). **ANCIENT ISRAEL.** (3,3 cr; no knowledge of Hebrew required) Paradise
History of Israel and development of its religion as seen against background of ancient Near East.
- Arab 3-511f/3-512w/3-513s (Arab 74-75-76). **HISTORY OF ARABS.** (3-3-3 cr; prereq # for 3-511) Chejne
3-511: Pre-Islamic days to downfall of Umayyads. 3-512: Abbasids to fall of Baghdad in 1258. 3-513: From Crusades to modern times.

Course Offerings and Major Sequences

- 3-801, 3-802 (86, 87). COLONIAL PERIOD OF AMERICAN HISTORY.** (3,3 cr; prereq 3-801 or ¶3-801 or § for 3-802) Carroll
American colonies, 1607 to 1750. Sources and methods of colonial history.
- 3-804w, 3-805s (87A, 88A). ERA OF AMERICAN REVOLUTION.** (3,3 cr; prereq 3-804 or § for 3-805) Howe
3-804: Causes and course of Revolution. 3-805: The Revolution and an American nation.
- 3-821f, 3-822w, 3-823s (79, 80, 81). UNITED STATES IN 20TH CENTURY.** (3,3,3 cr) Chambers, A. Jones
3-821: From 1808 to 1914. 3-822: From 1914 to 1932. 3-823: From 1932 to present.
- 3-841f, 3-842w (93A, 94A). AMERICAN BUSINESS HISTORY.** (3,3 cr) Green
3-841: Colonial to 1890. 3-842: 1890 to present.
- 3-861, 3-862 (93B, 94B). HISTORY OF AMERICAN IMMIGRATION.** (3,3 cr, §3-867, §3-868 or §3-869, offered 1971-72 and alt yrs) Vecoli
3-861: To 1880. 3-862: Since 1880.
- 3-864, 3-865 (93C, 94C). AFRO-AMERICAN HISTORY.** (3,3 cr, §3-867, §3-868 or §3-869; offered 1971-72 and alt yrs) Spear
3-864: From 1619 through Reconstruction. 3-865: Since Reconstruction.
- 3-867, 3-868, 3-869 (93D, 94D, 95D). RACE AND NATIONALITY IN AMERICAN HISTORY.** (3,3,3 cr, §3-861, §3-862, §3-864 or §3-865; offered 1971-72 and alt yrs) Vecoli
3-867: To 1865. 3-868: 1865 to 1910. 3-869: 1910 to present.
- 3-881f, 3-882w, 3-883s (93, 94, 95). HISTORY OF AMERICAN FOREIGN POLICY.** (3,3,3 cr) Brauer
3-881: 1775 to 1871. 3-882: 1871 to 1920. 3-883: Foreign policy since Versailles.
- 3-891f, 3-892w (97, 98). MINNESOTA AND THE NORTHWEST.** (3,3 cr)
- 3-951Hf/3-952Hw† (83H-84H). HONORS COURSE: HISTORY.** (3-3† cr; prereq candidacy for honors in history, §)
- 3-961f,w,s (99). MAJOR PAPER.** (3 cr)
- 3-970 (100B, 101B, 102B). DIRECTED STUDY.** (1 to 15 cr; prereq §; qualified sr and grad students may register with § for work on tutorial basis)
- 5-041f, 5-042s (121B, 122B). EXPANSION OF EUROPE.** (3,3 cr; offered when feasible)
5-041: 1400 to 1763. 5-042: 1763 to World War II.
- 5-051f, 5-052w, 5-053s (103A, 104A, 105A). ANCIENT NEAR EAST.** (3,3,3 cr)
- 5-061f, 5-062w, 5-063s (103B, 104B, 105B). GREECE TO 200 B.C.** (3,3,3 cr; offered 1971-72 and alt yrs) Kelly
- 5-071f, 5-072w, 5-073s (103C, 104C, 105C). HISTORY OF ROME.** (3,3,3 cr; offered 1970-71 and alt yrs) T. Jones
- 5-101f, 5-102w, 5-103s (106A, 107A, 108A). WESTERN EUROPE IN THE EARLY MIDDLE AGES.** (3,3,3 cr; prereq 1-101 or 3-051 or equiv or §) Bachrach
5-101: From the settlement of the Franks in Gaul to the end of the Merovingians.
5-102: The Carolingian West. 5-103: Feudal localism and the struggle for central control to ca 1050.
- 5-111f, 5-112w, 5-113s (106B, 107B, 108B). EUROPE IN HIGH MIDDLE AGES.** (3,3,3 cr) Hoyt
5-111: Twelfth-century revival. 5-112: Medieval civilization. 5-113: Rise of western monarchies, decline of papacy and empire.
- 5-121f, 5-122w, 5-123s (106C, 107C, 108C). EUROPE IN LATE MIDDLE AGES, RENAISSANCE, AND REFORMATION.** (3,3,3 cr) Tracy
5-121: Italy from Dante to Machiavelli. 5-122: Transalpine Europe: 1300 to 1520.
5-123: The Reformation.
- 5-131f, 5-132w, 5-133s (109A, 110A, 111A). BYZANTINE HISTORY.** (3,3,3 cr; offered when feasible)
5-131: Later Roman Empire to 565. 5-132: Rise of Byzantium to 976. 5-133: From Basil II to 1453.
- 5-134f, 5-135w, 5-136s (118E, 119E, 120E). HISTORY OF EARLY RUSSIA.** (4,4,4 cr; prereq §) Noonan

- 5-134: Origins of Russian, Kievan period. 5-135: To mid-16th century. 5-136: Ivan IV to Peter the Great.
- 5-141f, 5-142w, 5-143s (112A, 113A, 114A). **ENGLISH CONSTITUTIONAL HISTORY TO 1485.** (3,3,3 cr) Hoyt
5-141: Anglo-Saxon and Norman England. 5-142: From Henry II to Edward I. 5-143: England in later Middle Ages.
- 5-151f, 5-152w, 5-153s (124A, 125A, 126A). **MODERN ENGLAND: TUDOR AND STUART PERIODS.** (3,3,3 cr) Lehmborg
5-151: 1485 to 1588. 5-152: 1588 to 1642. 5-153: 1642 to 1714.
- 5-171f, 5-172w, 5-173s (124C, 125C, 126C). **MODERN ENGLAND: 1783 TO PRESENT.** (3,3,3 cr; offered 1971-72 and alt yrs) Altholz
5-171: 1783 to 1846. 5-172: 1846 to 1901, Victorian era. 5-173: 1901 to 1951, war and social change.
- 5-191f, 5-192w, 5-193s (130A, 131A, 132A). **HISTORY OF BRITISH EMPIRE AND COMMONWEALTH.** (3,3,3 cr; offered when feasible)
5-191: First empire to 1783. 5-192: Second empire, 1783 to 1914. 5-193: Development of Commonwealth.
- 5-201f, 5-202w, 5-203s (115A, 116A, 117A). **EARLY MODERN EUROPE.** (3,3,3 cr) Bamford
5-201: Reformation and religious wars. 5-202: Seventeenth century. 5-203: Eighteenth century.
- 5-211f, 5-212w, 5-213s (115B, 116B, 117B). **FRENCH REVOLUTION AND NAPOLEON.** (3,3,3 cr) Bamford
5-211: Background and emergence of the Revolution. 5-212: The Revolution and revolutionary wars. 5-213: Napoleon.
- 5-214w, 5-215s (115C, 116C). **EUROPE IN 19TH CENTURY.** (3,3 cr) Pffanze
5-214: 1815-1852. 5-215: 1852-1900.
- 5-221f, 5-222w, 5-223s (115D, 116D, 117D). **EUROPE IN 20TH CENTURY.** (3,3,3 cr) Munholland
5-221: From 1890 to 1918. 5-222: From 1918 to 1938. 5-223: From 1938 to 1950.
- 5-224f, 5-225w, 5-226s (115E, 116E, 117E). **WORLD WAR II.** (3,3,3 cr) Deutsch
5-224: Origins and background. 5-225: War period, 1939 to 1942. 5-226: Period 1943 to 1945.
- 5-231f, 5-232w (118A, 119A). **MODERN FRANCE.** (3,3 cr; prereq 9 cr, or 15 cr in social science or French major; offered when feasible) Munholland
5-231: From Vienna settlement to Third Republic. 5-232: Third and Fourth Republics.
- 5-241f, 5-242w, 5-243s (118C, 119C, 120C). **HISTORY OF GERMANY.** (3,3,3 cr) Pffanze
5-241: From 911 to 1648. 5-242: From 1648 to 1871. 5-243: Since 1871.
- 5-244f, 5-245w, 5-246s (118D, 119D, 120D). **CENTRAL EUROPE.** (3,3,3 cr; prereq 1-003) Wright
5-244: Bohemia, Poland, and Hungary to 18th century. 5-245: The 18th century to 1867. 5-246: From 1867 to present.
- 5-247f, 5-248s (118L, 119L). **HISTORY OF AUSTRIA.** (3,3 cr; offered 1970-71 and alt yrs) Wright
5-247: From foundation to 1809. 5-248: From 1809 to Second Republic.
- 5-254f, 5-255w, 5-256s (118K, 119K, 120K). **HISTORY OF ITALY FROM ERA OF FRENCH REVOLUTION TO PRESENT.** (3,3,3 cr) Thayer
5-254: From 1798 to 1860. 5-255: From 1860 to 1901. 5-256: From 1901 to present.
- 5-264f, 5-265w, 5-266s (118F, 119F, 120F). **MODERN RUSSIA.** (3,3,3 cr) Stavrou
5-264: Eighteenth-century background. 5-265: The 19th century. 5-266: Revolutions and Soviet regime.
- 5-271f, 5-272w, 5-273s (118J, 119J, 120J). **HISTORY OF SCANDINAVIAN COUNTRIES.** (3,3,3 cr)
- 5-274f, 5-275w (118G, 119G). **MODERN NEAR EAST: OTTOMAN EMPIRE AND SUCCESSOR STATES.** (3,3 cr) Stavrou
5-274: From 1792 to Congress of Berlin. 5-275: From Congress to present.
- 5-281f, 5-282w, 5-283s (121C, 122C, 123C). **INTELLECTUAL AND CULTURAL HISTORY OF MODERN EUROPE.** (3,3,3 cr; offered 1970-71 and alt yrs) Thayer
5-281: The 18th century and its background. 5-282: Early 19th century. 5-283: Late 19th and 20th centuries.

Course Offerings and Major Sequences

- 5-284f, 5-285w, 5-286s (121D, 122D, 123D). DIPLOMATIC HISTORY OF EUROPE IN THE 19TH AND 20TH CENTURIES. (3,3,3 cr) Kieft
5-284: 1789 to 1871. 5-285: 1871 to 1918. 5-286: 1918 to present.
- 5-287 (121F). DIPLOMATIC HISTORY OF EUROPE FROM 1648 TO 1789. (3 cr) Kieft
- 5-291f, 5-292 (122A, 123A). ECONOMIC HISTORY OF EUROPE. (3,3 cr) Rudolph
5-291: Medieval and early modern economic life. 5-292: Modern European economic history.
- 5-294, 5-295 (122E, 123E). ECONOMIC HISTORY OF RUSSIA AND EASTERN EUROPE. (3,3 cr; offered 1971-72 and alt yrs) Rudolph
5-294: 18th to mid-19th century. 5-295: Mid-19th century to present.
- 5-317f, 5-318w, 5-319s (133E, 134E, 135E). AMERICAN HISTORY 1850-1900. (3,3,3 cr) Loehr
5-317: Compromise of 1850 to Appomattox. 5-318: From 1865 to 1880. 5-319: From 1880 to 1900.
- 5-331f, 5-332w, 5-333s (139F, 140F, 141F). AMERICAN CONSTITUTIONAL HISTORY. (3,3,3 cr) Murphy
5-331: English and colonial background through Age of Jefferson. 5-332: Sectionalism, Civil War, and Reconstruction. 5-333: An industrial age.
- 5-334f, 5-335w, 5-336s (139G, 140G, 141G). HISTORY OF CIVIL LIBERTIES AND CIVIL RIGHTS IN UNITED STATES. (3,3,3 cr) Murphy
5-334: From Magna Carta to 1865. 5-335: From 1865 to 1918. 5-336: Civil liberties in modern context.
- 5-339s (141K). GREAT FIGURES IN AMERICAN JURISPRUDENCE. (3 cr; offered 1970-71 and alt yrs) Murphy
Analysis of role of leading jurists, and legal thinkers in shaping American public law.
- 5-341f, 5-342w, 5-343s (142A, 143A, 144A). AMERICAN ECONOMIC HISTORY. (3,3,3 cr) Loehr
5-341: Colonial Life. 5-342: From American Revolution to 1860. 5-343: Developments since 1860.
- 5-344f, 5-345w, 5-346s (142C, 143C, 144C). HISTORY OF AMERICAN LABOR. (3,3,3 cr) Berman
5-344: From 1607 to 1873. 5-345: From 1873 to 1917. 5-346: From 1917 to present.
- 5-349 (142B). AMERICAN AGRICULTURAL HISTORY. (3 cr) Loehr
Colonial times to present.
- 5-371f, 5-372w, 5-373s (139C, 140C, 141C). INTELLECTUAL HISTORY OF UNITED STATES. (3,3,3 cr) Noble
- 5-379 (139B). PURITANISM IN AMERICAN HISTORY. (3 cr; prereq #; offered when feasible)
Puritanism as reality and as concept for historical interpretation.
- 5-389s (144D). SOVIET RUSSIAN-AMERICAN RELATIONS, 1917 TO PRESENT. (3 cr; offered 1970-71 and alt yrs) Brauer
A survey of Russian-American relations since the Russian Revolution, emphasizing political, diplomatic, economic and military problems and American foreign policy.
- 5-391f, 5-392w, 5-393s (136A, 137A, 138A). HISTORY OF THE SOUTH. (3,3,3 cr) McCrary
5-391: From 1607 to 1840. 5-392: From 1840 to 1890. 5-393: Since 1890.
- 5-399f (139A). CURRENT INTERPRETATION AND PROBLEM OF SYNTHESIS IN AMERICAN HISTORY. (3 cr; prereq #; offered when feasible)
Designed to acquaint students with current scholarship in field and its implications for general interpretation of American History.
- 5-401f, 5-402w, 5-403s (145A, 146A, 147A). SURVEY OF LATIN-AMERICAN HISTORY. (3,3,3 cr) Schwartz, Wagner
5-401: Colonial period. 5-402: Latin-American republics. 5-403: Recent Latin-American history.
- 5-419 (146C). HISTORY OF ARGENTINA. (3 cr) Wagner
Political, social and economic history of Argentina since independence.
- 5-420. TOPICS IN LATIN-AMERICAN HISTORY. (3 cr; prereq #) Wagner, Schwartz
Detailed treatment of historical themes common to the entire Latin-American area. Course content will change from quarter to quarter.
- 5-421, 5-422 (145B, 146B). HISTORY OF BRAZIL. (3,3 cr) Schwartz

- 5-421: Survey of colonial Brazilian development 1500-1808. 5-422: Modern Brazil 1808 to 1964.
- 5-427 (147C). HISTORY OF COLOMBIA. (3 cr) Wagner
Historical development of Colombia with emphasis on the 19th and 20th centuries.
- 5-441, 5-442, 5-443 (157, 158, 159). PROBLEMS IN WEST AND NORTH AFRICAN HISTORY. (3,3,3 cr; open also to sophs who have passed 1-431, 1-432, 1-433) Coifman
- 5-444, 5-445, 5-446 (157A, 158A, 159A). PROBLEMS IN CENTRAL AND SOUTHERN AFRICAN HISTORY. (3,3,3 cr; open also to sophs who have passed 1-431, 1-432, 1-433) Isaacman
- 5-451f, 5-452w (148A, 149A). HISTORY OF INDIA. (3,3 cr) Kopf
5-451: Ancient India and early Muslim India, to 1526. 5-452: Mughal and British Empires, modern India and era of nationalism, 1526-1947.
- 5-461f, 5-462w (148D, 149D). CHINESE HISTORY TO A.D. 1368 (3,3 cr) Taylor
5-461: To 221 B.C. 5-462: To 1368.
- 5-464f, 5-465w (148E, 149E). MODERN CHINA. (3,3 cr) Farmer
5-464: China in the Ming and Ch'ing, 1350-1700. 5-465: China's response to the West, 1700-1911.
- 5-467f, 5-468w (150E, 151E). TWENTIETH-CENTURY CHINA. (3,3 cr) Farmer
5-467: The Republic. 5-468: The People's Republic.
- 5-471w, 5-472s (148F, 149F). HISTORY OF JAPAN. (3,3 cr) Marshall
5-471: To 1700. 5-472: Since 1700.
- 5-484 (148B). HISTORY OF SOUTHEAST ASIA. (3 cr)
Development of societies and states in Asian region bordered by culture and political spheres of China and India.
- 5-497f, 5-498w (151A, 152A). CULTURAL HISTORY OF CHINA. (3,3 cr; prereq ¶ArtH 5-711 recommended; offered when feasible)
5-497: Prehistoric times to A.D. 600. 5-498: A.D. 600 to present.

Proseminars

- 5-501f/5-502w/5-503†s (193B-194B-195B). HISTORY OF INDIA. (3-3-3† cr) Kopf
- 5-511f, 5-512†w (193C, 194C). CHINESE HISTORY TO A.D. 1368. (3,3† cr) Taylor
- 5-514f, 5-515w (193D, 194D). CHINESE HISTORY, 1368 to 1911. (3,3 cr; offered 1971-72 and alt yrs; prereq §) Farmer
- 5-517f, 5-518w (193E, 194E). TWENTIETH-CENTURY CHINESE HISTORY. (3,3 cr; offered 1970-71 and alt yrs; prereq §) Farmer
- 5-521f/5-522†w (193A-194A). HISTORY OF JAPAN. (3,3† cr; prereq §) Marshall
- 5-534s (199A). SOUTHEAST ASIAN HISTORY. (3 cr; offered when feasible)
- 5-549s (196). EAST AND SOUTH ASIA. (3 cr; same as Anth 5-971, Geog 5-299, Ortl 5-551, and Pol 5-486; integrating course for students majoring in East and South Asia area studies program) Interdepartmental staff
- 5-551f/5-552w/5-553†s (160A-161A-162A). ANCIENT HISTORY. (3-3-3† cr) T. Jones
- 5-561f/5-562w/5-563†s (160B-161B-162B). ANCIENT HISTORY. (3-3-3† cr) Kelly
- 5-601f, 5-602w, 5-603s (163B, 164B, 165B). PROSEMINAR: EARLY MEDIEVAL WESTERN EUROPE. (3,3,3 cr; prereq 1-101 or 3-051 or equiv, §, reading knowledge of French or German) Bachrach
- 5-611f/5-612w/5-613†s (163A-164A-165A). MEDIEVAL HISTORY. (3-3-3† cr) Hoyt
- 5-621f/5-622w/5-623†s (163C-164C-165C). RENAISSANCE AND REFORMATION HISTORY. (3-3-3† cr) Tracy
- 5-634w, 5-635s (167B, 168B). MEDIEVAL RUSSIAN HISTORY. (3,3 cr; prereq 5-134, 5-135, 5-136 or § and reading knowledge of Russian, French, or German) Noonan
- 5-641f/5-642w/5-643†s (166A-167A-168A). MEDIEVAL ENGLISH HISTORY. (3-3-3† cr) Hoyt
- 5-651f/5-652w/5-653†s (178A-179A-180A). ENGLISH HISTORY: TUDOR AND STUART PERIODS. (3-3-3† cr) Lehmborg

Course Offerings and Major Sequences

- 5-671f/5-672w/5-673fs (178C-179C-180C). MODERN ENGLAND: 1783 TO PRESENT. (3-3-3† cr; offered 1970-71 and alt yrs) Altholz
- 5-711f/5-712w/5-713fs (172C-173C-174C). FRENCH REVOLUTION AND NAPOLEON. (3-3-3† cr) Bamford
- 5-721f/5-722w/5-723fs (169E-170E-171E). RECENT EUROPEAN HISTORY. (3-3-3† cr; prereq lect course in 20th-century Europe or World War II or §) Deutsch
- 5-731f/5-732w/5-733fs (172A-173A-174A). SEVENTEENTH-CENTURY FRANCE. (3-3-3† cr; prereq reading knowledge of French) Bamford
- 5-741f, 5-742w (169C, 170C). GERMANY AND CENTRAL EUROPE IN 18TH CENTURY. (3,3 cr) Wright
- 5-744f/5-745w/5-746fs (172D-173D-174D). NINETEENTH-CENTURY GERMANY. (3-3-3† cr; prereq reading knowledge of German, §) Pflanze
- 5-761f/5-762w/5-763fs (172F-173F-174F). RUSSIAN HISTORY. (3-3-3† cr; prereq 5-136 and reading knowledge of Russian, German, or French or §) Stavrou
- 5-771f/5-772w/5-773fs (172G-173G-174G). SCANDINAVIAN HISTORY. (3-3-3† cr)
- 5-777f/5-778w/5-779fs (172J-173J-174J). HISTORY OF THE HAPSBURG MONARCHY. (3-3-3† cr; prereq §) Wright
- 5-781/5-782† (172E-173E). MODERN EUROPEAN INTELLECTUAL HISTORY. (3-3† cr) Thayer
- 5-784w, 5-785fs (175D, 176D). DIPLOMATIC HISTORY OF 19TH- AND 20TH-CENTURY EUROPE. (3, 3† cr) Kieft
5-784: From 1815 to 1914. 5-785: From 1914 to present.
- 5-787/5-788† (175F-176F). RELIGIOUS HISTORY OF MODERN EUROPE. (3-3† cr; offered 1971-72 and alt yrs) Altholz
- 5-791f/5-792w/5-793fs (175A-176A-177A). EUROPEAN ECONOMIC HISTORY SINCE 1500. (3-3-3† cr) Bamford
- 5-794f/5-795w/5-796fs (175B-176B-177B). HISTORY OF EUROPEAN COMMERCE. (3-3-3† cr) Bamford
- 5-801f/5-802w/5-803fs (181A-182A-182A). SEVENTEENTH- AND EIGHTEENTH-CENTURY AMERICAN HISTORY. (3-3-3† cr) Carroll
- 5-804f/5-805w/5-806fs (181B-182B-183B). ERA OF AMERICAN REVOLUTION. (3-3-3† cr) Howe
- 5-811f/5-812w/5-813fs (181D-182D-183D). NINETEENTH-CENTURY AMERICAN HISTORY. (3-3-3† cr)
- 5-817f/5-818w/5-819fs (181F-182F-183F). AMERICAN HISTORY, 1850-1900. (3-3-3† cr; offered 1971-72 and alt yrs) Loehr
- 5-821f/5-822w/5-823fs (181J-182J-183J). AMERICAN HISTORY IN 20TH CENTURY. (3-3-3† cr; prereq §) Section 1, Chambers; Section 2, A. Jones
- 5-831f, 5-832w, 5-833s (187A, 188A, 189A). AMERICAN POLITICAL AND CONSTITUTIONAL HISTORY. (3,3,3 cr; prereq 5-331, 5-332, 5-333 or §) Murphy
- 5-841f/5-842w/5-843fs (187G-188G-189G). AMERICAN ECONOMIC HISTORY. (3-3-3† cr; offered 1970-71 and alt yrs) Loehr
- 5-844f/5-845w/5-846fs (187F-188F-189F). AMERICAN LABOR HISTORY. (3-3-3† cr) Berman
- 5-847w/5-848fs (188J-189J). AMERICAN BUSINESS HISTORY. (3-3† cr) Green
- 5-861/5-862† (188K-189K). HISTORY OF AMERICAN IMMIGRATION. (3-3† cr) Vecoli
- 5-864w/5-865fs (184E-185E). AFRO-AMERICAN HISTORY. (3-3† cr; prereq § for 5-864, 5-864 for 5-865) Spear
- 5-871f/5-872w/5-873fs (187D-188D-189D). INTELLECTUAL HISTORY OF UNITED STATES IN 19TH, 20TH CENTURIES. (3-3-3† cr) Noble
- 5-881f/5-882w/5-883fs (187B-188B-189B). AMERICAN DIPLOMATIC HISTORY. (3-3-3† cr; offered 1971-72 and alt yrs) Brauer
- 5-897/5-898/5-899† (181-182-183). LITERATURE OF AMERICAN HISTORY. (3-3-3† cr; prereq §; required of all grad students intending a Ph.D. program in American history)

Introduction to problems of historiography and survey of major interpretations in American history.

- 5-901f/5-902w/5-903ts** (190A-191A-192A). **LATIN AMERICAN HISTORY.** (3-3-3† cr; prereq reading knowledge of Spanish; offered when feasible) Schwartz, Wagner
- 5-931s** (197). **HISTORY OF AFRICA.** (3 cr; prereq 5-431, 5-432 or #) Coifman
- 5-941, 5-942, 5-943** (197D, 198D, 199D). **PROSEMINAR: AFRICAN HISTORY.** (3,3,3 cr; prereq #) Coifman
Research training with emphasis on West and North Africa.
- 5-944, 5-945, 5-946** (197B, 198B, 199B). **PROSEMINAR: AFRICAN HISTORY.** (3,3,3 cr; prereq #) Isaacman
Research training with emphasis on East, Central and South Africa.
- 5-951f, 5-952ts** (169, 170). **HISTORY OF HISTORICAL THOUGHT.** (3,3† cr) Pflanze
- 5-961w/5-962ts** (170A-171A). **EXPANSION OF EUROPE.** (3-3† cr)
- 5-964s** (175C). **ATLANTIC COMMUNITY: EARLY MODERN ORIGINS.** (3 cr; offered when feasible)
- 5-970** (100B, 101B, 102B). **DIRECTED STUDY.** (1 to 15 cr; prereq #; qualified sr and grad students may register with # for work on tutorial basis)
- 5-990** (100B, 101B, 102B). **DIRECTED RESEARCH.** (1 to 15 cr; prereq #; qualified sr and grad students may register with # for work on tutorial basis)

HOME ECONOMICS (HE)

(College of Agriculture, Forestry, and Home Economics)

Arts College students who wish to take courses not listed on the following pages must have approval of the chairman of the subject area in the School of Home Economics, and of the Arts College Scholastic Committee.

Following are suggested concentrations:

1. HE 1-552, 1-553 and 5-551, 5-554 or 5-512, 5-514 or 5-552, 5-568
2. HE 1-523, 1-521, 1-541, 5-541, and 5-517

Individual courses recommended are: HE 1-531, 1-533, 3-563, 5-565, 5-531, 5-533.

Many classes in the School of Home Economics are controlled in size. Students wishing to register in such classes should secure tally cards from 130 Coffey Hall. A limited number of tally cards is available in 205 Johnston Hall.

LOWER DIVISION COURSES

- 1-301 (40). FOOD PREPARATION.** (5 cr; prereq 2 qtrs chemistry)
Development of technique and application of fundamental scientific principles to cookery processes and preservation.
- 1-381 (31). PRINCIPLES OF NUTRITION.** (3 cr, §GC 1-735)
Quantitative and qualitative aspects of nutritional requirements. Interrelationships between physiological processes and dietary requirements. Problems of food faddism.
- 1-501 (20). INTRODUCTION TO RELATED ART.** (3 cr; not open to sr)
Development of an appreciation of art involved in everyday life of students.
- 1-521 (21). COLOR.** (3 cr)
Study of color theory and its application to environment. Experiences with pigments and color in light and color illusion.
- 1-523 (19). VISUAL PRESENTATION.** (3 cr)
Laboratory experiences designed to develop observation, perception, and communication through studies in basic art tools and media, visual elements, spatial representations, and lettering. Free and disciplined graphic expression including development of portfolio and sketchbook.
- 1-531 (25). TEXTILE DESIGN I.** (3 cr)
Orientation to sources and resources of textile media. Individual designing in textile construction techniques and/or applied media. Studio problems.
- 1-533 (26). CRAFT DESIGN I.** (3 cr)

Course Offerings and Major Sequences

Orientation to craft materials and techniques in non-textile crafts, metals, wood, plastics, others; studio problems.

- 1-541 (22). DESIGN I.** (3 cr; prereq 1-661, 1-521, 1-523 or 1-525 or #)
Problems in color, texture, design for individual. Introduction to fashion illustration. Study of folk and regional costume.
- 1-552 (24A). THE HOME: SELECTION AND FURNISHING I.** (3 cr, \$FamS 3-015, or \$GC 1-733; prereq soph)
Problems involved in choosing location and in planning or selecting dwelling unit and its furnishings. Emphasis on design and appraisal of individual and family needs.
- 1-553 (24B). THE HOME: SELECTION AND FURNISHING EXPERIENCE I.** (3 cr; prereq 1-501, 1-521, 1-552)
Problems in designing for living space needs. Experience in evaluation of design quality of furnishing elements.
- 1-661 (1). CLOTHING SELECTION.** (3 cr; not open to srs)
Overview of individual, familial, and societal factors affecting selection of clothing and related items. Principles of clothing selection originating from economic and design theory.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-260 (85). HOME MANAGEMENT PRINCIPLES.** (3 cr; prereq 1-301...1-311 recommended ...AgEc 1-020)
Managerial aspects of homemaking; work simplification of household activities; financial records and budget making for individual and family.
- 3-302 (70). ADVANCED FOOD PREPARATION.** (3 cr, \$3-301; prereq 1-301, BioC 1-301)
(Continuation of 1-301) Emphasizes scientific principles that underlie cookery processes and food preservation.
- 3-381 (76). CURRENT PROBLEMS IN NUTRITION.** (3 cr, \$5-361, 5-362; prereq 1-381, physiology or human biology)
Study of major nutritional problems facing world today. Consideration of protein-calorie malnutrition, obesity, nutritional status of adolescents, and special nutritional problems of infants and aged.
- 3-383 (72). NUTRITION.** (2 cr, \$HE 1-381; intended for students majoring in fields other than home economics [open to HE students only by #]; prereq jr; given on Mpls Campus)
Discussion of application of nutrition principles to selection of food.
- 3-563 (29). ART AND THE ENVIRONMENT.** (3 cr; prereq soph)
Art and design in housing; individual's role and responsibility; contemporary and historic approaches to design of physical home environment.
- 3-621 (50). TEXTILES.** (5 cr; prereq 3rd qtr soph, Chem 1-005, NSci 1-002, NSci 1-005, or #)
Basic physical, chemical, and biological characteristics of fiber, yarn, and fabric structures; interrelationship with choice, maintenance, and performance of consumer textiles.
- 5-505 (120). ART HISTORY.** (3 cr)
Egyptian period to the present. Painting, sculpture, and architecture of past studied for influences on contemporary period. Field trips.
- 5-512 (123A). HISTORY OF HOME INTERIORS I.** (3 cr; prereq 5-505 or equiv)
From ancient times through 18th century, including Oriental influences. Major emphasis on European-American furnishings of 18th century.
- 5-514 (123B). HISTORY OF HOME INTERIORS II.** (3 cr; prereq 5-505, 5-512 or equiv)
Historic sites of American home and furnishings of 17th-20th centuries; European styles of 19th-20th centuries. Role of reproductions and adaptations.
- 5-531 (121). TEXTILE DESIGN II.** (3 cr; prereq 1-531 or equiv)
Designing in one selected textile technique. Studio problems. Readings.
- 5-333 (126). CRAFT DESIGN II.** (3 cr; prereq 1-533 or equiv)
Studio problems in non-textile materials and techniques.
- 5-541 (125). COSTUME DESIGN II.** (3 cr; prereq 1-601, 1-541 or #)

Problems in draping and sketching clothing designs. Pencil, crayon, and water color techniques, studies and reports on selected topics.

5-565 (100). HOMES OF WORLD. (3 cr; prereq 1-552 or 3-563, or equiv)
Study of home design in selected regions of world.

HOW TO STUDY

See Personal Orientation

HUMANITIES (Hum)

The subject of the humanities is man; his values, aspirations, and limitations. The subject is approached through a carefully integrated study of literature, philosophy, history, and the arts. Humanities is a distinct field of study; it does, however, avail itself of the material of the social sciences, which deal with relations between men; humanities also avails itself of the natural sciences to the extent that they shed light on human nature. The works studied in courses are selected for their capacity to express man's perennial effort to identify the nature of the human condition.

● **Major Sequence in Arts College**—This is an interdepartmental major. Requirements include courses in the Humanities Program along with several groups of electives in certain departments of the College. Specific requirements are as follows:

A. Required Program Offerings

1. 24 Humanities Program credits, 19 of these from some combination of European Heritage and Modern World courses. No more than nine of these may be taken in Lower Division: at least 5 must be European Heritage, the other 14 being European Heritage or Modern World. The remaining 5 may be from any Upper Division courses except the proseminars.
2. 9 credits in Humanities proseminars.

B. A total of 45 Upper Division credits distributed as follows:

1. 18 to 21 cr in one or more of the following: Anthropology, Geography, History, Linguistics, Philosophy, Political Science, Psychology, Sociology, Social Sciences.
2. 24 to 27 cr in literature (English or foreign, classical or modern, history of art, history of music, history of theatre, studio arts, studio music, theatre or oral interpretation).

For courses labeled "Humanities," see listings below. For all other courses in the program, see separate departments mentioned in the above list of requirements.

LOWER DIVISION COURSES

1-001f,w,s (1). HUMANITIES IN MODERN WORLD I. (5 cr, §1-101 or 3-001)

Old Regime, French Revolution and Napoleonic Era, neoclassicism, and romanticism. Authors: Pope, Voltaire, Rousseau, Burke, Goethe, and Tolstoy.

1-002f,w,s (2). HUMANITIES IN MODERN WORLD II. (5 cr, §1-102 or 3-002; prereq 1-001 or 1-101)

Industrial Revolution, liberalism and socialism, individualism. Authors: Smith, Malthus, Carlyle, Marx, Ibsen, Mill, Zola, Flaubert, Tolstoy, and Dostoevski.

1-003f,w,s (3). HUMANITIES IN MODERN WORLD III. (5 cr, §1-103 or 3-003; prereq 1-002, 1-102 or 3-002)

Impact of science and theory of evolution; religion and morals in changing world. Authors: Darwin and evolutionists, Neitzsche, Kierkegaard, Chekhov, Turgenyev, Mann.

Course Offerings and Major Sequences

- 1-004f,w,s (4). HUMANITIES IN MODERN WORLD IV.** (5 cr, §3-004; prereq 1-001 or 1-101, 1-002 or 1-102, 1-003 or 1-103)
Introduction to humanities between the two world wars. Communism, fascism, Freudianism, modern art and philosophy, existentialism. Authors: Lenin, Freud, Joyce, T. S. Eliot, Kafka, and others.
- 1-001Hf, 1-002Hw, 1-003Hs, 1-004Hf,w,s (1H,2H,3H,4H). HONORS COURSE: HUMANITIES IN MODERN WORLD.** (5,5,5,5 cr, §corresponding qtr of 1-001, 1-002, 1-003, 1-004 or 1-101, 1-102, 1-103; prereq # or Δ; limited to 15 students of high ability as demonstrated in other Humanities classes or in GPA or in high school achievement)
- 1-009 (9). SCIENCE AND HUMANITIES.** (5 cr) Giese
Examines warfare between the two cultures, scientific and humanistic, through consideration of documents from Goethe and Newton to Snow, Leavis, A. Huxley, J. Bronowski and others. Selected topics include humanistic scholarship and methodological character of sciences, creativity in arts and sciences, science and human values.
- 1-011f, 1-012w, 1-013s (11,12,13). EUROPEAN HERITAGE.** (5,5,5 cr, §3-111, §3-211, §3-011, for 1-011...§3-112, §3-212, §3-012 for 1-012...§3-113, §3-213, §3-013 for 1-013)
Masterpieces of European civilization from Homer to Cervantes. Literature, philosophy, theology, arts of Greece, Rome, Middle Ages, and Renaissance. Attention paid to ideals and forces of continuing importance to modern world. 1-011: Greek heritage. 1-012: Roman and Medieval heritage. 1-013: Renaissance and Reformation.
- 1-031, 1-032, 1-033 (31,32,33). RELIGIONS OF THE 20TH CENTURY.** (3,3,3 cr)
1-031: Religion in South and Southeast Asia. 1-032: Religion in East Asia. 1-033: The Mediterranean Area.
- 1-101f, 1-102w, 1-103s (1A,2A,3A). HUMANITIES IN MODERN WORLD.** (3,3,3 cr, §corresponding qtr of 1-001, 1-002, 1-003 or 3-001, 3-002, 3-003; prereq 1-101 or 1-001 for 1-102, 1-102 or 1-002 for 1-103) Scott, others
Each qtr corresponds to respective qtr of Hum 1-001, 1-002, 1-003 but with reduced reading list.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-001f,w, 3-002w,s, 3-003f,s (51,52,53). HUMANITIES IN MODERN WORLD.** (5,5,5 cr, §corresponding qtr of 1-001, 1-002, 1-003 or 1-101, 1-102, 1-103; prereq jr or sr)
Similar to 1-001, 1-002, 1-003; more reading, papers.
- 3-004 (54). HUMANITIES IN MODERN WORLD.** (5 cr, §1-004; prereq jr or sr)
Similar to 1-004; more reading, papers.
- 3-004H (54H). HONORS COURSE: HUMANITIES IN MODERN WORLD.** (5 cr, §corresponding qtr of 1-004; limited to 20 students of high ability as demonstrated by grades in humanities courses or GPA; prereq # or Δ)
- 3-005 (55). HUMANITIES IN MODERN WORLD V.** (5 cr; prereq 1-004 or 3-004)
Intellectual climate of western world since World War II. Worlds of existentialism and "the absurd"; alienation, irrationalism; anti-hero in literature; new theology; Zen.
- 3-006 (56). THE IMAGINATION IN THE 20TH CENTURY.** (5 cr)
Examines the nature of the imagination in a study of key works on the imagination in the 20th century and works that exemplify as forcibly as possible the quality of imagination in art.
- 3-011, 3-012, 3-013 (61,62,63). EUROPEAN HERITAGE.** (5,5,5 cr, §corresponding qtr of 1-011, 1-012, 1-013 or 3-111, 3-112, 3-113 or 3-211, 3-212, 3-213; prereq jr or sr)
Similar to 1-011, 1-012, 1-013; more reading, papers.
- 3-038 (88). THE POLITICAL NOVEL.** (5 cr; prereq jr, sr, or #) Zimmerman
Selected novels from Stendhal to the present; emphasis on critical study of work by major authors; consideration of theories of human nature; relation of the individual and society; philosophy of history and political action; experience and ideology; the political novel as a genre.
- 3-044H (94H). HONORS THESIS.** (3 cr; prereq sr, candidate for magna or summa honors in humanities, Δ)

Individual assignments carried out under direction of honors candidate's adviser or another faculty member.

- 3-045 (90). RACIAL THOUGHT: A CONCEPTUAL SURVEY, 19TH AND 20TH CENTURIES.** (5 cr; prereq jr, sr or ♯) Penn
Introduces "racial" thought as an assemblage of historically and conceptually diverse philosophic and cultural ideologies; demonstrates that there is a spectrum of divergent "racial" outlooks which must be understood against the background of the particular philosophic, scientific, and religious aspirations of the periods under consideration; Readings include Gobineau, Disraeli, Renan, Taine, Chamberlain, Putnam, Benedict, Montague, etc.
- 3-049 (99). SCIENCE AND HUMANITIES.** (5 cr; prereq jr, sr, or ♯)
Examines warfare between two cultures, scientific and humanistic, through consideration of decisive documents from Ficino and Vives to recent work of Polanyi, Koestler, Bronowski, and A. Huxley.
- 3-111 (61A). THE HEROIC AGE.** (3 cr, §1-011, 3-011; prereq jr or sr)
Similar to first half of 1-011 or 3-011. Readings from the Old Testament and related Middle Eastern Documents, Hesiod, Homer.
- 3-112 (62A). THE ROMAN HERITAGE.** (3 cr, §1-012, 3-012; prereq jr or sr)
Similar to first half of 1-012 or 3-012. Roman civilization from Lucretius to Augustine; the Stoic and Epicurean philosophers, Judaism under the Romans, the birth of Christianity.
- 3-113 (63A). THE RENAISSANCE.** (3 cr, §1-013, 3-013; prereq jr or sr)
Similar to first half of 1-013 or 3-013. The birth of renaissance art in Florence, the high renaissance and the baroque in Rome and Spain. Literature and philosophy of beauty and statecraft. Readings in Machiavelli, Cellini, Castiglione, and others. The scientific revolution: Copernicus, Galileo, Kepler.
- 3-211 (61B). GREECE: THE GOLDEN AGE.** (3 cr, §1-011, 3-011; prereq jr or sr)
Similar to second part of 1-011 or 3-011. The Greek Tragedians, Aristophanes, Plato, Aristotle, Thucydides.
- 3-212 (62B). THE MEDIEVAL HERITAGE.** (3 cr, §1-012, 3-012; prereq jr or sr)
Similar to second half of 1-012 or 3-012. Readings in medieval philosophy, theology, the poetry of courtly love, Dante's Divine Comedy.
- 3-213 (63B). THE REFORMATION.** (3 cr, §1-013, 3-013; prereq jr or sr)
Similar to second half of 1-013 or 3-013. The renaissance in the North. Reformation and counter reformation in the Church. Readings in Luther, Calvin, St. Ignatius, Montaigne, Pascal, Cervantes.
- 3-970 (70). DIRECTED STUDIES.** (Cr ar; prereq ♯)
Course devised for the independent study program, and designed to permit the student to pursue his interests in special reading and/or study.
- 5-030f,w,s (131, 132, 133). HUMANITIES PROSEMINAR.** (3,3,3 cr; prereq sr)
Integrated review of humanities materials: arts, sciences, and civilization.
- 5-030Hf,w,s (131H, 132H, 133H). HONORS COURSE: HUMANITIES PROSEMINAR.** (3,3,3 cr; for honors candidates in humanities and others with overall grade average of B or better; prereq sr and Δ)
Topics same as for 5-030.

INDIC

See South Asian Languages

INTERDEPARTMENTAL MAJOR (Individually Designed)

If your special interests cannot be met in a single department, you may have a major tailor-made for your particular needs. In applying for a major of this type you must submit a statement of your reasons for choosing this major, and a plan of courses, to 225 Johnston Hall. An interdepartmental program must include 75 or more Upper Division credits. The courses must be planned to meet a central purpose, usually through a concentration in four or more departments. An unsystematic and aimless scattering of courses will not be approved. Do not apply for an individually designed interdepartmental major until you have pre-

Course Offerings and Major Sequences

pared a statement of your objectives and a tentative program of course work.

You must maintain a C average in all Upper Division courses which comprise the major and in all Upper Division courses. You need not complete 30 or of Upper Division work outside your major.

INTERNATIONAL RELATIONS (IntR)

The interdisciplinary programs in international relations include courses from the social sciences and humanities and, in some areas of concentration, from the curricula of professional schools and colleges. They are administered by faculty committees drawn from participating disciplines. The administrative office in the College of Liberal Arts for these programs is the Quigley Center of International Studies, 1246 Social Sciences Building (West Bank).

Graduate training leading to the M.A. degree is also available in international relations.

Courses in Lower Division—Students must satisfy the distribution requirements for entrance into the Upper Division, but should complete at least 4 quarters (or the equivalent) of a foreign language in the Lower Division. This will enable them to complete without delay the special foreign language requirements for majors in international relations in the Upper Division, i.e., the first Upper Division sequence in conversation or composition.

Since Upper Division majors include courses selected from several disciplines, care should be exercised to complete any Lower Division courses that are prerequisite to the advanced courses in these departments. Advisers should be consulted as to variations and special recommendations peculiar to the several majors. For the general international relations field, Econ 1-001/1-002 and Geog 1-301 are prerequisites to required courses in the major; Pol 1-025 and 1-026 are strongly recommended as an introduction to the field.

The Lower Division curriculum may be completed with courses that satisfy special interests or needs of the student. Whenever possible he should devote some time to basic cultural training in the fine arts, humanities, literature, and philosophy.

Students planning to elect an international relations major should consult a major adviser as early as possible, preferably upon entering the University.

Courses in Upper Division—In consultation with a major adviser, the student will select courses totaling 45 credits, equivalent to a major and a minor. A minimum of 30 additional Upper Division credits must be earned in order to fulfill College of Liberal Arts requirements.

The 45 credits in major courses must include a prescribed core curriculum of 33 credits in one of three fields: 1) general international relations; 2) international development; or 3) international and cross-cultural communication.

The remainder of the 45 major credits should be selected from approved courses to form an integrated concentration of work appropriate to the student's interests and career objectives.

Area studies—*Note:* Programs leading to degrees with a major in Area Studies have been discontinued. Students with strong area interests may wish to consider as alternatives an Interdepartmental program (see p. 135) or the traditional major and minor program supplemented by selected area courses as electives. Lists of courses related to several geographic areas (Asia, Latin America, Russia, Western Europe) may be obtained from the Quigley Center of International Studies, 1246 Social Sciences Building.

Foreign language study is to be continued through at least the basic composition or conversation courses in one language at the Upper Division level; this is in addition to major courses. Additional courses contributing to the inter-

national relations program (or courses suited to other cultural interests of the student) may be elected.

Detailed requirements and listings of courses for each international relations field appear in the special bulletin, Programs in International Relations.

UPPER DIVISION COURSES

International Relations—Honors Program

3-090H (90H). HONORS COURSE: SENIOR HONORS SEMINAR. (3 cr; this course or equiv required for all international relations majors admitted to honors program; open to other international relations majors by #)

Reading and research seminar on selected international relations topic.

3-091H (91H). HONORS COURSE: SUPERVISED RESEARCH PAPER. (3 cr; prereq sr honors candidates, international relations, Δ)

ITALIAN

See French and Italian Languages

JAPANESE

See East Asian Languages

JOURNALISM AND MASS COMMUNICATION (Jour)

The School of Journalism and Mass Communication is organized as a professional school, holding the equivalent of departmental status within the College of Liberal Arts. Its students meet the requirements of, and receive their B.A. degrees from, the College.

As an academic discipline, journalism is concerned with the theories and practices of mass communication media, in the context of both historical development and contemporary problems, and with the development of skills and techniques requisite for the successful practice of the craft of written, oral, and visual mass communication.

The school offers degree programs at three levels: (1) undergraduate programs in three degree sequences—news-editorial, advertising, and broadcast journalism; (2) an integrated five-year program, or graduate program leading to the M.A. degree; and (3) a program leading to the Ph.D. degree in Mass Communication.

Preparation for journalism rests on a broad liberal education, a knowledge of the social and professional responsibilities of the journalist, and basic competence in journalistic techniques. A journalism major plans an Upper Division program, in conference with his adviser, so as to gain both general and professional education. About three-fourths of the student's university work is in social science and humanities departments and in other non-journalism liberal education areas; about one-fourth is in journalism courses including many with liberal education emphasis.

Required Background Courses—Students interested in journalism and mass communication may begin their work in either their freshman or sophomore year. They are urged to discuss their vocational aspirations and prospective entrance into the school with its faculty members or the lower division journalism counselor.

A prospective journalism major, while meeting the Arts College Lower Division requirements, must include in his program Jour 1-001 and 1-005, Econ 1-014/1-015 or 1-001/1-002‡, and Pol 1-001/1-002. He must include two quarters of American history in either Lower or Upper Division (selections from Hist 1-301, 1-302, 3-822, 3-823, 3-881, 5-341, 5-342, 5-343, 5-371, 5-372, 5-373 are

Course Offerings and Major Sequences

recommended). Those intending to follow the news-editorial sequence must include also Jour 1-101 and 1-701 and Comp 1-027. Pre-advertising students must include Jour 1-201, Psy 1-001/1-002† and Comp 1-027. Those in the broadcast journalism sequence must include Jour 1-101 and 1-701 and Spch 1-102 and 1-106 or 1-101.

It is recommended that the pre-journalism student also elect courses in sociology, psychology, speech, the humanities, English or American literature, geography, anthropology, and philosophy.

It is expected that the student interested in journalism be able to type or learn to type early in his university career.

● **Upper Division Major Sequences**—The major sequences are planned with basic core course requirements considered essential for the professional preparation of all students. In the news-editorial area, flexibility is provided in basic core requirements for students following specializations. Students wishing to coordinate their work for the B.A. degree with proposed work for the M.A. degree in journalism should consult a journalism adviser early in the junior year to prepare a 5-year program encompassing expanded and specialized preparation in journalism and supporting disciplines. Those students qualified to meet the admission requirements of the Graduate School are urged to consider such coordinated programs, which may include joint majors or interdepartmental planning.

● **News-Editorial Major Sequence for Bachelor of Arts**—Maximum of 45 cr in journalism including Lower Division courses.

This sequence prepares students for daily and weekly newspaper reporting, editing, interpretive writing, and editorial direction; photojournalism; press association work; magazine writing, editing, and administration; critical writing; science and technical writing; industrial journalism; graphic arts design; newspaper management, circulation, promotion; public relations and public opinion; mass communications research; journalism teaching.

Requirements:

A. Jour 3-121, 3-151, 5-131, 5-501, 5-601

B. Jour 3-155/3-156 or 3-173/3-174

C. Jour 5-141 or 5-142

D. 9 to 12 elective Upper Division cr in journalism for minimum of 30. Three of the elective credits must be at the 5-000 level. Students of superior scholarship may substitute outside courses for 6 of the additional cr with adviser approval.

In some cases other modifications of the sequence may be approved by the adviser.

● **Advertising Major Sequence for Bachelor of Arts**—Maximum of 45 cr in journalism including Lower Division courses.

This sequence prepares students for work in print and broadcast media advertising; advertising agencies; manufacturers' and retail advertising departments; copywriting and layout; broadcast production; typography and graphic design; media, market, and consumer analysis; public relations; newspaper management; mass communications research; advertising teaching.

Requirements:

A. Jour 3-231, 3-241, 5-251, 5-261, 5-262, 5-264, 5-501; Mktg 3-000

B. 9 cr in Upper Division journalism or adviser-approved areas

Students in the advertising sequence wishing to specialize in broadcast advertising should choose, in addition to the course requirements of the advertising sequence, Spch 1-101, or 1-102 and 1-106; Spch 3-201, 3-203, or 3-204; and Spch 5-211. Such students should also elect Jour 3-401 and 3-486 and one course from among Jour 3-421, 5-611, 5-615.

Students of advertising wishing special training in marketing may elect, with adviser approval, a group of courses in the School of Business Administration, choosing from among Mktg 3-040, 3-060, 3-065, 3-075, 3-085, 3-095, 3-096, 3-098, 3-099; Mgmt 3-005; Soc 3-801; Psy 3-801 and 5-861 (one of last three recommended for all, but required for those electing Mktg 3-095 and 3-096).

Students of advertising wishing special training in commercial design are advised to elect work in the Department of Studio Art. A student may prepare for a general minor in art by first electing ArtS 1-101, 1-102.

Broadcast Journalism Major Sequence for Bachelor of Arts—Maximum of 45 cr in journalism including Lower Division courses.

This sequence prepares students for careers as television and radio journalists. Emphasis is on practice in writing news, filming, editing film and tape, reporting, interviewing, preparing newscasts, delivery. This sequence also contains the basic courses for careers as newspapers and press association reporters.

Requirements:

- A. Jour 3-121, 3-401, 3-451, 3-456, 5-402, 5-442, 5-501, 5-611
- B. 9 elective Upper Division cr in journalism (recommended: 3-421, 3-486, 5-131, 5-615, 5-721)
- C. Spch 3-201, 3-202 or 3-204, 5-211

Additional recommended Spch courses: 5-202, 5-231, 5-232

Agricultural and Home Economics Journalism Major Sequences—These programs, offered jointly by the Arts College and the College of Agriculture, Forestry, and Home Economics, combine courses so as to offer students either editorial or advertising sequences in journalism with extensive specialized work in agriculture or home economics. Full details may be obtained from major advisers in journalism and in agriculture or home economics.

Professional Emphasis in Specialized Fields—Students with professional interest in special fields of journalism may design programs. For all of these specializations a 5-year program is recommended. Students should arrange programs in specialized fields in early conferences with Upper Division advisers. The principal fields of specialization, and the core and elective courses recommended for them are:

Creative Graphic Arts—for students interested in advertising layout or in production, typography, and makeup of periodicals and promotional matter. News-editorial majors should elect Jour 3-221, 3-353, 5-233; advertising majors should elect Jour 3-232, 3-353, 5-233; Upper Division courses in art and design may be elected.

Magazine Journalism—students should choose Jour 3-173 and 3-174, 5-141 or 5-142; recommended are Jour 1-301, 3-155/3-156, 3-221, 3-353, 5-171, 5-606, 5-721.

Newspaper Editorial—students should choose Jour 3-155/3-156, 5-141 and 5-142; recommended are Jour 1-301, 3-193, 3-221, 3-353, 5-514, 5-721, 5-777.

Newspaper Management—a student may follow either the news-editorial or advertising sequence. Students should choose Jour 3-193, 3-195; recommended are 3-178, 3-221, 3-231, 5-721, 5-777.

Photojournalism—Students should elect Jour 1-301, 3-365, 3-366; 3-353 or 3-456; 5-377 or 5-378 or 5-615; ArtH 3-001 and 3-921 or 3-922; any two of ArtS 3-704, 3-705, 3-706, or Spch 3-201/3-202; and 3-6 cr in basic design.

Public Relations—a student may follow either the news-editorial or advertising sequence. Students should elect Jour 3-178, 5-549; recommended are

Course Offerings and Major Sequences

Jour 1-201, 5-514, 5-531, 5-721. Recommended Lower Division courses: Psy 1-001/1-002†, Soc 1-001, Spch 1-101.

Students expecting to specialize at the graduate level in advertising or mass communication research should elect during their senior years Jour 5-514, 5-515, 5-531, and a course in statistics chosen in consultation with their graduate advisers.

Honors Opportunities and Graduation with Honors—Information concerning opportunities for honors students and the school's requirements for graduation with honors may be obtained from the Honors Division Office (115 Johnston) or the school director's office.

General Education—Jour 1-003, 1-011, 1-012, and 3-021 are particularly designed for non-majors. Jour 1-001, 1-005, and 3-221 are open without prerequisite. A group of courses dealing primarily with the social aspects of mass communication is open: Jour 5-171, 5-251, 5-501, 5-514, 5-531, 5-549, 5-601, 5-603, 5-606, 5-611, 5-615, 5-721, 5-777, 5-801, 5-825, 5-826.

LOWER DIVISION COURSES

Note—No student whose average is lower than C will be permitted to enroll in any journalism course, in either Lower Division or Upper Division.

1-001f,w,s (1). Introduction to Mass Communications. (3 cr; prereq 2nd qtr fr with B avg in English, 3rd qtr fr with C avg in English or soph...basic typing ability desirable; 2 lect, 1 lab per week)

Nature, functions, and responsibilities of communication agencies examined from point of view of professional journalist. News, opinion, entertainment, and persuasion functions. Specialized communication; aspects of advertising. Laboratory exercises in fact-gathering and journalistic writing.

1-002 (2). See Spch 1-102

1-003w (3). COMMUNICATION IN MODERN WORLD—MASS MEDIA. (3 cr, §Spch 1-103) Gillmor

Mass media and their social and cultural effects. Interaction between audience and media. Popular arts. Related areas of communication; advertising, public relations, propaganda. Future of mass media.

1-004 (4). See Spch 1-104

1-005w,s (5). VISUAL COMMUNICATION. (3 cr; prereq 3rd qtr fr) Schuneman, Bay
Introduction to functions of visual communication in news and advertising for print and electronic media. Evaluation and criticism of current typography, photography. Lectures (CCTV), recitations: projects, critiques.

1-011f,w (11). JOURNALISTIC WRITING FOR NONMAJORS. (3 cr; for journalism minors and others in College of Agriculture, Forestry, and Home Economics, College of Education, Institute of Technology, and School of Business Administration; prereq soph, C avg, Engl C, 1-003, 3A, 3B, or Comm 1-003 or Rhet 1-103 or exemption from English requirement) Sim

Newspaper fact-gathering and newswriting; specialized reporting; fundamentals of press law.

1-012w,s (41). PUBLICATIONS EDITING. (3 cr; not recommended for journalism majors; prereq soph, 1-001 or 1-011) Sim

Lectures and laboratory in basic problems of copy editing for various publications.

1-101f,w,s (14). REPORTING. (3 cr; prereq soph, 1-001, C avg in journalism courses and in all work, or #...type 35 words per min...{Comp 1-027) Brovald, Burd, Fang, Hage, Lindsay, Sim

Study of and practice in commonly used terms of reporting. Problems of news handling. Effective feature writing.

1-201f,w,s (18). PRINCIPLES OF ADVERTISING. (3 cr; prereq soph, 1-001, C avg and {Comp 1-027...1-001 or {1-001 for Upper Division students) Peterman

Theory, principles, and functions of advertising; its role in economic, social and marketing structure. Newspapers, magazines, radio, television as advertising media.

1-301f,w,s (6). BEGINNING PHOTOJOURNALISM. (3 cr; prereq 1-001, 1-005 or {1-005) Bay

Photography as creative means of communication. Fundamentals of photography; use of news cameras; basic darkroom processes. Lectures and laboratory.

- 1-701f,w,s (16). MASS COMMUNICATIONS LAW. (2 cr; prereq 1-001, ¶1-101) Gerald, Gillmor, Sim
Origins and background of principles of press law. Libel and its defenses, penalties. Right of privacy; problems of fair trial. Law and self-regulation in advertising, in broadcast media. Copyright, obscenity statutes.

UPPER DIVISION COURSES

Upper Division courses in the School of Journalism and Mass Communication are open to Lower Division students only by special permission of the Scholastic Committee as explained at the beginning of Section II. *Note*—No student whose average is lower than C will be permitted to enroll in any journalism course in Upper Division.

Surveys

- 3-021s (90). MASS COMMUNICATIONS AND THE NEWS. (3 cr; not open to journalism majors) Lindsay, Fang, Sim
How news gets to and affects the public in print, on the air, by film. Evaluation of news gathering and presentation methods. Contemporary influences on media.
- 3-051 (80). SURVEY OF JOURNALISM TECHNIQUES. (5 cr; open only to grad or adult special students with deptl permission)
Overview of principal journalistic techniques; fact-gathering and writing for news media; editing processes; aspects of advertising. Lectures and laboratory.

News-Editorial

- 3-121f,w,s (50). PUBLIC AFFAIRS REPORTING. (3 cr; prereq soph with B avg in 1-001 and 1-101 or jr, 1-101, C avg, Comp 1-027 or #) Hage, Burd
Reporting court trials, city, county, state, federal administrative and legislative agencies. Students attend and report trials, hearings, legislative sessions, and news conferences.
- 3-151f,s (51). NEWS EDITING. (2 cr; prereq 3-121 or B avg in 1-001, 1-101; 4 lab hrs per wk) Brovald, Sim, Carter
Basic copy editing problems and techniques; headline writing; proof reading.
- 3-155w (55). NEWSPAPER EDITING. (2 cr; prereq 3-151 and ¶3-156 or #) Sim, Brovald
Lectures and laboratory in news and picture selection and editing. Newspaper makeup. Press association teletype service.
- 3-156w (56). DESIGN AND TYPOGRAPHY: EDITORIAL. (2 cr; prereq 3-151 and ¶3-155 or #) Wilson
Principles of design in newspaper and periodical makeup. Type and headline display. Typography for film presentation.
- 3-173f,w (73). MAGAZINE WRITING. (3 cr; prereq 3-121 or 1-012 and #) Hage, Burd
Planning and writing feature articles for general, class, and trade publications; marketing; problems of magazine editing; employee and industrial journal problems.
- 3-174w (74). MAGAZINE EDITING. (3 cr; prereq 3-173 and #)
Planning and editing consumer and specialized magazines; problems of magazine layout, design, and makeup. Individual projects in magazine editing, writing.
- 3-176 (71). BUSINESS AND INDUSTRIAL JOURNALISM. (3 cr; for journalism majors and minors particularly interested in study of business and industrial press; prereq 1-012 or 3-151)
Gathering material for and writing of feature articles in industrial field. Analysis of content, staffs, production.
- 3-178f (78). PUBLICITY. (3 cr; open only to Upper Division majors in journalism, #) Lindsay
Publicity, external and internal communication, including use of company publications, institutional advertising and trade journals. Projects and campaigns.
- 3-182s (82). SUPERVISION OF SCHOOL PUBLICATIONS. (3 cr; for those who plan to become advisers of high school or college newspapers, yearbooks, magazines; prereq 1-012 or 3-151) Sim
Emphasis upon editorial content, staff organization, editing, typography, makeup, and business management.

Course Offerings and Major Sequences

- 3-193f (93). **COMMUNITY NEWSPAPER.** (3 cr; prereq 1-012 or 3-151 or ¶1-012 or 3-151)
Brovald, Sim
Local newspaper and its editor—their place in American life. Problems of news and editorial direction, responsibility.
- 3-195s (95). **NEWSPAPER MANAGEMENT.** (3 cr; prereq 1-012 or 3-151 or ¶1-012 or ¶3-151)
Brovald, Sim
Analysis of management problems: advertising, circulation, and commercial printing as sources of income; records and cost systems; plant layout; business policies.
- 5-131w,s (101). **INTERPRETIVE REPORTING.** (3 cr; prereq sr, 3-151) Gerald, Lindsay, Burd
Interpretive and investigative reporting. Interpretive features and series, Advanced problems in material gathering and specialized reporting of government, politics, welfare and the arts.
- 5-133f,w (102). **SCIENCE COMMUNICATION.** (4 cr; prereq 3-121 or 3-176 or #) Tichenor
Role of journalistic communication in science; scientist-journalist relationships; communicating results of scientific investigations to public, specialized audiences, industry.
- 5-141f,5-142w (140,141). **INTERPRETATION OF CONTEMPORARY AFFAIRS.** (3,3 cr; prereq sr, 3-151 and 15 cr in social science) Emery, Gerald, Nixon
Analysis of major political, economic, and social developments and their interpretation in editorial and interpretative articles.
- 5-143s (143). **INTERPRETATION OF SCIENCE AND TECHNOLOGY.** (3 cr; prereq 5-133, 5-501 and Phil 5-601) Tichenor
Analysis of scientific research and technological development for mass and specialized media; critical study of science content in media; audience impact.
- 5-171s (106). **CRITICAL WRITING.** (3 cr; prereq an Upper Division writing course and #)
Hage
Book, theater, and motion picture reviews. Analysis of leading critics and critical periodicals. Reviews are written weekly.
- 5-181s (190). **ADVANCED PROBLEMS IN JOURNALISTIC WRITING.** (3 cr; prereq grad, demonstration of acceptable writing achievement and #) Staff
Investigation and analysis of problems of advanced professional accomplishment in fields of journalistic writing. Uses of literary and journalistic forms.

Advertising

- 3-221f,s (60). **GRAPHIC ARTS: PROCESSES.** (3 cr; prereq jr) Wilson
Letterpress, offset, lithography, and gravure printing processes; engravings and copy preparation; significant graphic arts trends.
- 3-231f,s (57). **DESIGN AND TYPOGRAPHY: ADVERTISING.** (3 cr; prereq journalism-advertising major, or journalism minor in College of Education, School of Business Administration, or College of Agriculture, Forestry, and Home Economics, or #)
Wilson
Principles of design and layout. Preparation of layouts for print and film. Photo-type techniques. Appropriate use of type faces and color.
- 3-232w (59). **ADVANCED ADVERTISING TYPOGRAPHY AND LAYOUT.** (3 cr; prereq 3-231) Wilson
Practice and experimentation with display typography; individual laboratory projects in retail advertising display, point of purchase display, posters, direct mail brochures.
- 3-241f,w,s (79). **ADVERTISING COPY WRITING.** (5 cr; prereq 1-201, 3-231) Harris
Advertising appeals and strategy; techniques of writing and editing advertising copy for newspapers, magazines, radio-TV, direct mail, outdoor, brochures; planning advertising campaigns; laboratory work.
- 5-233s (158). **GRAPHIC DESIGN ANALYSIS.** (3 cr; prereq 3-156, 3-221, or 3-231, 3-221, or #) Wilson
Study of technological development in graphics and its effect on format and efficiency; historical and current trends; field studies, creative problems.
- 5-251f,w (156). **PSYCHOLOGY OF ADVERTISING.** (3 cr, §Psy 5-751; prereq Psy 1-002)
Peterman
Examination of psychological principles, research techniques, and applications in advertising and selling. Analysis of relevant consumer attitudes and behavior. Psychological mechanisms upon which effectiveness of advertisements and commercials depend.
- 5-261f,w,s (161). **ADVERTISING: PRINT MEDIA.** (3 cr; prereq 1-201, 3-241) Brovald
Characteristics of newspapers, magazines, direct mail, outdoor, specialty media, their

role in advertising; relations with retail advertisers, national representatives, agencies; organizations. Rate structures, economics.

5-262f,w (162). ADVERTISING: RADIO AND TELEVISION MEDIA. (3 cr; prereq 1-201, 3-241) Peterman, Mark

Contrasts and similarities of radio and television characteristics; interaction of sponsor, agency, station, network, and station representative; program and market selection; rate structure, audience analysis; creating and measuring impact of commercials.

5-263w,s (163). ADVERTISING: MEDIA STRATEGY AND ANALYSIS. (3 cr; prereq sr, 1-201, 5-261, 5-262 and #...or 5-261, 5-262, Mktg 3-000 or #) Rundle

Relation of advertising media to creative strategy; media characteristics; evaluation and use of media and market measurements and data; media purchasing, scheduling and appropriations; cases and campaigns.

5-274f,w,s (164). CURRENT ADVERTISING DEVELOPMENTS AND PROBLEMS. (3 cr; prereq sr, 5-261, 5-262) Peterman

Creative, management, research, media, and technical developments in advertising. Discussion and analysis of specific problems, case studies in advertising-marketing process.

Photojournalism

3-353f (53). PICTURE EDITING. (3 cr; prereq 1-005 or #) Schuneman

Criteria for picture selection. Dynamics of visual content: pattern, texture, movement. Combining word and picture in communications; layouts, news film. Lectures and laboratory.

3-365f,w (65). ADVANCED PHOTOJOURNALISM I. (3 cr; prereq 1-005, C or better in 1-301 or #) Schuneman

Picture content for visual reporting by print and television. Thematic visual series. Use of miniature camera, light and lighting. Lectures and laboratory.

3-366s (66). ADVANCED PHOTOJOURNALISM II. (3 cr; prereq 1-005, 3-365 and #) Schuneman

Visual presentation of information and ideas. Magazine photography; production of series and sequences. Principles of advertising illustration. Photo markets.

5-377f, 5-378s (107,108). ADVANCED PROJECTS IN PHOTOJOURNALISM. (3,3 cr; prereq 3-121 or #3-121, 3-365, # for 5-377...3-365 for 5-378) Schuneman

Intensive work in two specialized areas of photojournalism. 5-377: Documentary picture story: definition, scope, research and approaches for magazines and picture books. 5-378: Color photography: analysis of contemporary use of color in photography for printed media; materials and processes.

Broadcast Journalism

3-401f,w (83). BASIC CINEMATOGRAPHY. (3 cr; prereq 1-001, 1-005, 1-301) Bay

Introduction to film as a communication medium; creative and technical applications of motion pictures in television news and in advertising.

3-421w (88). RADIO AND TELEVISION STATION ADMINISTRATION. (3 cr; prereq 5-611 or Δ)

Role of the broadcasting station in American life. Basic issues in station operation; frequency and channel allocations, cross-channel affiliations.

3-451f (84). BROADCAST NEWS WRITING, EDITING. (3 cr; prereq 3-121) Fang

Introduction to television and radio news. Writing, monitoring, and interviewing; editing audio tape, preparing radio newscasts and a radio documentary.

3-456w (85). TELEVISION NEWS. (3 cr; prereq 3-401, 3-451 or #) Fang

Writing, editing newscast; assembling television newscasts.

3-486s (86). RADIO AND TELEVISION SCRIPT WRITING. (3 cr; prereq 3-151 and # for journalism majors, 1-001 and # for speech-radio majors) Harris

Planning and writing scripts for broadcast in variety of program areas.

5-402w,s (104). ADVANCED FILM PRODUCTION. (3 cr; prereq 3-401...3-121 or 3-451 or 3-486 or 3-241) Bay

Advanced considerations of film as a communication medium. Critical evaluations, especially in television news, documentaries, and advertising. Laboratory work in filmic production.

5-442s (142). ADVANCED TELEVISION NEWS. (3 cr; prereq 3-456 or #) Fang

Advanced editing of newscast, conducting interviews, preparing and delivering television newscasts; criticism and evaluation.

Course Offerings and Major Sequences

Theory and Methodology

- 5-501f,w,s (112). COMMUNICATION AND PUBLIC OPINION.** (3 cr; prereq 15 cr in social sciences) Carter, Nixon, Tichenor
Theories of communication process and of persuasion and attitude change. Functions of interpersonal and mediated communication in diffusion of information and in opinion formation.
- 5-514w (114). MASS COMMUNICATION THEORY.** (3 cr; prereq 5-501) Tichenor
Study of research concepts and findings that offer promise for development of general theory of mass communication. Analysis of research findings in communication of ideas and information through mass media.
- 5-515s (115). COMMUNICATIONS ANALYSIS: CONTENT, AUDIENCES, EFFECTS.** (3 cr; prereq #) Staff
Quantitative methods used in studying mass media content, audiences, and effects.
- 5-531w (131). PUBLIC OPINION AND PERSUASION.** (3 cr; prereq 5-501) Carter, Tichenor
Advanced study of theories of opinion formation, persuasion, and attitude change. Communication process in relation to interpersonal influence and to community power structure. Polls, politics, pressure groups.
- 5-549w (149). PUBLIC RELATIONS.** (3 cr; prereq sr, 5-501 or 15 cr in social sciences and #) Lindsay
Principles of public relations function; their application in industry, government, education, social agencies, and other institutions; pertinence of social science research. Case studies and analyses.

History

- 5-601f,w (109). HISTORY OF JOURNALISM.** (3 cr) Emery, Schuneman
Development of American newspapers and periodicals, from early beginnings in Europe to present day; rise of radio and television; relation of communications developments to political, economic, and social trends.
- 5-603s (110). TOPICS IN HISTORY OF JOURNALISM.** (3 cr; prereq 5-601) Emery
Intensive study of significant individuals, newspapers, and periodicals in the United States, 1865-1920. Individual research projects.
- 5-606f (103). LITERARY ASPECTS OF JOURNALISM.** (3 cr; prereq #) Hage
Survey as exemplified in, and influenced by, works of English and American writers, past and present. Lectures, discussions, and weekly papers.
- 5-611s (111). DEVELOPMENT OF AMERICAN BROADCASTING.** (3 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.
- 5-615w (105). DEVELOPMENT OF PHOTOJOURNALISM AND DOCUMENTARY FILM.** (3 cr) Schuneman
History of these forms of visual communication and their utilization by mass media. Principal contributors, visual styles, and changing evaluative criteria since 1839. Analysis of important films, photographs.

Social Institutions

- 5-721w,s (121). MASS MEDIA IN A DYNAMIC SOCIETY.** (3 cr; prereq 1-201 or 3-121 for journalism majors, # for others) Gillmor, Gerald
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.
- 5-731s (122). CURRENT COMMUNICATIONS PROBLEMS.** (3 cr; prereq sr, 3-151) Gerald
Individual project method used for analyses of communications problems of current importance in light of their social, economic, and technological environment.
- 5-731Hs (122H). HONORS COURSE: CURRENT COMMUNICATIONS PROBLEMS.** See 5-731 above.
- 5-777f,s (177). CONTEMPORARY PROBLEMS IN FREEDOM OF SPEECH AND PRESS.** (3 cr; prereq 15 cr in social sciences) Gerald, Gillmor
Anglo-American concept of freedom and responsibility, constitutional development in United States, areas of present tension. Bill of Rights and journalism today.

International

- 5-801f (124). INTERNATIONAL COMMUNICATIONS AND FOREIGN AFFAIRS.** (3 cr; prereq 15 cr in social sciences, with inclusion of an Upper Division course in history or political science...course in international relations recommended) Lindsay, Nixon
Channels of international communication and news gathering agencies. Factors affecting flow of news throughout world. Role of foreign correspondent. Relation of communications to international affairs.
- 5-825w (125). COMMUNICATION SYSTEMS OF WESTERN WORLD.** (3 cr; prereq 15 cr in social sciences...Upper Division course in international relations recommended) Lindsay, Nixon
Communications in other democracies as compared with United States and with totalitarian systems. Britain, Netherlands, Scandinavia, France. and Latin America emphasized; problems of reconstructing free press in Germany, Italy, Japan; prospects for developing areas.
- 5-826s (126). COMMUNICATIONS IN AUTHORITARIAN SOCIETY.** (3 cr; prereq 15 cr in social sciences...Upper Division course in international relations or comparative government recommended) Nixon
Operational relationships between government and communication media in authoritarian nations. Rise of totalitarian regimes; impact upon structure and operations of mass communication media. Case studies.

Projects

- 5-971f,w,s (118). ADVANCED PROJECTS IN JOURNALISM.** (1-3 cr per qtr [may be repeated for more than 1 qtr for max of 6 cr]; prereq sr, journalism major, B avg, #)
- 5-971Hf,w,s (118H). HONORS COURSE: ADVANCED PROJECTS IN JOURNALISM.** See 5-971 above.

LANDSCAPE ARCHITECTURE

See Architecture

LATIN

See Classics

LIBRARY SCHOOL (Lib)

The Library School is a graduate, professional school offering 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 5-001 (105), 5-101 (101), 5-201 (102), 5-202 (104) and 5-401 (103) are available, however, as electives for Arts College students, particularly those who wish to determine vocational interest in the field. Lib 5-201 (102) and 5-001 (105) have special general education values.

Undergraduates planning a career in college, public or special libraries are invited to visit the Library School office, 3 Walter Library, for advice. Arts College students who wish to prepare for school librarianship should *either* register in the College of Education, since a teacher's certificate is required in addition to library science coursework, *or* inquire in the Library School office about a special program available to them after graduation from the Arts College.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 5-001 (105). HISTORY OF LIBRARIES AND LIBRARIANSHIP.** (3 cr) Shove
- 5-101 (101). LIBRARY ADMINISTRATION.** (3 cr) Kittilson
- 5-201 (102). REFERENCE I.** (3 cr) McClaskey

Course Offerings and Major Sequences

- 5-202 (104). SELECTION OF LIBRARY MATERIALS. (3 cr) Freeman, Kittilson, Leigh
5-401 (103). CATALOGING AND CLASSIFICATION. (3 cr) Samanisky, Simonton

LINGUISTICS (Ling)

● Major Sequence in Arts College—

Prerequisites:

Ling 3-001/3-002, 3-003

Requirements:

A. Ling 3-011/3-012/3-013

B. At least 21 additional cr in linguistics courses numbered 3-001 or above, including at least 6 cr in history and/or structure of language chosen under C. Related courses from other departments may be used in completing this requirement. A list of these courses is available in the Linguistics Office, 142 Klaeber Court.

C. A minimum of 3 yrs study of a first foreign language, or 2 yrs study of a second foreign language, or demonstration of proficiency.

Requirements for Honors in Linguistics—Students majoring in linguistics who have a University average of 3.00 and an average of 3.25 in linguistics courses may try for honors in linguistics.

In either the junior or the senior year, the candidate for honors in linguistics will be required to take the Honors course, Ling 3-051H/3-052H/3-053H. He will also prepare a research paper.

When the program is completed, a committee (made up of the chairman of the department, the professor in charge of the honors course, and the professor under whom the research paper was written) will pass upon the award of *cum laude*, *magna cum laude*, or *summa cum laude* in linguistics.

LOWER DIVISION COURSES

1-001/1-002/1-003 (1-2-3). INTRODUCTION TO STUDY OF LANGUAGE. (2-2-2 cr; may not be used as prereq for adv courses in linguistics)

UPPER DIVISION COURSES

3-001/3-002 (50-51). INTRODUCTION TO LINGUISTIC SCIENCE. (3-5 cr)

3-003 (52). PHONETICS. (5 cr; prereq 3-001 or Δ)

3-005 (55). LINGUISTICS FOR FOREIGN LANGUAGE TEACHERS. (3 cr, §Ling 1-001, 3-001)

3-011/3-012/3-013 (60-61-62). LINGUISTIC ANALYSIS. (3-3-3 cr; prereq 3-001 and 3-003 or Δ)

Phonologic and syntactic analysis, methods and models in linguistic analysis.

3-051H/3-052H/3-053H (80H-81H-82H). HONORS COURSE: LINGUISTICS. (3-3-3 cr; prereq candidacy for honors in linguistics)

3-970 (70, 71, 72). DIRECTED STUDIES. (1-5 cr per qtr; prereq § and Δ)

For the independent study program, to permit the student to pursue special interests in reading and/or study.

5-001/5-002 (170-171). INTRODUCTION TO GENERAL LINGUISTICS. (3-3 cr, §3-001, §3-002, §3-005, or §linguistics majors)

5-003 (172). APPLIED PHONETICS. (3 cr, §3-003, §linguistics majors; primarily for tchrs of English as a second language; prereq 5-001 or §)

5-011/5-012/5-013 (104-105-106). MATHEMATICAL LINGUISTICS. (3-3-3 cr; prereq 3-013 or §)

Elementary set theory, symbolic logic, theory of relations, grammars and automata.

5-021/5-022/5-023 (101-102-103). PHONOLOGY. (3-3-3 cr; prereq 3-013 or §)

5-031 (107). FIELD METHODS IN LINGUISTICS. (3 cr; prereq 3-013 or §)

- 5-041 (108). AREAL LINGUISTICS. (3 cr; prereq 3-013 or #)
Diffusion of linguistic features across language and language family boundaries.
- 5-101/5-102/5-103 (110-111-112). TACMEMIC ANALYSIS. (3-3-3 cr; prereq 3-013 or #)
- 5-201/5-202/5-203 (120-121-122). TRANSFORMATIONAL GRAMMAR. (3-3-3 cr; prereq 3-013 or #)
- 5-204/5-205 (123-124). GENERATIVE PHONOLOGY. (3-3 cr; prereq 3-013 and 5-201 or #)
- 5-501/5-502 (130-131). AMERICAN INDIAN LINGUISTICS. (3-3 cr; prereq 3-013 or #)
Genetic and typological survey of representative languages.
- 5-601 (140). METHODS IN DIACHRONIC LINGUISTICS. (3 cr; prereq 3-002 or #)
- 5-605/5-606/5-607 (141-142). INDO-EUROPEAN LINGUISTICS. (3-3 cr; prereq 5-601 or #)
- 5-701 (180). CONTRASTIVE LINGUISTICS. (3 cr; prereq 5-001 and 5-003 or #)
- 5-801 (173). LANGUAGE AND COMMUNICATION. (3 cr; prereq 3-013 or #)
Role of language in communication models derived from fields such as information theory, social psychology, psychiatry.
- 5-805/5-806 (175-176). PSYCHOLINGUISTICS. (3-3 cr; prereq 3-013 or #)
Problem of meaning, language and cognition, models of language use and acquisition, and neurolinguistics.
- 5-811 (182). ETHNOLINGUISTICS. (3 cr; prereq 3-013 or #)
Intersection of linguistic and nonlinguistic cultural dimensions.
- 5-821 (183). SOCIOLINGUISTICS. (3 cr; prereq 3-013 or #)
Social dimensions of linguistic diversity.
- 5-841/5-842 (178-179). PHILOSOPHY OF SCIENCE IN LINGUISTICS. (3-3 cr; prereq 5-011 or #)
Nature of scientific explanations and theories; philosophical positions within linguistics.
- 5-900 (190, 191, 192). TUTORIAL. (1-3 cr per qtr; prereq major and #)

MARATHI

See South Asian Languages

MATHEMATICS (Math)

(Institute of Technology)

Major Sequence in Arts College—

Lower Division Courses:

Math 1-441, 1-442/1-443/1-444

Upper Division Courses:

A. Math 3-445, 5-506, 5-601/5-602, or 5-606/5-607, or 5-612/5-613

B. At least 21 additional cr in Upper Division mathematics, including at least one two-course sequence in algebra, geometry or topology in courses with the prefix 5-.

Students majoring in mathematics are urged to study at least one of these languages: French, German, Russian. Students who plan to pursue graduate study in mathematics should refer to the section on Language Requirements in the *Graduate School Bulletin*.

Placement of Students—The placement decision in beginning mathematics courses is made for every freshman student at the time of admission, using the ACT tests and high school record. Results are available in the student's college office. Advanced standing students continue mathematics begun elsewhere, or if they have had none, take a placement test after arriving on campus.

Students who have studied the advanced topics of algebra traditionally labeled as college algebra, substantial analytic trigonometry, and elementary parts

Course Offerings and Major Sequences

of analytic geometry are referred to the School of Mathematics for an exemption test in Math 1-441 if their placement score is outstanding.

Honors Courses—There will be offered each year four 2-credit companion courses to Math 1-441, 1-442/1-443/1-444, designated as Math 1-446H, 1-147H/1-448H/1-449H. These courses are designed for students with a special interest in mathematics, and will cover extra material not in the regular courses. A student completing the four-course honors sequence will have covered materials from the sequence Math 5-606/5-607. A student who enters the University and begins his regular mathematics program with Math 1-442 is still eligible to take Math 1-446H.

Graduation with Honors—The Department of Mathematics has a departmental program for honors in mathematics. Applications for admission to the program may be made by any well-qualified Arts College major in mathematics, preferable early in his junior year. More detailed information is available at the departmental office, 127 Vincent Hall.

LOWER DIVISION COURSES

0-009f,w,s (Z). PREPARATORY MATHEMATICS. (No cr; for students whose background in algebra is insufficient; 5 hrs per wk; special fee)

Covers material of high school higher algebra courses.

1-001f/1-002w/1-003s (1-2-3). MATHEMATICS. (3-3-3 cr, §40, §1-442 or above for 1-001...§1-443 or above for 1-002/1-003; for students not planning to register for courses in usual mathematics curriculum; prereq high school geometry and high school higher algebra or §; 3 lect per wk, 2 optional rec per wk [stressing individual work on problems]; will not satisfy prereq for any other mathematics course)

Some important aspects: genesis of mathematics in applied problems and in imagination; currently important areas of research and application; aesthetic, cultural, humanistic qualities. Emphasizes illustrative material.

1-005/1-006f,w,s (5A-B). FOUNDATIONS OF ARITHMETIC. (3-3 cr [not available for Arts College cr]; prereq 1 yr elementary algebra and 1 yr high school geometry or equiv, and enrollment as elementary education student, or Δ)

Logical and axiomatic basis of rules for arithmetical operations with integers, rational and irrational numbers; real number line and inequalities background for teaching arithmetic in elementary school, topics from geometry and congruences; history and role in our culture and civilization.

1-008f,w,s (T). TRIGONOMETRY. (3 cr; prereq plane geometry, high school higher algebra and mathematics placement score...§1-111)

Analytic trigonometry, identities, equations, properties of the functions; right and oblique triangles without logarithmic computation.

CICS 1-100 (14A). INTRODUCTION TO COMPUTERS. (See Institute of Technology Bulletin)

CICS 1-101/1-102/1-103 (14B-C-D). COMPUTER LABORATORY. (See Institute of Technology Bulletin)

1-111f,w,s (10). COLLEGE ALGEBRA AND ANALYTIC GEOMETRY. (5 cr, §1-141, §1-441; for students requiring only some analytic geometry and college algebra without trigonometry, or whose background does not include logarithms...students who plan to take several qtrs of mathematics should take Math 1-441 if they qualify; prereq high school higher algebra and mathematics placement score)

Functions and graphs, quadratic equations, progressions, inequalities, complex numbers, theory of equations, permutations and combinations, probability, systems of equations, determinants, graphing of linear and quadratic equations, conics and standard position, logarithms.

1-119w,s (20). MATHEMATICS OF INVESTMENT. (5 cr; prereq 1-111 or 1-141 or 1-441)

Simple interest and simple discount, compound interest, annuities with simple data, extinction of debts by periodic installments, bonds, depreciation, perpetuities, capitalization, general annuity formulas.

1-141f,w,s (10A). ALGEBRA, PROBABILITY, AND PRE-CALCULUS. (5 cr, §1-111, §1-210, §1-441; prereq high school higher algebra, 1-008 or high school trigonometry, and mathematics placement score)

A first course of a two quarter sequence for students in pre-business administration curriculum and others requiring college algebra and a minimal amount of calculus. Students who plan to take several quarters of mathematics should register for the 1-441, 1-442, 1-443, 1-444 sequence. Inequalities and elementary set theory; functions and analytic geometry; general systems of linear equations; linear inequalities and programming; combinations, permutations and probability; sequences, limits and continuity.

1-142f,w,s (40A). INTRODUCTION TO CALCULUS OF ONE AND SEVERAL VARIABLES. (5 cr, §1-220, 1-442; prereq 1-141 and 1-008 or high school trigonometry)

A second course of a two quarter sequence for students in pre-business administration curriculum and others requiring college algebra and a minimal amount of calculus. Students who plan to take several quarters of mathematics should register for the 1-441, 1-442, 1-443, 1-444 sequence. Limits; derivatives and integrals; some calculus of several variables; differential equations; rates of change; maxima and minima; several applications to a variety of disciplines.

1-210/1-220/1-230 (21A-22A-23A). ANALYSIS I-II-III. (See Institute of Technology Bulletin)

1-210H/1-220H/1-230H (21H-22H-23H). HONORS COURSES: CALCULUS I-II-III. (See Institute of Technology Bulletin)

1-240/1-250/1-260 (31-32-33). CALCULUS IV, V, VI. (See Institute of Technology Bulletin)

1-240H/1-250H/1-260H (31H-32H-33H). HONORS COURSES: CALCULUS IV, V, VI. (See Institute of Technology Bulletin)

1-310, 1-320, 1-330 (21X,22X,23X). ANALYSIS I, II, III. (5 cr per qtr; prereq 4 yrs high school math including trigonometry)

Content and description is essentially the same as 1-210, 1-220, 1-230, and 1-441, 1-442, 1-443. This course is designed to use pedagogical techniques not employed in either of these two sequences.

1-441f,w,s (15). COLLEGE ALGEBRA. (5 cr, §1-111, §1-141, §1-210; prereq high school higher algebra and 1-008 or high school trigonometry and mathematics placement score)

College algebra course for students planning to take sequence in analytic geometry and calculus. Functions and graphs, quadratic equations in one and two variables, progressions, complex number, inequalities, theory of equations, permutations and combination, binomial theorems, probability, mathematical induction, determinants.

1-442/1-443/1-444 (42-43-44). ANALYTIC GEOMETRY AND CALCULUS I-II-III. (5 cr per qtr, §1-142, §1-220; prereq 1-111, 1-141 or 1-441 and 1-008 or high school trigonometry...may enter 1-443 from 1-142 if grade in 1-142 is A or B)

A full-year course in the elements of analytic geometry and calculus. Plane analytic geometry including straight line, conic sections, parametric representations, polar coordinates, translation and rotation of axes. Introduction to solid analytic geometry, functions and limits, differentiation of algebraic, trigonometric, inverse trigonometric, exponential and logarithmic functions with applications to velocity and acceleration, rates, maxima and minima, curve tracing, indeterminate forms, approximations by differentials. Introduction to partial differentiation. Integration by standard forms with applications to area, volume, work, moments. Improper integrals. Infinite series. Taylor's theorem. Multiple integral two and three dimensions. Math 1-443/1-444 are available for Upper Division cr to all except mathematics and physics majors.

1-446H/1-447H/1-448H/1-449H (15H-42H-43H-44H). HONORS COURSES: ANALYTIC GEOMETRY AND CALCULUS. (2-2-2-2 cr; for students with special interest in mathematics; entering students who begin their college mathematics program with 1-442 or beyond are eligible to enter 1-446H; prereq 1-441 or ¶1-441 or 1-446H...1-442 or ¶1-442, 1-446H or § for 1-447H...1-443 or ¶1-443, 1-447H or 1-448H...1-444 or ¶1-444, 1-448H for 1-449H)

Covers material not in regular courses.

UPPER DIVISION COURSES

3-057s (57). ACTUARIAL SCIENCE PRINCIPLES—LIFE AND HEALTH INSURANCE. (3 cr; prereq 1-142 or §)

(Same as Ins 3-230) Measurement of mortality; net single premiums; net annual premiums; net level premium reserves; expense factor-expense loadings, asset shares, modified reserve systems, and non-forfeiture values; multiple life functions; population problems and multiple-decrement theory.

3-071/3-072/3-073f,w,s (70-71-72). HISTORY OF MATHEMATICS. (2-2-2 cr; for students with general knowledge of mathematics and some curiosity about historical de-

Course Offerings and Major Sequences

- velopment of mankind; prereq for any qtr 1-443 or 1-230)
Development of main branches of contemporary mathematics within framework of history of ideas as well as of techniques. Impact of thought of previous generations on modern developments. Term paper each quarter. 3-071: Greek mathematics. 3-072: Creation of calculus. 3-073: Topics in history of mathematics.
- CICS 3-101f,w,s (65). INTRODUCTION TO COMPUTER PROGRAMMING.** (See Institute of Technology Bulletin)
- 3-142f,w,s (63). LINEAR ALGEBRA.** (3 cr, §5-211; prereq 1-441, 1 qtr calculus)
Vectors, system of linear equations, matrices, determinants. Groups of transformations, conics, normal forms of matrices.
- 3-161f,w,s (60). SYNTHETIC METRIC GEOMETRY.** (3 cr; prereq 1-210 or 1-442)
Euclidean geometry including ruler and compass constructions and theorems on triangle and circle not studied in high school course in plane geometry.
- 3-445f,w,s (55). INTERMEDIATE CALCULUS.** (3 cr; prereq 1-444)
Advanced topics in partial differentiation, applications of multiple integrals, Taylor's theorem for functions of several variables, elements of differential equations.
- 3-581 (80A). FOUNDATIONS OF ARITHMETIC.** (3 cr; prereq 1-444)
Sets, relations, order. Real number system. Continuous functions.
- 3-582 (80B). FOUNDATIONS OF ALGEBRA.** (3 cr; prereq 1-444)
Groups, rings, fields. Applications to number theory and polynomials.
- 3-583 (80C). FOUNDATIONS OF GEOMETRY.** (3 cr; prereq 3-161)
Axiomatics. Non-Euclidean geometry. Theorems of Desargues and Pappus.
- 3-675 (75). INTRODUCTORY MATHEMATICS.** (3 cr; prereq Math 1-443 or 1-230)
A course designed to prepare the sophomore mathematics major for the theoretical courses he will encounter during his junior and senior years.
- CICS 5-101f (164). THEORY OF PROGRAMMING MODERN DIGITAL COMPUTERS.** (3 cr; prereq Math 1-250 or 3-445 or §)
Number systems. Complement arithmetic. Logical organization of computer. Basic and advanced absolute machine language programming. Arithmetic operations. Scaling. Introduction to symbolic programming.
- CICS 5-102w (165). THEORY OF PROGRAMMING MODERN DIGITAL COMPUTERS.** (3 cr; prereq CICS 5-101)
Logical operations. Bit and character manipulation. Assembly programs. Symbolic assembly programming. Interpretive languages. Simulators. Libraries. Application. Input-output. Fortran and mixed language programming.
- CICS 5-103s (166). THEORY OF PROGRAMMING MODERN DIGITAL COMPUTERS.** (3 cr; prereq CICS 5-102)
Boolean algebra and logical circuitry of computers. Logical theory of digital machine arithmetic. Introduction to Algol, list processing. Compilers and their structure. Basic ideas of compiler implementation.
- Stat 5-131/5-132/5-133 (Stat 131-132-133). THEORY OF STATISTICS.** (3-3-3 cr; prereq ¶Math 3-445 for 5-131, Math 5-601/5-602 for 5-132/5-133, or equiv)
5-131: Probability models, univariate and bivariate distributions, independence, basic limit theorems. 5-132/5-133: Statistical decision theory, sampling, estimation, testing hypotheses, parametric and non-parametric procedures for one-sample and two-sample problems, regression, analysis of variance.
- 5-151f (112). ELEMENTARY SET THEORY.** (3 cr; prereq 1-240 or 1-444)
Basic properties of operations on sets, cardinal numbers, simply ordered sets, well-ordered sets, ordinal numbers, axiom of choice, axiomatics.
- 5-157/5-158/5-159 (100A-B-C). MATHEMATICS OF SYMBOL MANIPULATION SYSTEMS.** (3-3-3 cr; prereq 1-441 or 1-210 and 3rd-yr standing or §)
5-157: Finite automata theory: switching circuits, Boolean algebra and propositional logic. Kleene's theorem on regular sets. Algebraic aspects of finite automata: minimization, decomposition, synthesis. 5-158: 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. 5-159: Symbol manipulation systems: formal systems of Herbrand-Gödel and Post. Post's normal form theorem. Formal grammars: introduction to theory of Chomsky on context-free and other languages and related automata. Transduction of languages by automata.

- 5-162f/5-163w/5-164s (112A-B-C). **MATHEMATICAL LOGIC.** (3-3-3 cr; prereq 1-250 or 3-445 or Phil 5-202 or #)
Propositional and predicate calculi, models for systems of logic, recursive functions, decision and completeness problems.
- 5-209 (109). **THEORY OF NUMBERS.** (3 cr; prereq 1-240 or 1-444)
Elementary properties of integers: prime and composite numbers; Euclid's algorithm; congruences; theorems of Fermat and Wilson; primitive roots; indices; Diophantine equations.
- 5-211f,w,s (149). **DETERMINANTS AND MATRICES.** (3 cr, §5-283, §5-242; prereq 1-250 or 3-445)
Determinants, matrices, linear equations, vector spaces, quadratic and bilinear forms, characteristic roots, applications to systems of ordinary differential equations.
- 5-219 (119). **TOPICS IN FINITE GROUPS.** (3 cr; prereq 1-240 or 1-444)
Introduction to theory of finite groups. Group axioms, examples of groups, subgroups and direct products, factor groups and composition series, permutation groups, prime power groups, Abelian groups.
- 5-242/5-243f,w,s (142-143). **VECTOR AND MATRIX THEORY WITH APPLICATIONS.** (3-3 cr, §5-211, §5-282/5-283/5-284; prereq 1-240 or 1-444)
Systems of linear equations, determinants, finite dimensional vector spaces, matrices, characteristic values and their numerical estimation, reduction to canonical forms, quadratic and bilinear forms. Application to engineering problems.
- 5-244 (180). **GROUP THEORY.** (3 cr; prereq 5-243 or #)
Permutation groups; groups related to geometrical configuration; invariant subgroups, Jordan-Holder composition theorem, Sylow groups, Abelian groups, elementary divisors, representation theory applications.
- 5-282/5-283/5-284 (131A-B-C). **FUNDAMENTAL STRUCTURES OF ALGEBRA.** (3 cr per qtr, §5-242/5-243, §5-244 for 5-282; prereq 1-240 or 1-444)
Theory-oriented course principally designed for students planning graduate work with a major in mathematics. Group theory—including topics such as normal subgroups, homomorphisms and the theorems of Lagrange, Cayley and Sylow. Ring theory—rings, integral domains, Euclidean rings, fields. Linear algebra—abstract approach to vector spaces, linear transformations, and the theory of canonical forms including the Jordan and rational canonical forms.
- CICS 5-301f (184). **ELEMENTARY NUMERICAL ANALYSIS IN ENGINEERING.** (3 cr; prereq Math 1-250 or 5-506)
Finite differences, interpolation, summation of series, numerical integration, Euler-Mac-Laurin formula and asymptotic expansions. Numerical solutions of systems of algebraic and transcendental equations. Newton's and Graeffe's method.
- CICS 5-302w/5-303s (185-186). **NUMERICAL ANALYSIS IN ENGINEERING.** (3-3 cr; prereq CICS 5-301 or #)
Approximation of functions and least squares. Approximate solution of ordinary and partial differential equations, Moulton's, Runge's relaxation and iteration methods. Calculation of eigenvalues of matrices and differential problems. Rayleigh-Ritz method. Integral equations. Programming of computers.
- 5-308 (188). **TOPICS IN TOPOLOGY.** (3 cr; for undergrad and beginning grad student who has not had a course in topology; prereq 1-240 or 1-444;
Axiomatic approach to topics from fundamentals of general topology basic to modern analysis. Topics include: elementary set theory, topologies and topological spaces, mappings of topological spaces, connected spaces, compact spaces, homeomorphisms, metric spaces, convergence, and special types of topological spaces such as regular spaces and normal spaces.
- 5-341/5-342f,w,s (181A-B). **INTRODUCTION TO TOPOLOGY.** (3-3 cr; prereq 1-250 or 3-445)
Metric spaces: completeness, compactness, uniform continuity. Abstract topologies: comparison of topologies, separation axioms, homeomorphisms. Product and function spaces. Connectedness. Local connectedness, Hahn-Mazurkiewicz Theorem, characterization of arc, Jordan curve theorem. Introduction to algebraic topology.
- 5-357 (140). **PROJECTIVE GEOMETRY.** (3 cr; prereq 1-240 or 1-444)
Geometric properties invariant under projective transformations; theorems of Desargues, Pascal, and Brianchon, and applications. Methods used in some quarters are mainly synthetic; in other quarters they are mainly analytic.
- 5-359 (187). **NON-EUCLIDEAN GEOMETRY.** (3 cr; prereq 1-240 or 1-444)
Foundations of Euclidean geometry. Euclid's fifth postulate and its implications. Hyper-

Course Offerings and Major Sequences

- holic plane geometry and trigonometry. Elliptic plane geometry and trigonometry. Consistency of non-Euclidean geometry.
- 5-363f/5-364w/5-365s (116A-B-C). MODERN GEOMETRY.** (3-3-3 cr; prereq 5-282 or §5-282 for 5-364)
Geometric transformations; similarities, affinities, collineation, inversion. Notion of a transformation group. Projective geometry as study of invariants of general linear group (Erlanger Program). Problems in geometry, geometry of transformation groups, mathematical analysis of space problem.
- 5-366f/5-367w/5-368s (117A-B-C). GEOMETRY.** (3-3-3 cr; prereq 1-240 or 1-444 for each qtr)
Selected chapters of geometry, such as convex bodies, projective geometry, geometry and imagination, elementary algebraic geometry, geometry of transformation groups, axiomatic geometry, geometrical constructions.
- 5-375 (115A). DIFFERENTIAL GEOMETRY.** (3 cr per qtr; prereq 5-403 or 1-260 or 5-602)
Plane and space curves, Frenet formulas, elementary theory of surfaces. 5-375 may be followed by 5-376 (and 5-377) to satisfy a two (three) quarter sequence requirement.
- 5-376/5-377 (115B-C). DIFFERENTIAL GEOMETRY.** (3 cr per qtr; prereq 5-375 and knowledge of linear algebra)
Introduction to differential forms. Advanced theory of surfaces, integral geometry, Riemannian geometry.
- 5-403f,w,s (147). VECTOR ANALYSIS.** (3 cr, §1-260; prereq 1-250 or 3-445)
Scalar and vector products, derivatives, geometry of space curves, del operator, line and surface integrals, divergence and Stokes' theorem, transformation of coordinates, dyadics, applications.
- 5-404 (104). VARIATIONAL PROBLEMS.** (3 cr; prereq 5-602 or 5-512 or §)
Euler-Lagrange equations, isoperimetric problems, geodesics. Fermat's and Hamilton's principles, methods of Rayleigh-Ritz, eigenvalues and eigenfunctions.
- 5-427/5-428/5-429f,w,s (127-128-129). APPLIED MATHEMATICS FOR SOCIAL AND BIOLOGICAL SCIENCES.** (3-3-3 cr; not acceptable for mathematics majors [all degrees] as part of their mathematics programs; prereq 1-250 or 3-445)
Mathematical tools and concepts other than statistics useful in behavioral sciences. Examples and problems taken from fields concerned. Topics include matrices, functions of several variables, probability, difference equations, learning models, two-person games.
- 5-436/5-437/5-438 (161-162-163). ANALYTICAL DYNAMICS.** (3-3-3 cr; prereq vector analysis, 1 qtr linear algebra)
Basic laws and principles. Lagrange's equations. Motion of particles and rigid bodies; e.g., satellites and gyroscopes. Matrix methods for small oscillations. Variational methods, Hamilton's principle, external properties of eigenvalues. Hamilton's equations, transformation theory, separable systems.
- 5-441s (169). MATHEMATICAL THEORY OF FLUID FLOW.** (3 cr; prereq 5-646, 5-572, or 5-403 5-568 or §)
General equations of fluid mechanics. Concepts from thermodynamics. Classical constitutive equations. Specialization to various subfields of fluid mechanics, including hydrostatics, barotropic perfect fluids, gas dynamics and viscous flow theory. Examples of exact solutions.
- 5-455/5-456 (155-156). TENSOR ANALYSIS WITH APPLICATIONS.** (3-3 cr; prereq vector analysis, 1 qtr linear algebra or §)
- 5-457/5-458/5-459 (157-158-159). METHODS OF APPLIED MATHEMATICS.** (3-3-3 cr; prereq 5-602 or 5-614 or §)
- 5-471 (192). THEORY OF APPROXIMATION IN NUMERICAL ANALYSIS.** (3 cr; prereq 5-568 or 5-573, CICS 5-302 or §)
Orthogonal functions, Chebyshev approximations, rational approximation, approximations in several variables, use of approximation in computing.
- 5-506f,w,s (106). DIFFERENTIAL EQUATIONS.** (3 cr, §1-250; prereq 3-445)
Problem course, methods for solving ordinary differential equations of various types with necessary theory for developing these methods.
- 5-512f,w,s (148). DIFFERENTIAL EQUATIONS.** (3 cr, §5-521; prereq 1-250 or 5-506)
Linear differential and difference equations with constant coefficients, isoclines, phase plane, reduction in order, Picard's method, uniform convergence, series solutions, Bessel functions, Legendre polynomials, introduction to boundary value problems.

- 5-514s (135). INTEGRAL EQUATIONS.** (3 cr; prereq 1-250 or 5-506)
 Introduction to 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.
- 5-521 (150). THEORY OF ORDINARY DIFFERENTIAL EQUATIONS.** (3 cr, §5-512; prereq 1-250 or 5-506)
 Linear equations of second order, successive approximations. Existence theorems, systems of ordinary differential equations. Numerical integration and solution by series.
- 5-541/5-542/5-543 (196-197-198). SPECIAL FUNCTIONS IN MATHEMATICAL ANALYSIS.** (3-3-3 cr; prereq 5-568 or 5-573 or §)
 Asymptotic expansions. Gamma and beta functions. Hypergeometric functions as solutions of differential equations. Bessel functions using Sommerfeld's contour integrals. Legendre functions.
- 5-567f,w (167). FOURIER SERIES AND BOUNDARY VALUE PROBLEMS.** (3 cr, §5-571; prereq 1-250 or 5-506)
 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.
- 5-568w,s (168A). ELEMENTARY THEORY OF COMPLEX VARIABLES.** (3 cr; prereq 5-602 or 5-403, 5-512, 5-211 or §)
 Derivative and integral of a function of a complex variable. Cauchy's integral theorem and formula, residues. Application to evaluation of integrals, conformal mapping.
- 5-569s (168B). APPLICATIONS OF COMPLEX VARIABLES.** (3 cr; prereq 5-568 or §)
 Conformal mapping, Schwarz-Christoffel transformations, Laplace transforms, and applications.
- 5-571/5-572/5-573 (173-174-175). ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS.** (3-3-3 cr, §5-567, §5-568; prereq 1-250, 3-445 or 5-506 or §)
 Partial differential equations of theoretical physics, one-dimensional wave equation, 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.
- 5-601/5-602/5-603 (107A-B-C). ADVANCED CALCULUS.** (3-3-3 cr; prereq 1-250 or 3-445)
 5-601: 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. 5-602: Line and surface integrals; Stokes' theorem; convergence of infinite series; orthogonal functions; uniform convergence; integration and differentiation of series. 5-603: Real numbers; continuous functions; limits; properties of continuous functions; differentiation; the Riemann integral; improper integrals.
- 5-606w/5-607s (125A-B). CRITICAL REASONING IN MATHEMATICAL ANALYSIS.** (3-3 cr, §5-612/5-613/5-614; prereq 1-240 or 1-444)
 The subject matter of this course, based on the elementary concepts of mathematical analysis is used mainly as a vehicle for the principal aim of the course: to develop in the student an understanding of mathematical rigor.
- 5-612/5-613/5-614 (130A-B-C). INTRODUCTION TO ANALYSIS.** (3-3-3 cr; principally for students planning to take grad work with major in mathematics, as preparation for grad courses in analysis; prereq 1-250 or 3-445)
 Theory of real numbers; elements of point set theory; limits; continuity; infinite sequences and series; integration and differentiation; vector analysis.
- 5-615 (179). LEBESQUE INTEGRAL.** (3 cr; prereq 5-602 or 5-612, 5-613 or §)
 Basic limit theorems. Comparison with Riemann integral. Lebesgue measure. Absolute continuity.
- 5-625/5-626f,w,s (111A-B). DEVELOPMENT OF NUMBER SYSTEMS.** (3-3 cr; prereq 1-240 or 1-444)
 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.
- 5-644/5-645/5-646 (144-145-146). FOURIER SERIES AND ORTHOGONAL FUNCTIONS.** (3-3-3 cr; prereq 5-602 or §)

Course Offerings and Major Sequences

General theory of orthonormal functions developed and applied to Fourier, Legendre, Bessel, Hermite and other series. Convergence and summability theorems are provided, and Fourier integral is considered.

5-661/5-662 (133B-134B). PROBABILITY WITH TECHNOLOGICAL APPLICATIONS. (3-3 cr; prereq Stat 5-131 and #)

Spectral analysis of stationary processes, linear and nonlinear transformations, prediction and smoothing, recurrent events, random walk and diffusion, Markov chains, Poisson processes.

5-679 (178). PROBABILITY. (3 cr; prereq 1-240 or 1-444)

Elementary principles of probability, total and compound probability. Probability, expectation, repeated trials, and as time permits topics chosen from following: Stirling's formula, probability integral, geometrical probability, probability of causes, Bayes' theorem, errors of observation, principle of least squares.

5-681/5-682/5-683 (178A-B-C). INTRODUCTION TO PROBABILITY. (3-3-3 cr; prereq 5-602 or Stat 5-133 or #)

Logical development and various applications of probability. Probability spaces, random variables, central limit theorem; Markov chains.

5-900f,w,s (110). TUTORIAL COURSE IN ADVANCED MATHEMATICS. (Cr ar; prereq 1-250 or 3-445)

Qualified students whose needs are not met by courses offered may make special arrangements for obtaining content of other graduate courses regularly offered by the department.

5-910/5-911/5-912 (199A-B-C). PROBLEM COURSE. (3-3-3 cr; prereq #)

Develops problem-solving techniques in many areas of mathematics. Topics range from elementary to advanced levels, adapted to students of varied backgrounds.

MICROBIOLOGY (MicB)

● Major Sequence in Arts College—

Requirements:

A. Chem 1-004/1-005†; Chem 3-100, 3-101; Chem 3-301, 3-302, and either Chem 3-303 or Biol 3-021.

B. Math through 1-444.

C. Phys 1-270/1-280/1-290 (recommended) or 1-040/1-050/1-060.

D. Biol 1-051, 3-011, 3-012 (recommended) or 1-001/1-002†.

E. Microbiology (total cr 28): 3-103 or 5-105, or VMic 3-103 or Biol 3-013; MicB 5-216, 5-217 and 5-321. Additional Upper Division credits in microbiology or acceptable recommended courses to a total of 28 credits.

Honors Program: Microbiology Majors—Information may be obtained in the microbiology office.

Note—MicB 1-101, Elementary Microbiology (offered through General Extension Division, winter quarter, to Hennepin County Hospital nurses) is open to students of occupational therapy, mortuary science, and dental hygiene who obtain permission from the Department of Microbiology.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

3-103f,w,s (53). 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, Johnson, Lindorfer

Lectures, demonstrations, and laboratory instruction in morphology, physiology, taxonomy, and ecology of bacteria. Practical applications of fundamental principles.

**Microscope required. Students may obtain use of microscope by purchasing \$3 microscope cards from bursar.

- FScI 3-120, 5-120f. FOOD MICROBIOLOGY.** (3 or 5 cr [3 cr lect, 2 cr lab]; lect only with §; prereq MicB 3-103) Busta
 Relationships of environment to origins, 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.
- FScI 3-122, 5-122w. SANITATION AND PROCESS MICROBIOLOGY.** (3 or 4 cr [3 cr lect, 1 cr lab]; lect only with §; prereq 3-120 or 5-120 or §) Busta
 Factors that influence the control and destruction of microorganisms; chemical, physical, and microbiological sanitizing of dairy and food processing equipment; microbial fermentation and preservation methods.
- 5-105f,w** (153). BIOLOGY OF MICROORGANISMS.** (4 cr, §3-103; prereq 5 cr in biological sciences, Chem 3-301, 3-302 or §) Klein, Chapman
 Lectures, demonstrations, and laboratory exercises in taxonomy, anatomy, physiology, biochemistry, and ecology of microbes. Emphasis on fundamental properties of bacteria.
- PubH 5-171f,s. ENVIRONMENTAL MICROBIOLOGY.** (3 cr; prereq 5-002, 5-151 and MicB 3-103 or §) Greene
 Survival, dissemination, transportation and significance of microorganisms in the environment; application of principles to environmental health problems.
- 5-216w (116). IMMUNOLOGY.** (3 cr; prereq 3-103 or 5-105) Gray
 Host-parasite interactions; 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 disease; homotransplantation and tumor immunity; mechanisms of natural and acquired immunity.
- 5-217w (116A). IMMUNOLOGY LABORATORY.** (2 cr; prereq ¶5-216) Gray
- 5-232s** (102). MEDICAL MICROBIOLOGY.** (6 cr; for other than med students; prereq 5-216) Chapman
 Pathogenic bacteria, fungi, and viruses in relation to disease; principles of infection, pathogenesis, and immunity; microbiological techniques for laboratory diagnosis and antibiotic determination.
- 5-311s (110). MICROBIAL GENETICS.** (3 cr; prereq 3-103 or 5-105 or §; offered 1970-71 and alt yrs) Zissler
 Genetic mechanisms in bacteria, bacteriophages, fungi, protozoa, and algae. Mutagenesis; selection; adaptation; cytoplasmic inheritance; patterns of genetic recombination; fine structure of genetic material.
- 5-321w (121). PHYSIOLOGY OF BACTERIA.** (3 cr; prereq 3-103 or 5-105 [minimal grade of C] and 8 cr in organic chemistry or biochemistry) Rogers
 Chemical and physical organization of bacteria as related to function; growth; energy metabolism including exudations and fermentations; nutritional requirements; antimicrobial agents; autotrophic mechanisms; and microbial differentiation.
- 5-322w (122). PHYSIOLOGY OF BACTERIA LABORATORY.** (2 cr; prereq 5-121 and a lab course in basic bacteriology) Staff
 Techniques employed in the study of bacterial physiology and metabolism.
- 5-424s (124). BIOLOGY OF VIRUSES.** (3 cr; prereq 3-103 or 5-105 and 5-321) Plagemann
 Structure, composition and properties of bacterial and mammalian viruses; their interaction with cells and effect on host cell metabolism; biochemistry of viral replication; techniques employed in study and diagnosis of viral infections; viral tumorigenesis.
- 5-512s (112). GENERAL MYCOLOGY.** (3 cr; prereq 3-103 or 5-105 or §; offered when feasible) Staff
 Physiology; genetics; development; ecology; evolution; taxonomy; economic importance of yeasts, molds, actinomycetes, and other fungi.
- 5-612s (103). ECOLOGY OF SOIL MICROORGANISMS.** (4 cr; prereq 3-103 or 5-105, or Biol 3-013 and §; offered 1970-71 and alt yrs) Schmidt
 (Same as Soil 5-612 and Ecol 5-018) Soil as microhabitat; nature of microhabitat; nature of microbial population of soil; interactions among microorganisms in soil ecosystem, and significant activities of soil microorganisms. Lectures and laboratory.
- 5-970f,w,s (152). SPECIAL PROBLEMS.** (Cr ar; prereq §)

**Microscope required. Students may obtain use of microscope by purchasing \$3 microscope cards from bursar.

MIDDLE EASTERN LANGUAGES

The department aims to acquaint the student with Middle Eastern languages, in order to enable him to read and do research in these languages and their literatures; to equip him with a speaking knowledge of at least one Middle Eastern language, and to acquaint him through original texts and through English translations with the culture of the peoples of the Middle East.

The department offers at present a B.A., M.A., and Ph.D. in Arabic and a B.A. in Hebrew.

General Program—Courses especially recommended for general education purposes are Arab 3-201/3-202/3-203, 3-511/3-512/3-513, 3-531, 3-551/3-552/3-553 and 5-501/5-502/5-503; Heb 3-501/3-502.

Arabic (Arab)

Major Sequence in Arts College—Arab 3-011/3-012/3-013, 3-201/3-202/3-203, 5-011/5-012/5-013, 9 cr in courses numbered 3-001 or above.

LOWER DIVISION COURSES

- 1-101f/1-102w/1-103s (1-2-3). **INTRODUCTION TO ARABIC GRAMMAR AND READING.** (5-5-5 cr)
Vocabulary forms and syntax, intensive graded reading and speaking facility.
- 1-111f/1-112w/1-113s (4-5-6). **BEGINNING SPOKEN ARABIC.** (5-5-5 cr; prereq ¶Literary Arabic)
Study of one modern dialect. Students expected to use laboratory for practice.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-011f/3-012w/3-013s (51-52-53). **INTERMEDIATE ARABIC.** (4-4-4 cr; prereq 1-103 or #)
Readings in simple, classical, and modern prose; constant review of grammar.
- 3-015f/3-016w/3-017s (61-62-63). **ARABIC COMPOSITION.** (3-3-3 cr; prereq 3-013 or #)
Introduction to various styles of prose compositions in Arabic, and setting themes for compositions in Arabic.
- 3-201f/3-202w/3-203s (81-82-83). **SURVEY OF ARABIC LITERATURE.** (3-3-3 cr; prereq 3-017 or #; knowledge of Arabic required of majors only)
Pre-Islamic, Umayyad, Abbasid, and modern prose and poetry at advanced level.
- 3-511f/3-512w/3-513s (74-75-76). **HISTORY OF ARABS.** (3-3-3 cr, §Hist 3-541/3-542/3-543)
Chejne
3-511: From pre-Islamic days to downfall of Umayyads of Damascus. 3-512: From Abbasids to fall of Baghdad in 1258. 3-513: From Crusades to modern times.
- 3-521f/3-522w/3-523s (65-66-67). **MIDDLE EAST IN THE 19TH CENTURY: 1798-1919.** (3-3-3 cr) Farah
Cultural and political impact of the West; Eastern Question and the dissolution of the Ottoman hegemony; beginning reformist movements and rise of nationalism in Iran and the Ottoman provinces of the Arab world.
- 3-531s (91). **ASIAN CIVILIZATION: ISLAMIC WORLD.** (3 cr; prereq soph with # or jr)
- 3-541f/3-542w (71-72). **ISLAMIC RELIGION.** (3-3 cr)
Rise and development of Islamic religion; medievalism and rejuvenation.
- 3-545s (73). **ISLAMIC MYSTICISM.** (3 cr)
Asceticism and Sufism; the mystics, their literature, orders, and hierarchies.
- 3-551f/3-552w/3-553s (77-78-79). **INTELLECTUAL LIFE IN ISLAM.** (3-3-3 cr; prereq # for 3-551...3-552 or # for 3-553)
3-551: Rise of Muslim scholarship during 1st Century of Islam. 3-552: Various branches of Muslim scholarship in medieval times. 3-553: Revivalist period from 19th Century to present with reference to transmission of ideas and to various intellectual movements.

- 5-011f/5-012w/5-013s (101-102-103). **ADVANCED LITERARY ARABIC.** (3-3-3 cr; prereq 3-013 or #)
Reading and analysis of both early classical texts and modern writings. Emphasis on structure, syntax, and style.
- 5-014w (105). **STRUCTURE OF ARABIC.** (3 cr; prereq 2 yrs of Arabic or #)
Descriptive analysis of main structure of Arabic, classical and colloquial.
- 5-111f/5-112w/5-113s (141-142-143). **READINGS IN LEGAL TEXTS.** (3-3-3 cr; prereq 5-013 or #)
- 5-121f/5-122w/5-123s (145-146-147). **READINGS IN ISLAMIC THEOLOGICAL AND PHILOSOPHICAL TEXTS.** (3-3-3 cr; prereq 5-013 or #)
- 5-211f/5-212w (131-132). **READINGS IN CLASSICAL ARABIC LITERATURE.** (3-3 cr; prereq 5-013)
- 5-231f/5-232w/5-233s (157-158-159). **ARABIC LITERATURE IN THE 19TH-20TH CENTURIES.** (3-3-3 cr; prereq 5-013 or #)
- 5-311 (166). **HISPANO-ARABIC POETRY.** (3 cr; prereq 5-503 or #)
- 5-401 (148). **BIBLIOGRAPHY OF MIDDLE EAST STUDIES.** (3 cr; prereq knowledge of at least one European language other than English, familiarity with at least one Middle Eastern language desirable and #)
Introduction to source materials, reference works and guides to the literature of the Islamic Middle East.
- 5-405 (168). **IBN KHALDUN.** (3 cr; prereq 5-503 or #)
- 5-406 (167). **IBN HAZM OF CORDOVA.** (3 cr; prereq 5-503 or #)
- 5-501f/5-502w/5-503s (161-162-163). **HISPANO-ARABIC LITERATURE AND CULTURE.** (3-3-3 cr; prereq #)
- 5-701f/5-702w/5-703s (110-111-112). **DIALECT ANALYSIS.** (3-3-3 cr; prereq knowledge of Arabic and #)
Study of differences in various Arabic dialects, contrasting at least two of these.
- 5-711f/5-712w/5-713s (121-122-123). **READINGS IN ARAB GRAMMARIANS.** (3-3-3 cr; prereq 5-013)
- 5-721f/5-722w/5-723s (154-155-156). **SEMINAR: DEVELOPMENT OF ARABIC LANGUAGE AND LITERATURE.** (3-3-3 cr; prereq # for 5-721)
5-721: Early state of Arabic language from pre-Islamic times to middle of 8th Century. 5-722: Development in Golden Age of Abbasid. 5-723: Decline of language and its revival in modern times.
- 5-970 (151-152-153). **DIRECTED READINGS.** (1-3 cr per qtr; for advanced students wishing to work on special problems; prereq 3-017 or #)
Reading and periodic consultations.
- 5-990H (191H-192H-193H). **HONORS COURSE: RESEARCH.** (1-3 cr per qtr; prereq 5-970 or #)
Individual studies for honors work at advanced level.

Aramaic (Aram)

UPPER DIVISION COURSES

- 5-011f/5-012w/5-013s (101-102-103). **ARAMAIC.** (3-3-3 cr; for students preparing for Biblical studies, ancient history majors, and students specializing in semitic languages; prereq Arab 3-013 or #)
Stresses fundamentals of grammar and fluency in reading of Biblical and ancient Aramaic.

Hebrew (Heb)

Major Sequence in Arts College—3-015/3-016/3-017, 3-201/3-202/3-203 and at least 12 other cr in courses numbered above 3-013 with the exception of 3-501/3-502 and 3-107, of which only 3 cr may be applied toward the major.

LOWER DIVISION COURSES

- 1-101f/1-102w/1-103s (1-2-3). **BEGINNING HEBREW.** (5-5-5 cr)
Speaking and reading knowledge of Modern Hebrew. Intensive drill in sentence pat-

Course Offerings and Major Sequences

- terms and conversation. Basic features of Biblical syntax; may serve as foundation for Biblical studies.
- 1-301 (25). SURVEY OF HEBREW GRAMMAR.** (4 cr; for students who, through previous studies, have ability to read simple texts, but desire firm grammatical foundation; prereq at least 3 yrs study below college level, or #)
Intensive review of grammatical forms and patterns chiefly through systematic analysis of variety of Hebrew texts, oral drills, and written composition.
- 3-011f/3-012w/3-013s (51-52-53). INTERMEDIATE HEBREW.** (4-4-4 cr; prereq 1-103 or #)
Modern short stories, selected readings emphasizing contemporary idiom, newspaper articles, and selected Biblical narratives. Course and recitation conducted chiefly in Hebrew.
- 3-015f/3-016w/3-017s** (61-62-63). ADVANCED HEBREW.** (3-3-3 cr; prereq 3-013 or #)
Toledano
Intensive reading in prose and poetry from entire range of Hebrew literature. Class conducted chiefly in Hebrew.
- 3-104f/3-105w/3-106s** (67-68-69). PROBLEMS IN BIBLICAL STUDIES.** (2-2-2 cr; for majors and others adequately prepared to read Bible in Hebrew; prereq 3-203 or #)
- 3-107 (78). EMERGENCE OF CLASSICAL JUDAISM.** (3 cr; no knowledge of Hebrew required) Toledano
Development of classical Judaism during formative periods of Christianity and Islam: teachings of the Pharisees, development of Rabbinic thought, Judeo-Islamic symbiosis, medieval Jewish philosophy.
- 3-111f/3-112w/3-113s** (71-72-73). RABBINICAL TEXTS.** (2-2-2 cr; prereq 3-017 or 3-203 or #)
Selections from Talmud, Midrash, and Codes.
- 3-121f/3-122w/3-123s** (81-82-83). MEDIEVAL HEBREW LITERATURE.** (2-2-2 cr; prereq 3-017 or 3-203 or #)
Survey of representative writers and thinkers. 3-121: belles lettres with emphasis on Halevy, Ibn Gabriol, and Al-Harizi. 3-122: Philosophic texts—Moreh Nebukim, Kuzari. 3-123: Medieval Exegetes—Rashi, Kimchi, Ibn Ezra, Nachmanides.
- 3-201f/3-202w/3-203s** (64-65-66). SURVEY OF BIBLICAL LITERATURE.** (3-3-3 cr; prereq 3-013 or #)
Acquaintance with variety of literary genres in Bible and exposure to scholarly trends in Biblical Studies through extensive reading of selected Biblical books. 3-201: Historical books. 3-202: Prophetic literature. 3-203: Poetical books.
- 3-301 (94). MODERN HEBREW ESSAY.** (2 cr; prereq 3-017 or #)
Study of the major ideas and issues of the 19th and early 20th centuries through analysis of representative works; studies of selected essays of Ahad Hacam, Krochmal, Berditchevsky, and Frischmann.
- 3-304 (95). MODERN HEBREW SHORT STORY.** (2 cr; prereq 3-017 or #)
Readings from prose of 19th and 20th centuries including selections from Mendele, Peretz, Agnon and others.
- 3-307 (96). MODERN HEBREW POETRY.** (2 cr; prereq 3-017 or #)
Selections from work of important modern Hebrew poets, such as Bialik, Tchernichovsky, Lamdan, and others.
- 3-501f/3-502w (74-75). ANCIENT ISRAEL.** (3-3 cr; no knowledge of Hebrew required)
History of Israel and development of its religion. Study of Biblical literature in the cultural, historical, and religious milieu of its origin.
- 3-901H/3-902H/3-903H (91H-92H-93H). HONORS COURSE.** (3-3-3 cr; prereq candidate for honors in Hebrew)
Organized around significant theme or problem in Hebrew studies.
- 5-104f/5-105w/5-106s (104-105-106). POSTBIBLICAL LITERATURE.** (3-3-3 cr; prereq 3-013 or #)
Selections from various genres of post-Biblical literature including philosophical, literary, legal, and religious texts.
- 5-701s (114). INTRODUCTION TO COMPARATIVE STUDY OF SEMITIC LANGUAGES.** (3 cr; prereq grad or # and 1 yr of two semitic languages, ¶Heb 1-103)
Historical survey of linguistic development in semitic languages. Selected problems in phonology and morphology.

**Students wishing to enter course out of sequence must consult with instructor.

5-711f/5-712w/5-713s (171-172-173). NORTHWEST SEMITIC INSCRIPTIONS. (3-3-3 cr; prereq 3-013 or #)

Fundamentals of Ugaritic alphabetic cuneiform script, morphology, and syntax, study of epigraphy, linguistic changes, style, and literary relations of Hebrew, Moabite, Phoenician, and Punic inscriptions.

5-970 (151-152-153). DIRECTED READINGS. (1-3 cr per qtr; for advanced students wishing to work on special problem; prereq 3-013 or #)

5-990H (191H-192H-193H). HONORS COURSE: RESEARCH. (3-3-3 cr [may be repeated for cr]; prereq 5-970 or #)

Independent research on topic of interest to student under guidance of faculty member.

Persian (Pers)

LOWER DIVISION COURSES

1-101f/1-102w/1-103s (1-2-3). INTRODUCTION TO PERSIAN GRAMMAR AND READING. (5-5-5 cr)

Vocabulary forms and syntax, intensive graded reading and speaking facility.

UPPER DIVISION COURSES

3-011f/3-012w/3-013s (51-52-53). INTERMEDIATE PERSIAN. (4-4-4 cr; prereq 1-103 or #; offered when feasible)

General review of essentials of grammar, some translation, and selected reading in medieval and modern prose.

5-011f/5-012w/5-013s (101-102-103). ADVANCED LITERARY PERSIAN. (3-3-3 cr; prereq 3-013 or #; offered when feasible)

Reading and analysis of both medieval texts and modern writings.

5-970 (151-152-153). DIRECTED READINGS. (1-3 cr per qtr; for advanced students wishing to work on special problems; prereq 3-013 or #; offered when feasible)

Reading and periodic consultations.

Turkish (Turk)

LOWER DIVISION COURSES

1-101f/1-102w/1-103s (1-2-3). INTRODUCTION TO TURKISH GRAMMAR AND READING. (5-5-5 cr)

Vocabulary forms and syntax, intensive graded reading and speaking facility.

UPPER DIVISION COURSES

3-011f/3-012w/3-013s (51-52-53). INTERMEDIATE TURKISH. (4-4-4 cr; prereq 1-103 or #)

General review of essentials of grammar, some translation, and selected reading in modern prose.

5-011f/5-012w/5-013s (101-102-103). ADVANCED LITERARY TURKISH. (3-3-3 cr; prereq 3-013 or #)

Reading and analysis of modern texts.

5-014f/5-015w/5-016s (121-122-123). INTRODUCTION TO OSMANLI TURKISH. (3-3-3 cr; prereq Arab 3-013 and Pers 1-103 or #)

Introduction to Ottoman script and writings.

5-970 (151-152-153). DIRECTED READINGS. (1-3 cr per qtr; prereq 3-013 or #)

Reading and periodic consultations.

MILITARY SCIENCE (Mil)

The program in military science, leading to a commission in the United States Army Reserve, is available to Arts College students as well as to those in other colleges of the University. Instruction encompasses military fundamentals common to all branches of the Army. The aim is to provide a basic military education and, in conjunction with other college curricula, to develop individual characteristics and attributes or leadership essential to an officer. For information concerning

Course Offerings and Major Sequences

the requirements and the opportunities of this program, see the *Army, Navy, and Air Force ROTC Bulletin* of the University of Minnesota, or call at the Military Science office, 108 Armory.

The Arts College will accept credits from Upper Division courses in military science to fulfill a minor toward a B.A. degree (students who are presently under the old degree requirements), or for credits outside the major.

LOWER DIVISION COURSES

(Preprofessional Division)

Military Science I

- 1-011f (11). **WORLD MILITARY HISTORY.** (2 cr; prereq Δ , Leadership Laboratory**) Provides student with basic concepts of military history to include principles of war, military definitions, and relationship of geography, economics and technology to military history; beginning of discussion on warfare through the ages—rise of Islam and its military institutions.
- 1-012w (12). **WORLD MILITARY HISTORY.** (2 cr; prereq Δ) Warfare through ages; discovery of gunpowder and beginnings of modern armies; limited war of 18th century; great age of sail; nation in arms and Napoleon; armaments race in 19th century.
- 1-013s (13). **WORLD MILITARY HISTORY.** (2 cr; prereq Δ , Leadership Laboratory**) Continuation of discussion of warfare through the ages; advent of total war—World War I and World War II; policy of containment and its military implications; Korean War and rearmament; modern Army.

Military Science II

- 1-021f (21). **FOUNDATIONS OF NATIONAL POWER.** (2 cr; prereq Δ , Leadership Laboratory**) Basic factors involved in a nation's capacity for developing force; geographical positions, nature of populations, social organization within a nation, a nation's ideology and economic and technological resources of a nation.
- 1-022w (22). **FOUNDATIONS OF NATIONAL POWER.** (2 cr; prereq Δ) Discussion of political systems and their influence on national power; force as related to other types of influence; development of various types of influence, presentation of military force as center of the influence concept.
- 1-023s (23). **FOUNDATIONS OF NATIONAL POWER.** (2 cr; prereq Δ ; Leadership Laboratory**) Discussion of levels of military force to include various types of military force.

UPPER DIVISION COURSES

(Professional Division)

Military Science III

- 5-131f (131). **PROBLEMS IN MAP READING AND LEADERSHIP.** (3 cr; prereq Δ , Leadership Laboratory**) Explanation of tactical use of United States and foreign military maps, land navigation and skills utilized in reading and interpreting military maps and aerial photographs; psychology and problem solving techniques utilized in military environment, study of individual and small group leadership problems.
- 5-132w (132). **SMALL UNIT TACTICS.** (3 cr; prereq Δ) Small unit operations in conventional and unconventional battlefield environments, organization and equipment organic to modern army; employment of these units in tactical situations.
- 5-133s (133). **PRINCIPLES OF MILITARY INSTRUCTION.** (3 cr; prereq Δ , Leadership Laboratory**) Provides student with working knowledge of principles, methods and techniques of preparing, presenting and evaluating military instruction. Practice teaching by student.

**Leadership Laboratory is taught concurrently to all cadets during fall and spring quarters. Laboratory designed so that individual students can demonstrate their progressive ability in individual and group drill. Progressive and extensive practice in voice and command, unit formation, exercise of command, bearing and posture. Assists in identification and development of individual leadership traits and qualities of character.

Military Science IV**5-141f (141). MILITARY OPERATIONS.** (3 cr; prereq Δ , Leadership Laboratory**)

Explanation of command and staff organization and functions; discussion of a commander's estimate of situation and his operations order; importance of military intelligence cycle to military team; principles of training management and its application to successful military operations.

5-142w (142). MILITARY LOGISTICS AND ADMINISTRATION. (3 cr; prereq Δ)

Military logistical supply system and its related importance to combat operations; military personnel management procedures, including records, classification and assignment, unit fund accounting, and mess management.

5-143s (143). MILITARY LAW AND SERVICE ORIENTATION. (3 cr; prereq Δ , Leadership Laboratory**)

History and basic concepts of military justice; emphasis placed on 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 officer.

MODERN GREEK

See Classics

MUSIC (Mus)

The Department of Music offers a Bachelor of Arts degree in Music with specializations in applied music, history and literature, composition and theory, theory, and piano pedagogy. The department also offers a Bachelor of Fine Arts degree, a degree program designed for students with marked ability who plan to follow music as a profession.

The Department of Music is a liberal arts college member of the National Association of Schools of Music. The requirements for graduation with degrees carrying credit for courses in music, as set forth in this bulletin, are in accordance with the published regulations of the NASM.

The department offers courses in applied music, theory, composition, musicology, ethnomusicology, music history and literature, and group performance to students wishing to obtain a broad cultural background as well as to those majoring in music.

Music Scholarships—Scholarships in varying amounts are available to students majoring in music. Musical and scholastic aptitude are important factors in making these grants. Tryouts are held in Scott Hall during the spring quarter each year.

Applied music fees are waived for junior and senior majors who have met the Lower Division requirements, including an Upper Division qualifying examination in applied music.

Requirements for Music Majors—Students majoring in music must fulfill the requirements of both the Lower and Upper Divisions. A total of 144 credits in courses other than applied music (piano, voice, trumpet, etc.) must be obtained to be eligible for the bachelor of arts degree.

Music majors are required to participate either in chorus, orchestra, concert band, chamber singers, instrumental ensemble, men's glee club, women's chorus, or in a combination of these, for a minimum of 6 quarters.

Music majors are required to attend the weekly Music Hours.

**Leadership Laboratory is taught concurrently to all cadets during fall and spring quarters. Laboratory designed so that individual students can demonstrate their progressive ability in individual and group drill. Progressive and extensive practice in voice and command, unit formation, exercise of command, bearing and posture. Assists in identification and development of individual leadership traits and qualities of character.

Course Offerings and Major Sequences

Lower Division

Freshman Year

Materials and Structure of Music I: Mus 1-501/1-502/1-503 (2 cr per qtr)
Ear-training and Sight-singing I: Mus 1-511/1-512/1-513 (2 cr per qtr)
Applied Music: Mus 1-201 through 1-224 (or) 1-301 through 1-324 (2 or 4 cr per qtr)

Sophomore Year

Materials and Structure of Music II: Mus 1-504/1-505/1-506 (2 cr per qtr)
Ear-training and Sight-singing II: Mus 1-514/1-515/1-516 (1 cr per qtr)
Applied Music: Mus 1-201 through 1-224 (or) 1-301 through 1-324 (2 or 4 cr per qtr)
History of Music: Mus 1-601, 1-602, 1-603 (3 cr per qtr)

Students electing Upper Division sequences A and B, below, are required to play or sing an *Upper Division Qualifying Examination* before enrolling in Upper Division.

Upper Division

During junior and senior years a student must complete one of the following major sequences:

A. *Applied Music (Instrumental)*—Total of 36 cr in applied music (Lower and Upper Division credit), including a minimum of 6 cr in Mus 1-101 or 1-201 or 1-301, Piano, or 1-151/1-152/1-153, Class Piano (or exemption by examination). Senior recital required.

(Credits shown in parentheses)

Mus 3-531—Analysis I (3)
Mus 3-541/3-542/3-543—Counterpoint (6)
Mus 3-604—History of 20th Century Music (3)
12 additional Upper Division credits in music

B. *Applied Music (Vocal)*—Total of 36 cr in applied music (Lower and Upper Division credit), including a minimum of 12 cr in Mus 1-101 or 1-201 or 1-301, Piano, or 1-151/1-152/1-153, Class Piano or demonstrated ability to play simple accompaniments. Senior recital required.

(Credits shown in parentheses)

Mus 3-531—Analysis I (3)
Mus 5-741/5-742/5-743—Vocal Literature (6)
Mus 3-604—History of 20th Century Music (3)
12 additional Upper Division credits in music

C. *History and Literature*—Total of 24 credits in applied music (Lower and Upper Division credit), including a minimum of 12 cr in Mus 1-101 or 1-201 or 1-301, Piano, or 1-151/1-152/1-153, Class Piano (or exemption by examination).

(Credits shown in parentheses)

Mus 3-531—Analysis I (3)
Mus 3-541/3-542/3-543—Counterpoint (6)
Mus 3-604—History of 20th Century Music (3)
Mus 5-501/5-502/5-503—Advanced Materials and Structure of Music (6)
18 additional Upper Division credits in Music History and Literature area

D. *Composition and Theory*—Total of 24 cr in applied music (Lower and Upper Division credit), including a minimum of 12 cr in Mus 1-101 or 1-201 or 1-301, Piano, or 1-151/1-152/1-153, Class Piano (or exemption by examination).

(Credits shown in parentheses)

Mus 3-531—Analysis I (3)
Mus 3-541/3-542/3-543—Counterpoint (6)
Mus 3-604—History of 20th Century Music (3)
Mus 5-501/5-502/5-503—Advanced Materials and Structure of Music (6)
Mus 5-551/5-552/5-553—Composition I (6)
Mus 5-561/5-562/5-563—Orchestration (6)
6 additional Upper Division credits in music

E. Theory—Total of 24 cr in applied music (Lower and Upper Division credit), including a minimum of 12 cr in Mus 1-101 or 1-201 or 1-301, Piano, or 1-151/1-152/1-153, Class Piano (or exemption by examination).

(Credits shown in parentheses)

Mus 3-531—Analysis I (3)
 Mus 3-541/3-542/3-543—Counterpoint (6)
 Mus 3-604—History of 20th Century Music (3)
 Mus 5-501/5-502/5-503—Advanced Materials and Structure of Music (6)
 Mus 5-561/5-562/5-563—Orchestration (6)
 12 additional Upper Division credits in music

F. Piano Pedagogy—Total of 30 cr in Mus 1-201 or 1-301 and 3-201 or 3-301. A public performance is required.

(Credits shown in parentheses)

Mus 3-531—Analysis I (3)
 Mus 3-541/3-542/3-543—Counterpoint (6)
 Mus 3-604—History of 20th Century Music (3)
 Mus 5-351/5-352/5-353—Piano Pedagogy I (6)
 Mus 5-354/5-355/3-356—Piano Pedagogy II (6)
 6 additional Upper Division credits in music

Modification of these sequences will be permitted upon petition approved by the major adviser and the director of the Upper Division.

For a special curriculum in music education see the *College of Education Bulletin*. For courses in music education which are open to Arts College students, see page 171.

Courses in Applied Music

Offerings in applied music are classified according to three modes: *elective* (with or without credit), *applied*, and *performance*; and four levels: Lower Division (prefix 1, or 0 for no credit), Upper Division (prefix 3), and two Graduate levels (prefixes 5 and 8). A student may not register for a course in applied music *for credit* until he has passed the required applied entrance examination. The examining committee will determine the mode(s) for which a student may register. Students should consult with the Music Department regarding the mode and level of applied music appropriate for fulfillment of specific requirements in each degree program. To register for Upper Division credit in applied music, the student must have completed 12 credits at the Lower Division level on the same instrument and must pass an Upper Division qualifying examination.

Courses in applied music carry either 2 credits (minimum of 10 private half-hour lessons) per quarter or 4 credits (minimum of 10 hour lessons) per quarter. A special fee of \$50 for 2 credits, or \$100 for 4 credits, per quarter is charged for individual lessons for all Lower Division students and non-music majors.

For courses in Graduate Applied Music for both Arts College and College of Education majors, see the appropriate sections, M.A., M.F.A., and M.Ed. in the *Graduate School Bulletin*.

Applied Music Entrance Requirements for Major Credit (Applied and applied performance modes)

Piano: A student should be able to play (1) major and minor scales in a moderate tempo; (2) three pieces in different styles, such as (a) Bach invention or dance from one of the suites, (b) one of the less difficult sonatas by Haydn, Mozart, or Beethoven, and (c) one of the shorter pieces by a 19th- or 20th-century composer.

Course Offerings and Major Sequences

Organ: Same as for piano; sight reading of hymns.

Voice: Sing on pitch, with correct phrasing and musical intelligence, standard songs in good English (the simpler classics recommended). Demonstrate ability to read a simple song at sight and have a knowledge of the rudiments of music. A knowledge of piano is also recommended.

Violin: Major and minor scales, arpeggios; the simpler Kreutzer Etudes; a sonata by Handel, Haydn, Mozart, Schubert; a more modern work displaying special technique peculiar to the violin. A knowledge of piano is also recommended.

Other orchestral instruments: A student should be able to play, with good tone, phrasing, and style, two solo numbers of good musical quality. He will be examined in sight reading as well as in the playing of scales. A knowledge of piano is also recommended.

Applied Music Entrance Requirements for Elective Credit—A student who wishes to take applied music as an elective should perform two compositions that reveal his level of performance.

APPLIED MUSIC COURSES: UPPER AND LOWER DIVISION

Instrument	Applied: Elective				Applied		Applied: Performance	
	Non-Cr	Low Div	Up Div	Grad	Low Div	Up Div	Low Div	Up Div
Piano	0-101	1-101	3-101	5-101	1-201	3-201	1-301	3-301
Harpsichord	0-102	1-102	3-102	5-102	1-202	3-202	1-302	3-302
Organ	0-103	1-103	3-103	5-103	1-203	3-203	1-303	3-303
Voice	0-104	1-104	3-104	5-104	1-204	3-204	1-304	3-304
Violin	0-105	1-105	3-105	5-105	1-205	3-205	1-305	3-305
Viola	0-106	1-106	3-106	5-106	1-206	3-206	1-306	3-306
Cello	0-107	1-107	3-107	5-107	1-207	3-207	1-307	3-307
Double Bass	0-108	1-108	3-108	5-108	1-208	3-208	1-308	3-308
Flute	0-109	1-109	3-109	5-109	1-209	3-209	1-309	3-309
Oboe	0-111	1-111	3-111	5-111	1-211	3-211	1-311	3-311
Clarinet	0-112	1-112	3-112	5-112	1-212	3-212	1-312	3-312
Saxophone	0-113	1-113	3-113	5-113	1-213	3-213	1-313	3-313
Bassoon	0-114	1-114	3-114	5-114	1-214	3-214	1-314	3-314
French Horn	0-115	1-115	3-115	5-115	1-215	3-215	1-315	3-315
Trumpet	0-116	1-116	3-116	5-116	1-216	3-216	1-316	3-316
Trombone	0-117	1-117	3-117	5-117	1-217	3-217	1-317	3-317
Baritone	0-118	1-118	3-118	5-118	1-218	3-218	1-318	3-318
Tuba	0-119	1-119	3-119	5-119	1-219	3-219	1-319	3-319
Percussion	0-121	1-121	3-121	5-121	1-221	3-221	1-321	3-321
Harp	0-122	1-122	3-122	5-122	1-222	3-222	1-322	3-322
Guitar	0-123	1-123	3-123	5-123	1-223	3-223	1-323	3-323
Accordion	0-124	1-124	3-124	5-124	1-224	3-224	1-324	3-324

LOWER DIVISION

0-400f,w,s (10). **MUSIC HOUR AND CONCERT REQUIREMENT.** (No cr; for music, music education majors only) Staff

Music hour: Weekly presentations—recitals, lectures, etc. Student and faculty participation. Concert requirement: five department-sponsored concerts. Required of music and music education students.

1-001f,w,s (4). **FUNDAMENTALS OF MUSIC.** (2 cr; for nonmusic major) Lauritzen

Study of basic musical symbols, vocabulary, rhythm, design, scale structures, intervals, chords. The development of basic piano skills; the playing of simple accompaniments.

1-021f,w (1). **INTRODUCTION TO MUSIC.** (5 cr, §3-021) Sutton

Introduction to music in the repertory of our culture, exploring selected forms and styles from the 17th through 20th centuries. Aural analyses, relationships of large units of musical form.

- 1-024f, 1-025w, 1-026s (31, 32, 33). MUSIC LITERATURE.** (3,3,3 cr) Kagan
 Various styles, forms, types of music, including symphony, opera, chamber music, solo pieces. 1-024: Baroque. 1-025: Classical and Romantic periods. 1-026: Romantic and modern.
- 1-151f/1-152w/1-153s (11A-11B-11C). PIANO: CLASS LESSONS.** (2/2/2 cr; prereq 1-001 for nonmusic majors, # for others for 1-151) Busse
 Development of skills at keyboard in harmonization, improvisation, sight reading, accompanying, repertoire, technique. Emphasis on group learning.
- 1-161f/1-162w/1-163s (12A-12B-12C). VOICE: CLASS LESSONS.** (2/2/2 cr) Lundholm
 Introduction to the basic fundamentals of vocal production: posture, respiration, phonation and articulation.
- 1-410f,w,s (46, 47, 48). BAND.** (1 cr per qtr; prereq #) Bencriscutto, Nyline
 Concert Band Ensemble; Symphony Band Ensemble; Symphony Bands I and II; Marching Band. Concert and Symphony Bands perform standard and contemporary repertoire. Marching Band performs at University functions.
- 1-420f,w,s (40, 41, 42) ORCHESTRA.** (1 cr per qtr; prereq # [audition only]) Sieber
 A study of symphonic repertory through performance. Players from all colleges are invited to participate. Performance schedules include major choral works with the Univ. chorus, guest and student soloists.
- 1-430f,w,s (43, 39, 49, 43R, 43S). CHORUS; WOMEN'S CHORUS; MEN'S GLEE CLUB; RESIDENT ORATORIO CHOIR; ST. PAUL CAMPUS CHORUS.** (1 cr per qtr except 1 cr for 3 qtr participation in Resident Oratorio Choir; prereq #) Lancaster, Schwartz, Steen
- Sec. 1,2,3—University Chorus
 Performance of major symphonic works with Minnesota Orchestra, University Symphony Orchestra, and University Concert Band.
- Sec. 3—Concert Choirs
 A select ensemble auditioned from eligible members of the University Chorus.
- Sec. 4—Women's Chorus
 Rehearsals and performances cover standard women's chorus material. Group appears for on- and off-campus functions.
- Sec. 5—Men's Glee Club
 Rehearsals and performances cover standard men's glee club material as well as special arrangements. Group appears for on- and off-campus functions.
- Sec. 6—Resident Oratorio Choir
 Mixed chorus open to all residents of University campus. Performances each quarter of standard choral literature.
- Sec. 7—St. Paul Campus Chorus
 Prepares for at least one public appearance each quarter as well as for special events connected with St. Paul Campus.
- 1-440f,w,s (44A, 44B, 44C). ENSEMBLE.** (2 cr per qtr; prereq #) Byrne, Staff
 Performance of chamber music of major and minor composers; sonatas, trios, quartets, quintets, etc. Includes various combinations of vocal and instrumental chamber ensemble materials.
- 1-501f/1-502w/1-503s (1T-2T-3T). MATERIALS AND STRUCTURE OF MUSIC I.** (2/2/2 cr; primarily for music majors) Argento, Johnson
 Study of tonality, melody, rudiments of counterpoint, texture, harmony and organization of musical structures.
- 1-504f/1-505w/1-506s (4T-5T-6T). MATERIALS AND STRUCTURE OF MUSIC II.** (2/2/2 cr; prereq 1-503) Argento, McHugh
 Melodic, harmonic and rhythmic concepts; contemporary materials and procedures; larger musical structures.
- 1-511f/1-512w/1-513s (7A-7B-7C). EAR-TRAINING AND SIGHT-SINGING I.** (2/2/2 cr; primarily for music majors) Argento
 Melodic, harmonic and rhythmic dictation; sight-singing; clefreading; musicianship drills.
- 1-514f/1-515w/1-516s (8A-8B-8C). EAR-TRAINING AND SIGHT-SINGING II.** (1/1/1 cr; prereq 1-513) Argento
 Further development of aural skills presented in Ear-Training and Sight-Singing I.
- 1-521f/1-522w/1-523s (9A-9B-9C). KEYBOARD TRAINING.** (2/2/2 cr; primarily for piano and organ majors; prereq 1-503 and 1-513) Argento
 Practical study of keyboard harmony; realization of figured basses; score reading; transposition, improvisation.

Course Offerings and Major Sequences

1-601f/1-602w/1-603s (34, 35, 36). **HISTORY OF MUSIC.** (3/3/3 cr; prereq 1-503) Laudon
Musical styles and forms, 9th through 19th centuries; emphasis on their identification through listening practice. 1-601: Baroque Era. 1-602: Classical-Romantic Era. 1-603: Romanesque, Gothic and Renaissance Eras.

UPPER DIVISION

Courses for Non-Music Majors

3-021w,s (50). **INTRODUCTION TO MUSIC.** (5 cr, §1-021; open to jr and sr nonmusic students) Sutton
Similar to Mus 1-021 in organization and basic content but more extensive.

3-027f, 3-028w, 3-029s (51, 52, 53). **HISTORY OF MUSICAL STYLES.** (4,4,4 cr; prereq 1-021 or 3-021) Cardamone

Principal stylistic developments in history of western music, 9th century to present day. 3-027: Middle Ages, Renaissance, Baroque. 3-028: Classical Period, Early Romanticism, Nationalism. 3-029: 1850 to present.

Performance Practice

5-182f (133). **BAROQUE PERFORMANCE PRACTICE.** (3 cr; prereq sr or grad, 1-506, 1-603, or §) Laudon

Ornamentation, phrasing, articulation, and improvisation in music of period 1550-1759. Music instruction books of this era leading to analysis and performance of Baroque music in Baroque style.

Pedagogy and Conducting

3-350su (83). **PIANO TEACHERS SUMMER WORKSHOP.** (4-6 cr; prereq 2 yrs piano, 2 yrs theory)

Discusses place of music in liberal education of individual, with implications drawn for setting and approach for piano instruction in private studio.

3-361f/3-362w/3-363s (87J-87K-87L). **VIOLIN PEDAGOGY I.** (2/2/2 cr; prereq 12 cr in Mus 1-205 or 1-206 or 1-305 or 1-306 or §)

Teaching of private violin students at beginning, intermediate, and advanced levels. Discussion and demonstrations of pedagogical techniques.

5-351f/5-352w/5-353s (170-171-172). **PIANO PEDAGOGY I.** (2/2/2 cr; prereq 12 cr in Mus 1-101 or 1-201 or 1-301 or 1-151/1-152/1-153 (11A-B-C) or §; offered 1970-71 and alt yrs) Guhl

Demonstration and discussion of group piano instruction at the elementary level. Study of literature appropriate to conceptual learning through the discovery approach.

5-354f/5-355w/5-356s (180-181-182). **PIANO PEDAGOGY II.** (2/2/2 cr; prereq 12 cr in Mus 1-101 or 1-201 or 1-301 or 1-151/1-152/1-153 or §; offered 1971-72 and alt yrs) Guhl

Principles of piano pedagogy in private studio, one-to-one teacher-pupil relationship. Survey of teaching materials and opportunity to apply principles and techniques in a directed teaching setting.

5-357f, 5-358w, 5-359s (194, 195, 196). **GRADUATE PIANO SEMINAR.** (2,2,2 cr; prereq §; offered 1971-72 and alt yrs) Weiser, Freed, McNab

Recognition and discussion of problems in piano study, instruction and performance. Terminology, repertory, evolution of piano construction, performance practice from baroque to contemporary literature.

5-381f, 5-382w, 5-383s (163A, 163B, 163C). **SEMINAR: CHORAL TECHNIQUES, REHEARSAL AND PERFORMANCE PRACTICE.** (2,2,2 cr; prereq §; offered alt yrs) Schwartz, Lancaster

The study of score analysis, conducting technique, performance practice, and various aspects of choral technique with emphasis on the practical application of these studies in rehearsal and performance.

5-384f/5-385w (183A-183B). **CHORAL CONDUCTING.** (3/3 cr; prereq §; offered 1971-72 and alt yrs) Schwartz

Advanced study of the art of choral conducting—the study of hand techniques, sound control, articulation, breath control, intonation, etc.

5-387/5-388 (173A-173B). **INSTRUMENTAL CONDUCTING.** (3/3 cr; prereq §; offered 1970-71 and alt yrs) Staff

Advanced study of the art of instrumental conducting—conducting techniques, score analysis, performance practice.

- 5-399f,w,s (189). **PERFORMANCE IN CONDUCTING.** (3 cr; prereq Mus 5-388 or 5-385 and #) Staff
Preparation and conducting, with documentation, of an ensemble program.

Ensembles and Miscellany

- 3-401Hf,w,s, 3-402Hf,w,s (88H, 89H). **INTERDISCIPLINARY HONORS SEMINAR: MUSIC, STUDIO ARTS THEATRE.** (2-4 cr, §ArtS 3-401, §Th 3-401, §ArtS 3-402, Th 3-402; prereq jr, sr honors cand, #) Argento
- 3-440f,w,s (90, 91, 92). **ENSEMBLE.** (2 cr per qtr; prereq #) Byrne, Staff
Performance of chamber music of major and minor composers; sonatas, trios, quartets, quintets, etc. Includes various combinations of vocal and instrumental chamber ensemble materials.
- 3-490f,w,s (57-58-59). **CHAMBER SINGERS.** (2 cr per qtr; prereq #) Lancaster
Mixed chorus of sixteen to twenty voices. Performances each quarter of works for small chorus.
- 5-440f,w,s (102A, 102B, 102C). **ENSEMBLE.** (2 cr per qtr; prereq #) Byrne, Staff
Performance of chamber music of major and minor composers; sonatas, trios, quartets, quintets, etc. Includes various combinations of vocal and instrumental chamber ensemble materials.
- 5-450f,w,s (185, 186, 187). **COLLEGIUM MUSICUM.** (1 cr per qtr, prereq #) Lancaster
Small ensemble of singers and instrumentalists for the study and performance of early music.
- 5-460f,w,s (103J, 103K, 103L). **CONTEMPORARY MUSIC ENSEMBLE.** (3 cr per qtr; prereq #) Argento
Practice and performance of new and recent music for various combinations of vocal and instrumental ensembles.
- 5-470f,w,s (147, 148, 149). **OPERA WORKSHOP.** (3 cr per qtr; prereq ability to sing arias satisfactorily, #) Sutton
The student prepares and performs operatic arias and scenes, exploring the combined problems of musical and dramatic interpretation. In addition the class prepares a fully staged production.
- 5-480su (167-168-169). **OPERA AND OPERETTA PRODUCTION.** (3 cr; prereq singers with #) Sutton
The singer prepares and performs roles in opera and operetta. Special projects, including stage direction, musical direction, and accompanying coaching, are offered for the non-singer.

Music Theory and Composition

- 3-531f,w,s (84). **ANALYSIS I.** (3 cr; prereq 1-506) Argento
Study of various procedures and techniques of analysis applied to tonal and pre-tonal music.
- 3-541f/3-542w/3-543s (97-98-99). **COUNTERPOINT.** (2/2/2 cr; prereq 1-506) Fetler
Strict 16th century and Bach-style counterpoint in two and three parts; writing of canons, motets, inventions, and fugues. This is a creative course.
- 3-571f,w,s (81). **MUSIC CALLIGRAPHY.** (2 cr; prereq mus or mus ed major) Snesrud
Techniques and forms of notation; manuscript preparation and layout; duplication methods; and general copyright procedures.
- 3-584f, 3-585w, 3-586s (84J, 84K, 84L). **MUSIC: ITS MEANING AND STRUCTURE.** (3,3,3 cr; prereq none) Fetler
Discussion, examination of selected works. Various periods, including recent developments. Purpose, meaning, continuity. direction in music. Relationship of spontaneity and theoretical principles
- 5-501f, 5-502w, 5-503s (121, 122, 123). **ADVANCED MATERIALS AND STRUCTURE OF MUSIC.** (2,2,2 cr; prereq 1-506) Argento, Johnson
Stylistic study of musical materials and structures. 5-501: before 1850. 5-502: 1850-1950. 5-503: since 1950; electronic, aleatoric, mathematical procedures. New attitudes and notational practices.
- 5-511 (174). **ADVANCED EAR TRAINING I.** (3 cr; prereq 1-516 or #) Fetler
Dictation of melodic, harmonic and rhythmic materials in a variety of styles. Introduction to contemporary sonorities.
- 5-512 (175). **ADVANCED EAR TRAINING II.** (3 cr; prereq 1-516 or #) Fetler

Course Offerings and Major Sequences

Dictation of melodic, harmonic, rhythmic and contrapuntal materials. Emphasis on 20th-century tone combinations, meters, and rhythms. Tonal, polytonal and atonal exercises. Training in tonal memory.

- 5-521f, 5-522w, 5-523s (137, 138, 139). KEYBOARD HARMONY.** (2,2,2 cr; primarily for piano and organ majors; prereq 1-506, sr or grad) Oberg
A practical study of diatonic and chromatic harmony at the piano. Realization of figured bass music of the 17th and 18th centuries. Playing of choral, orchestral, and chamber music of classical and early romantic periods from open score using all clefs.
- 5-532w (111). ANALYSIS II.** (3 cr; prereq 3-531) Argento
Study of various procedures and techniques of analysis applied to music composed since 1950 ca.
- 5-533s (177). ANALYSIS III.** (3 cr; prereq 3-531) Argento
Analysis of representative masterworks of the twentieth century.
- 5-541f/5-542w/5-543s (197-198-199). ADVANCED COUNTERPOINT.** (2/2/2 cr; prereq 3-543; offered 1970-71 and alt yrs) Fetler
Practice in technique of writing three- and four-voice fugues; contrapuntal devices and problems; analysis of polyphonic works of various periods from Ars Nova to the present day.
- 5-551f, 5-552w, 5-553s (127, 128, 129). COMPOSITION I.** (2,2,2 cr; prereq 1-506) Fetler, Argento, Stokes
Original work in various forms. The student is exposed to a variety of techniques and styles of composition after which he is encouraged to develop his own original approach.
- 5-554f, 5-555w, 5-556s. COMPOSITION II.** (2,2,2 cr; prereq 3-543, 5-553) Fetler, Argento, Stokes
Original works in various forms.
- 5-557 (160). CHORAL COMPOSITION AND ARRANGING.** (3 cr; prereq 1-506, 3-543, or #) Fetler
Composition and arranging for choral ensembles.
- 5-561f/5-562w/5-563s (141-142-143). ORCHESTRATION.** (2/2/2 cr; prereq 1-506) Argento
Scoring instruments of the orchestra for ensemble combinations and full orchestra.
- 5-564/5-565 (161-162). BAND ARRANGING.** (3/3 cr; prereq 1-506, 5-563 or MuEd 3-557 or #; offered 1971-72 and alt yrs)
Analysis of current scoring techniques for wind and percussion instruments. Scoring for band. Creative arrangements for marching or concert band.

History and Literature

- 3-604 (85). HISTORY OF 20th-CENTURY MUSIC.** (3 cr; prereq 1-603) Stokes
Attitudes and accomplishments in twentieth century music.
- 3-607w (86A). INTRODUCTION TO MUSICAL RESEARCH.** (3 cr; prereq 1-603 or #) Laudon
Basic methods and materials to assist practicing musician and teacher in locating repertory, authentic editions, biographical material, rare texts, etc.
- 3-807f, 3-808w, 3-809s (93, 94, 95). MUSIC IN ASIAN AND PACIFIC CULTURES.** (3,3,3 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, South-east Asia, island cultures.
- 3-970 (82). INDEPENDENT STUDY.** (1-15 cr; prereq # and Δ) Staff
Independent research and study under faculty guidance. Subjects selected according to strengths and interests of individual students.
- 3-970H (96H). HONORS COURSE: INDEPENDENT STUDY.** (1-15 cr; prereq # and Δ , 3.0 GPA) Staff
For departmental honors students; culminating in a senior thesis in music history and literature or music theory, or normal piano, or an original composition, or a special outstanding recital.
- 3-980f,w,s (80D). DIRECTED TEACHING.** (1-3 cr per qtr; prereq #, Δ) Staff
- 3-990s (86B). INDIVIDUAL RESEARCH PROJECT.** (3 cr; prereq 1-603 or #) Laudon and staff
Research centered on particular student's field of interest and specialization. Preparation of papers, reports, program notes using student's knowledge of theory, history, and research methods.

- 5-601f/5-602w/5-603s (124-125-126). HISTORY OF OPERA.** (3/3/3 cr; prereq 9 cr in history of music or history of art or history of theatre or European history from 1600 or #) Argento
Origins of opera; its development as a musico-dramatic form through analysis of libretto and music of representative masterpieces of the late Renaissance, Baroque, Classic, Romantic and Contemporary periods.
- 5-604f, 5-605w, 5-606s (134, 135, 136). HISTORY OF CHURCH MUSIC.** (3,3,3 cr; prereq 1-603 or #; offered 1970-71 and alt yrs) Riedel
Trends, relationship of music to various theologies and liturgies.
- 5-607f, 5-608w, 5-609s (191, 192, 193). LEITURGIA.** (3,3,3 cr; prereq 1-601/1-602/1-603 or #; offered alt yrs) Riedel, Fleischer
Survey and discussion of liturgies and music from Gregorian chant to 20th century.
- 5-611 (190). HYMNOLOGY.** (3 cr; prereq 6 cr in 1-601/1-602/1-603 or ArtS 3-104, 3-105, 3-106 or Phil 3-001, 3-002, 3-003 or Engl 3-966, 3-967 or #) 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. History of hymn settings.
- 5-631f/5-632w/5-633s (154-155-156). MUSIC IN MIDDLE AGES AND RENAISSANCE.** (3/3/3 cr; prereq 1-603) Cardamone
Monophonic music from Gregorian chant to English madrigal school
- 5-634f/5-635w/5-636s (164-165-166). MUSIC IN BAROQUE ERA.** (3/3/3 cr; prereq 1-603; offered 1970-71 and alt yrs) Laudon
Development of vocal, instrumental, and sacred styles of the Baroque Era.
- 5-637f/5-638w/5-639s (144-145-146). MUSIC IN THE GALANT AND CLASSIC PERIODS.** (3/3/3 cr; prereq 1-603; offered 1971-72 and alt yrs) Laudon
The transition from late Baroque to Galant and Classical styles
- 5-641 (130A). MUSIC IN ROMANTIC ERA.** (3 cr; prereq 1-603 or #; offered 1971-72) Cardamone
Romanticism as a complex of individual styles having elements in common, developed by composers who had to resolve certain basic conflicts between their artistic heritage and their environment. 1800-1848.
- 5-642 (131A). MUSIC IN THE ROMANTIC ERA.** (3 cr; prereq 1-603 or #; offered 1971-72) Cardamone
Romanticism as a complex of individual styles having elements in common, developed by composers who had to resolve certain basic conflicts between their artistic heritage and their environment. 1848-1885.
- 5-643 (132A). MUSIC IN THE ROMANTIC ERA.** (3 cr; prereq 1-603 or #; offered 1971-72) Cardamone
A study of vocal and instrumental music from 1885-1925, including opera, symphony, songs and chamber music. The transition from 19th century Romanticism to the 20th century. The dissolution of tonal harmony.
- 5-661 (107). GEORG FRIEDRICH HANDEL: LIFE AND WORKS.** (3 cr; prereq 1-603 or #) Riedel
Musical culture in middle and northern Germany during 17th and 18th centuries. Oratorio in Italy, France, Germany, and England. G. F. Handel's work with emphasis on his oratorios. Handel and England.
- 5-662 (108). HEINRICH SCHUTZ: LIFE AND WORKS.** (3 cr; prereq 6 cr in music history or history of art 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 Schutz. Madrigals, monodies, sacred concerti and cantatas, passions.
- 5-663 (109). LASSO AND PALESTRINA.** (3 cr; prereq 6 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.
- 5-664 (178). CHARLES IVES: LIFE AND WORKS.** (3cr) Riedel
Detailed study of Ives' compositions. Ives and American Transcendentalism. Ives and the Progressive Party. Ives as a nineteenth and twentieth century composer.
- 5-665 (188B). RABINDRANATH TAGORE: MUSIC AND POETRY.** (3 cr) Kagan
Life, philosophy, works. Influences: Europe, India's classical and folk traditions. His

Course Offerings and Major Sequences

poetic forms and themes. Influence upon Bengali literature. Songs, operas, with bilingual texts.

- 5-701f, 5-702w, 5-703s (104, 105, 106). AMERICAN MUSIC.** (3,3,3 cr; prereq 1-603 or 9 cr in American history or American studies or #) Riedel
From colonial times to present. American Indian music; folk music; sacred music in America, Puritan New England to the present time; jazz; music education; the symphony orchestra; contemporary music.
- 5-704f, 5-705w, 5-706s (176A, 176B, 176C). LATIN-AMERICAN MUSIC.** (3,3,3 cr; offered 1971-72 and alt yrs) Riedel
Pre-Maya and pre-Inca times through colonial period to present. Music of Indians in Brazil, Inca countries. Afro-, Ibero-Latin American music. Folk, popular, contemporary music.
- 5-707 (176D). SCANDINAVIAN MUSIC.** (3 cr; prereq major in music or Scandinavian or humanities or #) Cartford
A survey of the music of the Scandinavian countries, Norway, Sweden, Finland, Denmark, Iceland; historical backgrounds, folk music, church music, and the music of today.
- 5-741f, 5-742w, 5-743s (115, 116, 117). VOCAL LITERATURE.** (3,3,3 cr; prereq 12 cr in 1-104 or 1-204 or 1-304 or #; offered 1971-72 and alt yrs) Schuessler, Sutton
Literature and pedagogy: Performance of representative songs from major and minor composers. Study of significant vocal techniques from major schools of singing as they relate to song performance.
- 5-744f, 5-745w, 5-746s (118, 119, 120). PIANO LITERATURE.** (2,2,2 cr; prereq 12 cr in 1-101 or 1-201 or 1-301 or #; offered 1970-71) Weiser, Freed, McNab
The history of keyboard literature suitable for piano performances from end of 16th century to present; its background and development. Performance illustrations by instructor, recordings.
- 5-747 (150). ORGAN LITERATURE.** (2 cr; prereq grad organ and musicology students, sr with #) Fleischer
Development of organ literature and playing from 14th century to the present. Mutual influence of organ construction and composition emphasized, as well as various national schools of organ playing.
- 5-751f, 5-752w, 5-753s (157, 158, 159). GERMAN LIEDER.** (2,2,2 cr; prereq 18 cr in 1-204 or 3-204, Ger 1-002, or #; offered 1970-71)
Selected songs as regards interpretation and style. 5-751: Schubert, Mozart, Beethoven. 5-752: Schumann, Brahms, Franz, Wolf, Strauss. 5-753: Mahler, Hindemith, Berg, Schoenberg, Henze, Schoeck.
- 5-754s (184). CHORAL LITERATURE: SMALL FORMS.** (3 cr; prereq #; offered 1970-71 and alt yrs) Schwartz
Survey of selected sacred music and secular choral music (small forms, i.e., motets, anthems, madrigals, etc.).
- 5-755w (140). CHORAL LITERATURE: LARGE FORMS.** (3 cr; prereq sr or grad, 1-506 or #; offered 1970-71 and alt yrs) Schwartz
Study of selected sacred and secular choral compositions (large forms; i.e., mass, oratorio, magnificat, Stabat Mater, Cantata) from 16th century to the present.
- 5-757f (130). SYMPHONIES OF THE CLASSICAL ERA.** (3 cr; prereq 6 cr in music history or art history or political history since 1750 or English or German literature since 1750, or #) Oberg
Through Haydn and Mozart; evolution of form and style in relation to contemporary thought and art through French Revolution.
- 5-758w (131). SYMPHONIES OF BEETHOVEN.** (3 cr; prereq 6 cr in music history or art history or political history since 1750 or English or German literature since 1750, or #) Oberg
Evolution of Beethoven's symphonic form and style as reflection of intellectual, political, and artistic currents of the Napoleonic era.
- 5-759s (132). SYMPHONIES OF ROMANTIC ERA.** (3 cr; prereq 6 cr in music history or art history or political history since 1750 or English or German literature since 1750, or #) Oberg
Schubert, Schumann, Mendelssohn, Berlioz, Liszt, Brahms, Franck, Dvorak, Tchaikovsky, Bruckner, Richard Strauss; their relation to dominant romantic trends of 19th century.
- 5-810 (103A, 103B). ASIAN MUSIC IN PERFORMANCE.** (3 cr; prereq #) Kagan, staff

Development of vocal and/or instrumental skills through applied training and lecture-demonstrations.

- 5-811 (188A). **RAGA AND TALA: FOUNDATIONS OF INDIAN ART MUSIC.** (3 cr) Kagan
The history and analysis of music theory in north and south India, notational systems, tonal and rhythmic materials and classifications, musical forms and performance practice.
- 5-812 (188C). **TRADITIONAL INDIAN MUSIC: THE SACRED AND THE PROFANE.** (3 cr) Kagan
Vedic chant of Hinduism, Indian dance-drama and folk music. Analysis of the music and its associations with belief systems, social institutions, history and aesthetic expression.
- 5-841f (110). **MUSIC BIBLIOGRAPHY.** (3 cr; prereq 1-603 or §) Riedel
Survey and examination of music bibliographies, reference materials and monuments of music.
- 5-844f, 5-845w, 5-846s (151, 152, 153). **INTRODUCTION TO MUSICOLOGY.** (3,3,3 cr; prereq 5-841 or §; offered 1971-72 and alt yrs) Riedel
Scope, aims, methods, and resources of research in musicology including fields of acoustics, psychology, sociology, and theory.
- 5-861s (153A). **INTRODUCTION TO ETHNOMUSICOLOGY.** (3 cr; prereq §; offered 1971-72 and alt yrs) Kagan
Scope, aims, methods, and resources of research in ethnomusicology; including fields of acoustics, sociology, anthropology, folklore.
- 5-862w (111K). **TECHNIQUES FOR ETHNOMUSICOLOGICAL ANALYSIS.** (3 cr; prereq 1-513 or 5-861 or §; offered 1971-72 and alt yrs) Kagan
Dictation, descriptive transcription of preliterate, folk and high-art music of the world. Analysis of style, form, usage and function. Approaches to typology of musical examples, comparative study of societies.
- 5-863f (179). **MUSICAL INSTRUMENTS OF THE WORLD.** (3 cr; offered 1971-72 and alt yrs) Kagan
Organology; classification comparative study of musical instruments in all cultures; history, distribution, structure, technology, acoustics. Instruments in literature, myths, iconography.

MUSIC EDUCATION (MuEd)

(College of Education)

The following course in music education is regularly open to Arts College students:

UPPER DIVISION COURSES

- 3-557 (65). **INSTRUMENTATION.** (3 cr; prereq Mus 1-506)
Theoretical study of orchestral and band instruments, in combination; revision of materials suitable for school use, capacity and capability of school performance on various instruments.

NATURAL SCIENCE (NSci)

Two general education courses in natural science are listed below, each serving a distinctive purpose. NSci 1-001/1-002†,1-003 is intended for students desiring an introduction to the total field of science, 1-004/1-005† for those desiring an acquaintance with the physical universe. (Biol 1-001/1-002† is offered by the College of Biological Sciences for those wishing to explore the world of life.)

Students taking NSci 1-001/1-002†,1-003 may not receive credit for NSci 1-004/1-005†. Students who have taken the elementary course of any science department may not register for the corresponding portion of these courses.

LOWER DIVISION COURSES

- 1-001f/1-002w† (1-2). **ORIENTATION IN NATURAL SCIENCES.** (5-5† cr, §equiv courses in

Course Offerings and Major Sequences

science departments; prereq 1 yr high school algebra or #; 5 hrs lect and 1 hr lab per wk) Graubard

Integrated survey course: student introduced to basic principles and subject matter of science and meaning of scientific method in physical and biological sciences. 1-001: Astronomy and physics. 1-002: Chemistry and geology.

1-003 (3). ORIENTATION IN NATURAL SCIENCES. (5 cr; prereq 1-002 or college physics and chemistry, or #) Graubard

5-171f, 5-172w, 5-173s (171, 172, 173). DEVELOPMENT OF SCIENCES. (3,3,3 cr; prereq 1 Foundations of modern biology with stress on function, development, heredity, and evolution.

1-004f,w/1-005w,s† (4-5). PHYSICAL WORLD. (4-4† cr, §equiv courses in science departments; prereq 1 yr high school algebra)

Essential elements of astronomy, physics, chemistry, and geology, selected to illustrate methods of science and to acquaint student with physical universe around him.

1-006s (6). PHYSICAL WORLD. (4 cr; prereq 1-005 or #)

Essential elements of geology. Laboratory-oriented course covering earth science topics selected to illustrate methods of science and to acquaint student with the earth as a physical and chemical system. Field trips.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

5-171f, 5-172w, 5-173s (171,172,173). DEVELOPMENT OF SCIENCES. (3,3,3 cr; prereq 1 yr biology and 1 yr physical science in high school or college or #) Graubard

Provides first-hand acquaintance with manner in which man forged science, as we know it today, through study of his past approaches, errors, and achievements. Stress laid on original works (in English translation) rather than summaries; on roles of culture, values, techniques, goals, and social and emotional intrusions.

NAVAL SCIENCE (Nav)

Naval Science is an academic program designed to give those students enrolled in the Naval Reserve Officers' Training Corps (NROTC), the necessary background in naval subjects in order that upon graduation they may qualify for a commission in the Navy, Naval Reserve, Marine Corps, or Marine Corps Reserve.

There are two programs under the NROTC: The Scholarship program and the Contract program. The Scholarship program offers tuition, fees, and books plus a \$50 a month subsistence allowance during the four years of undergraduate study to those who can qualify. You may qualify for the scholarship while in your senior year of high school or while in college provided you are accepted in Naval ROTC at the beginning of your freshman year. The Contract program offers the Naval Science textbooks plus a \$50 a month subsistence allowance during the last two years of the qualifying students undergraduate work.

For further information concerning the requirement and the opportunities in the NROTC program, see the *Army, Navy, Air Force ROTC Bulletin* or call at the Naval Science office, 203 Armory.

The Arts College will accept credits from junior and senior Upper Division courses in Naval Science to fulfill a minor toward the B.A. degree, or for credits outside the major and minor.

LOWER DIVISION COURSES

(All NROTC Students)

1st Year

1-103f (11). NAVAL ORIENTATION. (3 cr)

Naval customs. Organization for national security. Naval leadership. Forms of modern naval warfare.

- 1-104w/1-105s (12-13). **SEA POWER.** (3-3 cr; prereq 1-104 or #)
Survey of sea power's influence on history from ancient times to present.

2nd Year

- 0-200f (24). **SEMINAR: SEA POWER AND MARITIME AFFAIRS.** (No cr)
Conducted in laboratory sessions approximately 1 hour per week.
- 0-201w (25). **SEMINAR: SEA POWER AND MARITIME AFFAIRS.** (No cr)
Conducted in laboratory sessions approximately 2 hours per week.
- 0-202s (26). **LEADERSHIP LAB.** (No cr)

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Line Sequence—3rd Year

- 3-303f (57). **NAVAL OPERATIONS: INTRODUCTION TO NAVIGATION.** (3 cr)
Piloting and dead reckoning. Rules of the nautical road.
- 3-304w (58). **CELESTIAL NAVIGATION.** (3 cr; prereq trigonometry or #)
Theory and practical application of navigating using the stars, moon, and planets. Relative motion and naval maneuvering.
- 3-305s (59). **NAVAL OPERATIONS.** (3 cr; prereq #)
Electronic navigation and operations analysis. Loran, radio, and modern navigation systems. A scientific approach to decision making.

Line Sequence—4th Year

- 3-410 (61). **NAVAL ENGINEERING.** (3 cr; prereq high school trigonometry and algebra or Math 0-009 and Math 1-008 or #)
- 3-411w (62). **NAVAL ENGINEERING AND NAVAL MANAGEMENT.** (3 cr; prereq 3-410 or #)
- 3-412s (63). **PRINCIPLES OF NAVAL LEADERSHIP.** (3 cr; prereq 3-411 or #)
Management psychology. individual differences, group dynamics, and art of manipulating these to produce a desired good.

Marine Corps Sequence—3rd Year

- 3-350 (54). **EVOLUTION OF ART OF WAR I.** (3 cr)
Evolution of warfare from earliest recorded times to and including Mexican War.
- 3-351 (55). **EVOLUTION OF ART OF WAR II.** (3 cr)
Civil War campaigns, World Wars I and II, plus consideration of U.S. military and foreign policy.

Marine Corps Sequence—4th Year

- 3-450 (64). **AMPHIBIOUS WARFARE I.** (3 cr)
Evolution of current amphibious warfare techniques and doctrine from Gallipoli to Korean War.
- 3-451 (65). **AMPHIBIOUS WARFARE II.** (3 cr)
Introduction to doctrinal techniques and present concepts to include planning, embarkation, rehearsal, support, and logistics.

NORTHWEST EUROPEAN LANGUAGE AND AREA STUDIES

The following departments offer courses in the program of the Center for Northwest European Language and Area Studies: Art History, German, History, Philosophy, Political Science, Scandinavian.

See under respective departments for courses.

NORWEGIAN

See Scandinavian

ORIENTAL

See East Asian Languages

PERSIAN

See Middle Eastern Languages

PERSONAL ORIENTATION (PO)

The successful person cannot be content with a knowledge of only such fields as humanities and natural and social science. He must also know himself—his abilities, interests, habits, and their relation to educational and vocational requirements. The following courses seek to provide such understanding and to promote personal competence.

LOWER DIVISION COURSES

1-001 (1). HOW TO STUDY. (2 cr; does not count toward B.A. degree)

Practical assistance to student in developing efficient methods of study and concentration, organizing material, preparing for examinations, and improving reading ability. Attention to orientation of students in attitudes and motivation, and relation of these to satisfactory performance.

1-011 (11). CHOOSING A VOCATION. (2 cr; does not count toward B.A. degree)

Application of principles of occupational psychology to help students achieve self understanding as basis for vocational-educational planning. Consideration of occupational classification, description, and trends. Active student participation in individual projects and in small group discussions of vocational choices of members.

PHILOLOGY

See Classics

PHILOSOPHY (Phil)

● Major Sequence in Arts College—

Required Background Courses:

Phil 1-001 and 1-002. Phil 1A and 2A ordinarily will not be accepted for this requirement

Requirements:

At least 10 cr in history of philosophy area, one of which shall be 3-003 and other philosophy courses to make a total of at least 30 cr in Upper Division philosophy courses including at least 12 credits in courses numbered with new number prefixes of 5 (Upper Division, graduate levels).

Phil 1-001, 1-002, 1-003, and 1-004 are introductory. They may be taken singly or in any order. The sections of 1-001, 1-002, and 1-003 are scheduled so that one may be taken at almost any hour and so that, if another of the courses is elected, it may usually be taken at the same hour in the following quarter.

Students intending to enter theological seminaries or other institutions of training in religious work should note the special pretheological curriculum. (see page 235).

● **Honors Opportunities and Graduation with Honors**—Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division office (115 Johnston) or the department office.

LOWER DIVISION COURSES

- 1-001f,w,s (2). **LOGIC.** (5 cr; open to fr)
 Formal techniques for evaluating arguments.
- 1-002f,w,s (1). **PROBLEMS OF PHILOSOPHY.** (5 cr; open to 3rd-qtr fr)
 Introduction to permanent problems; principal methods and schools of philosophy; historical and contemporary views.
- 1-003f,w,s (3). **ETHICS.** (5 cr; open to 3rd-qtr fr)
 Examination of problems that arise when human beings attempt to think systematically about conduct and values.
- 1-004 (4). **POLITICAL PHILOSOPHY.** (5 cr) Sartorius
 Under what conditions, if any, ought one to obey the law?
- 1-011 (10). **SCIENCE AND RELIGION.** (2 cr; prereq soph)
 Inquiry into nature of science and religion as currently interpreted; attempt to find grounds of conflict and/or reconciliation.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-001f,3-002w,3-003s,3-004f (50,51,52,53). **GENERAL HISTORY OF WESTERN PHILOSOPHY.** (4,4,4,4 cr)
 Survey of major developments in Western philosophic thought from its beginnings among Greeks to end of 19th century. 3-001: Greek philosophy, pre-Socratics, Socrates, Plato, Aristotle. 3-002: Stoicism, Epicureanism, and medieval Christian synthesis. 3-003: Modern philosophy from Descartes through Hume. 3-004: Later modern philosophy from Kant through 19th century.
- 3-001H,3-002H,3-003H,3-004H (50H,51H,52H,53H). **HONORS COURSE: GENERAL HISTORY OF WESTERN PHILOSOPHY.** (4,4,4,4 cr; prereq #)
 Basic content same as Phil 1-001, 1-002, 1-003, 1-004. Students enrolled attend an honors recitation section and have special assignments.
- 3-415 (60). **PHILOSOPHY OF LAW.** (3 cr; prereq 1-002 or 1-004 or #) Sartorius
 Examination of a variety of analytical accounts of law and legal obligation.
- 3-601 (70). **LOGIC OF SCIENTIFIC REASONING.** (3 cr; prereq 1-001) Maxwell, Hanson
 Introduction to principles of scientific method, including survey of various contemporary approaches to scientific inference.
- 3-900H (90H, 91H, 92H). **HONORS COURSE: UNDERGRADUATE SEMINAR.** (3,3,3 cr; prereq honors regis and 6 cr in Upper Division philosophy courses)
 Topics of contemporary interest taken up in weekly meetings under direction of different faculty member each quarter.
- 3-970 (80). **DIRECTED STUDIES.** (1-5 cr; prereq #) Staff
- 3-990 (93H,94H). **HONORS COURSE: THESIS.** (3,3 cr; prereq sr, honors regis in philosophy. GPA of 3.50 or better in previous work)
 Individual assignments carried out under direction of faculty member.

UPPER DIVISION COURSES

- 5-003 (106). **AMERICAN PHILOSOPHY FROM WILLIAM JAMES.** (3 cr; prereq Phil 1-002 or 1 qtr history of philosophy or #) Potter
 Among philosophers discussed: Peirce, James, Dewey, Lewis.
- 5-005 (112). **PLATO.** (3 cr; prereq 3-001 or #) Hopkins
 Philosophy of Plato based on analysis of major dialogues.
- 5-008 (114). **ARISTOTLE.** (3 cr; prereq 1 qtr history of philosophy or #)
 Philosophy of Aristotle based on analysis of selected passages from his works; attention given to his relationship to Plato.
- 5-012 (116). **PLATO AND ARISTOTLE.** (3 cr; prereq 3-001 or #; offered when feasible)
 Comparative presentation of their metaphysical and epistemological views; special reference to problem of universals.
- 5-021 (118). **MEDIEVAL PHILOSOPHY.** (3 cr; prereq 3-001, 3-002 or #) Hopkins
 Selected topics in writings of several medieval philosophers (e.g., Augustine, Anselm, Aquinas, Scotus, and Ockham).

Course Offerings and Major Sequences

- 5-033 (120). RATIONALISM.** (3 cr; prereq 3-003 or #; offered when feasible)
Philosophies of Descartes, Spinoza, and Leibniz.
- 5-034 (121). DESCARTES.** (3 cr; prereq 3-003 or #) Lewis
Analysis of philosophical works.
- 5-035 (122). SPINOZA.** (3 cr; prereq 3-003 or #; offered when feasible)
Philosophy of Spinoza based primarily on analysis of his Ethics.
- 5-036 (123). LEIBNIZ.** (3 cr; prereq 3-003 or #; offered when feasible) Lewis, Arnaud
Philosophy of Leibniz based on analysis of selected philosophical writings.
- 5-041 (129). LOCKE.** (3 cr; prereq 3-003 or #) Lewis, Terrell
Detailed study of the Essay Concerning Human Understanding.
- 5-042 (130). BERKELEY.** (3 cr; prereq 3-003 or #) Lewis, Terrell
Detailed study of Berkeley's philosophical works.
- 5-043 (131). HUME.** (3 cr; prereq 3-003 or #) Terrell
Detailed study of Hume's Treatise and Inquiry.
- 5-044 (132). LATER EMPIRICISM.** (3 cr; prereq 3-003 or #; offered when feasible) Terrell
Major developments in empiricist traditions, principally in Great Britain, between Hume and Russell.
- 5-046 (134). KANT.** (3 cr; prereq 3-003 or 3-004 or #) Mason, Arnaud
Philosophy of Kant based on analysis of selected passages from his major works.
- 5-052 (136). BRENTANO.** (3 cr; prereq 3-003 or #; offered when feasible) Terrell
Philosophy of Franz Brentano, and its significance in background of contemporary philosophy.
- 5-054 (137). KIERKEGAARD.** (3 cr; prereq 1 qtr history of philosophy or #) Mason
Detailed examination of major philosophical works.
- 5-101 (157). METAPHYSICS.** (3 cr; prereq 1 qtr history of philosophy, or #) Brodbeck
Some recent attempts to discover general principles characteristic of reality.
- 5-105 (158). THEORY OF KNOWLEDGE.** (4 cr; prereq 1-001 or #) Feigl
Logical structure and experiential roots of knowledge. Meaning, validity, truth, reason, reality.
- 5-201f (154). ELEMENTS OF SYMBOLIC LOGIC.** (4 cr; prereq 1-001 or #) Brodbeck, Arnaud
Development of a formalized language. Syntax and semantics of sentential and first order predicate logic, deductive systems.
- 5-202w (155). INTERMEDIATE SYMBOLIC LOGIC.** (4 cr; prereq 5-201) Brodbeck, Hanson
Axiomatic development of logic; properties of deductive systems.
- 5-211 (169). NONCLASSICAL LOGICS.** (3 cr; prereq Phil 5-202 or Math 5-162 or #) Hanson
Introduction to modal, many-valued, and intuitionistic logics.
- 5-221s (156). PHILOSOPHY OF LOGIC.** (3 cr; prereq 5-202 or Math 5-162 or #) Brodbeck, Hochberg
Selected issues: logic and reality; relation of logic to mathematics; theory of descriptions; paradoxes; identity.
- 5-231 (162). PHILOSOPHY OF LANGUAGE.** (3 cr; prereq 1-001 or 6 Upper Division cr in philosophy or #; offered when feasible) Mason
Contemporary attempts to deal with philosophical problems about language. Special attention given to concept of meaning.
- 5-301 (109). HISTORY OF ETHICS: BRITISH MORALISTS.** (3 cr; prereq Phil 1-003 or 1 qtr history of philosophy or #) Terrell
Ethical theory as developed in Great Britain from 17th through 19th centuries.
- 5-302 (110). HISTORY OF ETHICS: SELECTED CLASSICAL MORALISTS.** (3 cr; prereq Phil 1-003 or 1 qtr history of philosophy or #) Dahl
Moral philosophy outside of British tradition (see 5-301). Specific topics announced in Class Schedule.
- 5-601 (160). PHILOSOPHY OF SCIENCE.** (4 cr; prereq 1-001 or #) Feigl
Meaning, methods, implications of modern science. Basic concepts, presuppositions, and procedures.
- 5-611 (164). PHILOSOPHY OF SOCIAL SCIENCES I.** (3 cr; prereq 15 cr in philosophy, social science, psychology, education, or history, or #) Brodbeck

Criteria for describing and explaining human action; problems of objectivity, reduction, freedom.

- 5-612 (165). **PHILOSOPHY OF SOCIAL SCIENCES II.** (3 cr; prereq 5-611; offered when feasible) Brodbeck
More intensive study of certain topics in 5-611, plus analysis of models and measurement.
- 5-621 (167). **PHILOSOPHY OF HISTORY.** (3 cr; prereq 6 cr in philosophy or 10 cr in history) Mason
Various philosophical interpretations of history, with particular reference to philosophical aspects of historical methods.
- 5-701 (140). **SURVEY OF CONTEMPORARY PHILOSOPHY.** (3 cr; prereq 3-003 or #)
Current systematic and critical philosophies, as represented by their principal exponents.
- 5-311 (150). **ETHICAL THEORY.** (3 cr; prereq 1-003 or #)
Distinguishing characteristics of a moral judgment; examination of representative theories.
- 5-401 (108). **POLITICAL AND SOCIAL ETHICS.** (3 cr; prereq 1-003 or #) Mason
Ethical principles, theoretical and practical, at basis of social order.
- 5-414 (168). **POLITICAL PHILOSOPHY.** (3 cr; prereq 1-002 and 1-001 or #) Sartorius
Under what conditions, if any, ought one to obey the law?
- 5-415 (168A). **PHILOSOPHY OF LAW.** (3 cr; prereq 5-414 or #) Sartorius
An examination of a variety of analytical accounts of law and legal obligation.
- 5-501 (151). **PRINCIPLES OF AESTHETICS.** (3 cr; prereq 3 cr in philosophy or #) Gundersen
Sample topics: standards of evaluation; aesthetic experience; representation, meaning.
- 5-521 (182). **PHILOSOPHY OF RELIGION.** (3 cr; prereq 6 cr in philosophy) Hopkins
Discussion of ground and sanctions of religion, according to various philosophies.
- 5-720, 5-730, 5-740 (141, 142, 143, 144, 145). **STUDIES IN CONTEMPORARY PHILOSOPHERS.** (3,3,3 cr; prereq 3-003 or #)
Works of selected individual philosophers. Specific topics announced in Class Schedule.
- 5-760,5-770 (146,147,148,149). **SELECTED TOPICS IN PHILOSOPHY.** (3,3,3 cr; prereq 1 qtr history of philosophy or #)
Selected philosophical problems of contemporary interest. Specific topics announced in Class Schedule.
- 5-781 (138). **CONTEMPORARY EXISTENTIALISM.** (3 cr; prereq 3-003 or 3-004 or 5-054 or #) Mason
Selected topics in writings of existentialist philosophers since Kierkegaard.
- 5-801 (171). **PROBLEMS OF INDIAN PHILOSOPHY.** (3 cr; prereq 5 cr of philosophy and 3 cr India courses or #)
Introduction to problems of systematic inquiry in India; special attention to analyses of causation, freedom, and knowledge.
- 5-802 (172). **INDIAN LOGIC.** (3 cr; prereq Phil 1-001 and 3 cr India courses or #)
Indian theories of argumentation and inference; applications of logic to philosophical problems.
- 5-803 (173). **VEDANTA PHILOSOPHY.** (3 cr; prereq 5-801 or #)
Survey of Vedantic thought from Upanishads, to present.
- 5-804 (174). **INDIAN BUDDHIST THOUGHT.** (3 cr; prereq 5-801 or #)
Development of characteristic themes of Buddhist philosophy; special attention to major schools of Mahayana.
- 5-805 (175). **INDIAN PHILOSOPHY OF MEDIEVAL PERIOD.** (3 cr; prereq 5-801 or #)
Philosophy of important sects of Hinduism. Thought of such philosophers as Nimbaika, Vallabha, Caitanya.
- 5-806 (176). **CONTEMPORARY INDIAN THOUGHT.** (3 cr; prereq 5-801 or #)
Contemporary trends in Indian philosophy: systematic thinkers of present who carry forward classical tradition.
- 5-911 (107). **PHILOSOPHY OF MODERN LITERATURE.** (3 cr; prereq major or minor in philosophy or literature, or #: offered when feasible) Terrell
Survey of basic philosophical ideas in modern civilization as expressed in major works of literature.

Course Offerings and Major Sequences

5-970f,5-990 (190,191,192). SEMINAR: PHILOSOPHY. (3,3 cr; prereq sr, 9 cr or #)
Topics arranged according to students' interests.

PHYSICAL EDUCATION (PE)

(College of Education)

Arts College students may complete for graduation as many as 6 cr of physical education. Students planning to enter the College of Education later are held to a requirement of three credits.

Students register for physical education classes on the Minneapolis Campus at 205 Johnston Hall and on the St. Paul Campus at Coffey Hall. *The Class Schedule* should be checked to make certain the student's activity rating is suitable for the class selected for registration.

All classes meet for the first meeting as indicated in the *Class Schedule*.

To be assured a place in class a student must attend the first day of class. If a class is closed when a student registers he should report to the first class meeting for possible cancellations.

A towel and locker may be rented for \$4 per quarter plus \$1 deposit, by students using physical education facilities.

Locker and towel cards are issued at:

1. Bursar's Office, Morrill Hall (women).
2. Cooke Hall Equipment Room (men and women).
3. St. Paul Campus, second floor Coffey Hall (men and women).

Present your card to the gymnasium equipment attendant and you will be assigned a locker and issued a towel and lock.

Uniforms for men may be rented at Cooke Hall for \$4 per quarter, or \$12.50 for 12 months.

The following courses are 1 credit unless otherwise indicated.

Adapted

1-001 (PEM 1A, PEW 1A). ADAPTED ACTIVITIES. (Men, women; prereq women, #)

1-101 (PEM 1B, PEW 1B). ADAPTED ACTIVITIES. (Men, women; prereq women, #)

1-201 (PEM 1C, PEW 1C). ADAPTED ACTIVITIES. (Men, women; prereq women, #)

Aquatics

1-004 (PEM 2A, PEW 2A). DIVING, SPRINGBOARD. (Men, women; prereq men 1-007, women 1-308)

1-007 (PEM 5A, PEW 5A). SWIMMING. (Men, women)

1-104 (PEM 2B). DIVING, SPRINGBOARD. (Men only; prereq 1-007 or equiv)

1-107 (PEM 5B, PEW 5B). SWIMMING. (Men, women; prereq men ability to swim 100 yds, women 1-007 or equiv)

1-204 (PEM 2C). DIVING, SPRINGBOARD. (Men only; prereq 1-007 or equiv)

1-205 (PEM 3A, PEW 3A). SCUBA AND SKIN DIVING. (Men, women, prereq men 1-107 or equiv; women 1-207 or equiv)

1-207 (PEW 5C). SWIMMING. (Women only; prereq 1-107 or equiv)

1-306 (PEM 4A, PEW 4A). SENIOR LIFESAVING. (Men, women; prereq ability to swim 440 yds)

1-307 (PEW 5D). SWIMMING. (Women only; prereq 1-207 or equiv)

1-308 (PEW 5E). SWIMMING AND DIVING. (Women only; prereq 1-207 or equiv)

1-309 (PEW 6A). SYNCHRONIZED SWIMMING. (Women only; prereq 1-207 cr equiv)

1-410 (PEM 7A, PEW 7A). WATER SAFETY INSTRUCTOR. (2 cr; men, women; prereq current American Red Cross Senior Lifesaving Certificate)

Combatives

- 1-034 (PEM 8A, PEW 8A). JUDO. (Men, women)
- 1-035 (PEM 9A, PEW 9A). KARATE. (Men, women)
- 1-039 (PEM 10A). WRESTLING. (Men only)
- 1-134 (PEM 8B). JUDO. (Men only; prereq 1-034 or equiv)
- 1-135 (PEM 9B). KARATE. (Men only; prereq 1-035 or equiv)
- 1-139 (PEM 10B). WRESTLING. (Men only; prereq 1-039 or equiv)

Conditioning

- 1-014 (PEM 11A, PEW 11A). CONDITIONING. (Men, women)
- 1-015 (PEM 12A). WEIGHT TRAINING. (Men only)
- 1-016 (PEW 13A). POSTURE AND INDIVIDUAL EXERCISE. (Women only)

Dance

- 1-022 (PEM 14A, PEW 14A). BALLROOM DANCE. (Coed)
- 1-023 (PEM 15A, PEW 15A). FOLK AND SQUARE DANCE. (Coed)
- 1-024 (PEM 16A, PEW 16A). MODERN DANCE. (Coed)
- 1-121 (PEM 16H, PEW 16H). RHYTHMIC ANALYSIS. (Coed; prereq 1-020 or #)
- 1-122 (PEM 14B, PEW 14B). BALLROOM DANCE. (Coed; prereq 1-022 or equiv)
- 1-123 (PEM 15B, PEW 15B). FOLK AND SQUARE DANCE. (Coed; prereq 1-023 or equiv)
- 1-124 (PEM 16B, PEW 16B). MODERN DANCE. (Coed; prereq 1-024 or equiv)
- 1-224 (PEM 16C, PEW 16C). MODERN DANCE. (Coed; prereq 1-124 or equiv)
- 1-324 (PEM 16D, PEW 16D). MODERN DANCE. (Coed; prereq 1-224 or equiv)
- 1-325 (PEM 16E, PEW 16E). MODERN DANCE, COMPOSITION. (2 cr; coed; prereq 1-224 or equiv)
- 1-425 (PEM 16F, PEW 16F). MODERN DANCE, COMPOSITION. (2 cr; coed; prereq 1-325 or equiv)
- 1-426 (PEM 16G, PEW 16G). MODERN DANCE, PRODUCTION. (3 cr; coed; prereq 1-224 or #)

Foundations of Physical Activity

- 1-055 (PEM 17A). FOUNDATIONS OF PHYSICAL ACTIVITY. (2 cr; men only)

Fundamental Movement

- 1-020 (PEM 18A, PEW 18A). FUNDAMENTALS, MOVEMENT. (Coed)

Gymnastics

- 1-046 (PEM 19A, PEW 19A). APPARATUS. (Men, women)
- 1-060 (PEM 20A, PEW 20A). TUMBLING, FLOOR EXERCISE, AND TRAMPOLINE. (Men, women)
- 1-146 (PEM 19B, PEW 19B). APPARATUS. (Men, women; prereq 1-046 or equiv)
- 1-160 (PEM 20B, PEW 20B). TUMBLING, FLOOR EXERCISES, AND TRAMPOLINE. (Men, women; prereq women 1-060 or equiv)
- 1-246 (PEW 19C). APPARATUS. (Women only; prereq 1-146 or equiv)
- 1-260 (PEW 20C). TUMBLING, FLOOR EXERCISE, AND TRAMPOLINE. (Women only; prereq 1-060 or equiv)

Dual Sports and Activities

- 1-032 (PEM 24A, PEW 24A). BADMINTON. (Men, women, coed)
- 1-033 (PEM 28A, PEW 28A). FENCING. (Coed)

Course Offerings and Major Sequences

- 1-036 (PEM 31A). PADDLEBALL—HANDBALL. (Men only)
- 1-037 (PEM 35A, PEW 35A). SQUASH RACQUETS. (Men or women)
- 1-038 (PEM 36A, PEW 36A). TENNIS. (Men, women, coed)

Individual Sports and Activities

- 1-045 (PEM 22A, PEW 22A). ANGLING. (Coed)
- 1-047 (PEM 23A, PEW 23A). ARCHERY. (Men, women)
- 1-048 (PEM 25A, PEW 25A). BOWLING. (Men, women, coed)
- 1-049 (PEM 26A, PEW 26A). CAMPING. (Coed)
- 1-050 (PEM 29A, PEW 29A). GOLF. (Men, women)
- 1-051 (PEM 30A, PEW 30A). HUNTING. (Coed)
- 1-052 (PEW 32A). RIFLEMARKSMANSHIP. (Women only)
- 1-053 (PEM 33A, PEW 33A). ICE SKATING. (Coed)
- 1-057 (PEM 34A, PEW 34A). SKIING. (Coed)
- 1-058 (PEM 27A, PEW 27A). PHYSICAL EDUCATION FOR FAMILY LIVING. (Coed)
- 1-059 (PEM 37A, PEW 37A). TRACK AND FIELD. (Men, women)
- 1-132 (PEM 24B, PEW 24B). BADMINTON. (Men, women, coed; prereq 1-032 or equiv)
- 1-133 (PEM 28B, PEW 28B). FENCING. (Coed; prereq 1-033 or equiv)
- 1-138 (PEM 36B, PEW 26B). TENNIS. (Men, women, coed; prereq 1-038 or equiv)
- 1-145 (PEM 22B, PEW 22B). ANGLING. (Coed; prereq 1-045 or equiv)
- 1-147 (PEW 23B). ARCHERY. (Women only; prereq 1-047 or equiv)
- 1-148 (PEM 25B, PEW 25B). BOWLING. (Men, women, coed; prereq 1-048 and 125 average for men, 120 avg for women)
- 1-150 (PEM 29B, PEW 29B). GOLF. (Men, women; prereq 1-050 or equiv for women)
- 1-154 (PEM 33B, PEW 33B). FIGURE SKATING. (Coed; prereq 1-053 or equiv)
- 1-157 (PEM 34B, PEW 34B). SKIING. (Coed; prereq 1-057 or equiv)
- 1-159 (PEM 37B, PEW 37B). TRACK AND FIELD. (Men, women; prereq 1-059 or equiv)
- 1-238 (PEM 36C, PEW 36C). TENNIS. (Men, women, coed; prereq 1-138)
- 1-248 (PEM 25C, PEW 25C). BOWLING. (Men, women, coed; prereq 160 avg.)
- 1-250 (PEM 29C, PEW 29C). GOLF. (Men, women; prereq 1-150 for women)
- 1-254 (PEM 33C, PEW 33C). FIGURE SKATING. (Coed; prereq 1-154 or equiv)
- 1-256 (PEM 33D, PEW 33D). SKATING, ICE DANCING. (Coed; prereq 1-154 or equiv)

Team Sports and Activities

- 1-067 (PEM 38A, PEW 38A). BASKETBALL. (Men, women)
- 1-068 (PEM 39A, PEW 39A). CURLING. (Coed)
- 1-069 (PEM 40A, PEW 40A). FIELD HOCKEY. (Men, women)
- 1-070 (PEM 41A). HOCKEY, ICE. (Men only; prereq 1-053 or equiv)
- 1-071 (PEW 42A). LACROSSE. (Women only)
- 1-072 (PEM 44A). SOCCER. (Men only).
- 1-073 (PEM 45A, PEW 45A). SOFTBALL. (Men, women)
- 1-074 (PEM 46A, PEW 46A). VOLLEYBALL. (Men, women)
- 1-080 (PEM 43A). OFFICIATING, FOOTBALL-BASKETBALL. (Men only)
- 1-081 (PEW 43A). OFFICIATING BASKETBALL-VOLLEYBALL. (Women only; prereq 1-067 and 1-074)
- 1-082 (PEM 43B). OFFICIATING, HOCKEY-BASKETBALL-VOLLEYBALL. (Men only)

- 1-083 (PEM 43C). OFFICIATING, SWIMMING-WRESTLING-SOFTBALL-TRACK. (Men only)
- 1-167 (PEM 38B, PEW 38B). BASKETBALL. (Men, women; prereq 1-067).
- 1-172 (PEM 44B). SOCCER. (Men only; prereq 1-072 or equiv)
- 1-173 (PEM 45B). SOFTBALL. (Men only; prereq 1-073 or equiv)
- 1-174 (PEM 46B, PEW 46B). VOLLEYBALL. (Men, women; prereq 1-074 or equiv)

Freshman and Varsity Sports

- 1-386 (PEM 48A). FRESHMAN BASEBALL. (Men; prereq #)
- 1-387 (PEM 48B). FRESHMAN BASKETBALL. (Men; prereq #)
- 1-388 (PEM 48C). FRESHMAN CROSS COUNTRY. (Men; prereq #)
- 1-389 (PEM 48D). FRESHMAN FOOTBALL. (Men; prereq #)
- 1-390 (PEM 48E). FRESHMAN GOLF. (Men; prereq #)
- 1-391 (PEM 48F). FRESHMAN GYMNASTICS. (Men; prereq #)
- 1-392 (PEM 48G). FRESHMAN HOCKEY. (Men; prereq #)
- 1-393 (PEM 48H). FRESHMAN SWIMMING. (Men; prereq #)
- 1-394 (PEM 48J). FRESHMAN TENNIS. (Men; prereq #)
- 1-395 (PEM 48K). FRESHMAN TRACK AND FIELD. (Men; prereq #)
- 1-396 (PEM 48L). FRESHMAN WRESTLING. (Men; prereq #)
- 1-486 (PEM 49A). VARSITY BASEBALL. (Men; prereq #)
- 1-487 (PEM 49B). VARSITY BASKETBALL. (Men; prereq #)
- 1-488 (PEM 49C). VARSITY CROSS COUNTRY. (Men; prereq #)
- 1-489 (PEM 49D). VARSITY FOOTBALL. (Men; prereq #)
- 1-490 (PEM 49E). VARSITY GOLF. (Men; prereq #)
- 1-491 (PEM 49F). VARSITY GYMNASTICS. (Men; prereq #)
- 1-492 (PEM 49G). VARSITY HOCKEY. (Men; prereq #)
- 1-493 (PEM 49H). VARSITY SWIMMING. (Men; prereq #)
- 1-494 (PEM 49J). VARSITY TENNIS. (Men; prereq #)
- 1-495 (PEM 49K). VARSITY TRACK AND FIELD. (Men; prereq #)
- 1-496 (PEM 49L). VARSITY WRESTLING. (Prereq #)

PHYSICS AND ASTRONOMY

(Institute of Technology)

Physics (Phys)

A bachelor's degree in physics can be obtained in either CLA or IT. The details of the latter program are in the *Institute of Technology Bulletin*. While both curricula are quite demanding, each provides a strong preparation for graduate school, work in industry, secondary school teaching, or such professional schools as law, business or medicine.

● **Major Sequence for B.A.**—Physics 3-500, 3-510; 5-020/5-021/5-022, 5-023/5-024/5-025 (for those wishing to emphasize classical physics) or 5-010/5-011/5-012, 5-101/5-102/5-103 (for those wishing to study quantum physics); 6 cr of a laboratory course chosen from 5-120, 5-121, 5-122, 5-804, 5-851, 5-852, 5-853, plus additional credits, if necessary, in 5-level physics or astronomy courses to total 35. Students planning to go to graduate school should take both 5-020/5-021/5-022, 5-023/5-024/5-025 and 5-101/5-102/5-103. It is also recommended that a major take three additional 5-level math courses (or CICS 3-101)

Course Offerings and Major Sequences

Students preparing for majors in the College of Education in either natural science (with a physics core) or physical science (with a physics major concentration) are required to include among their physics courses Phys 1-270/1-280/1-290 or other course prerequisite to 3-500, 3-510, and 3-500, 3-510. For details of the curricula leading to these two majors see the *College of Education Bulletin*.

● **Required Background Courses**—A student should, as early as possible, build a strong background in calculus (Math 1-442/1-443/1-444, 3-445; or Math 1-210/1-220/1-230/1-240/1-250/1-260). He should also complete in Lower Division either Physics 1-270/1-280/1-290 or Physics 1-210/1-220/1-230 with its labs 1-215, 1-225, 1-235. The student should take the Physics 1-270 sequence if he has completed Math 1-220 or Math 1-442 by the beginning of Fall quarter; he can take Physics 1-210 either Winter or Spring if he has completed or is currently taking Math 1-220 or Math 1-442.

Special Notes Regarding Physics Courses—

1. Prerequisites for any course in physics may be waived if a petition for registration in the course is granted by the School of Physics, on approval by the instructor.

2. Students who have any credit in one of the sequences 1-010, 1-015, 1-020, 1-025, 1-030, 1-035; 1-040/1-050/1-060; 1-270/1-280/1-290; 1-210, 1-215, 1-220, 1-225, 1-230, 1-235 will not normally receive credit for the corresponding course in another of the sequences.

3. Credit for any nonlaboratory physics course may be earned by special examination (see page 26).

Honors Opportunities and Graduation with Honors—Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the department office.

LOWER DIVISION COURSES

1-010/1-020/1-030 (1-2-3). INTRODUCTORY PHYSICS. (3-3-3 cr; cannot be used as prereq for physics or biological science majors; prereq high school algebra and plane geometry for 1-010, 1-010 or # for 1-020, 1-020 or # for 1-030; 3 lect hrs per wk) Demonstration lectures on principles of physics and physical phenomena underlying these principles. 1-010: Mechanics. 1-020: Heat, electricity, and magnetism. 1-030: Wave motion and light.

1-015/1-025/1-035 (1A-2A-3A). INTRODUCTORY PHYSICS LABORATORY. (1-1-1 cr; prereq ¶1-010/1-020/1-030; combination of 1-010/1-020/1-030 with 1-015/1-025/1-035 may be used to fulfill lab science requirement in CLA but does not serve as prereq for advanced physics courses; 2 lab hrs per wk; offered P/N only) Laboratory course given in conjunction with 1-010/1-020/1-030.

1-040/1-050/1-060 (4-5-6). GENERAL PHYSICS. (5-5-5 cr; primarily for premedical students; prereq Math 1-142 or ¶Math 1-142 or equiv; 4 lect, 1 quiz, 2 lab hrs per wk) 1-040: Mechanics. 1-050: Heat and Electricity. 1-060: Sound and light. Laboratory work is integral part of course.

1-090 (20). ELEMENTARY PHYSICS ACOUSTICS. (5 cr, §1-030, §1-060, §1-290 or §22; primarily for music and music education majors; prereq 1 yr high school algebra) Physical principles of acoustics and wave motion; particular application to field of music and musical instruments. Laboratory work is integral part of course.

1-210 (21). GENERAL PHYSICS. (4 cr; prereq ¶1-215, Math 1-220 or ¶Math 1-220 or Math 1-442 or ¶Math 1-442; 4 lect and 1 quiz hr per wk) Classical mechanics.

1-215 (21A). PHYSICS LABORATORY. (1 cr; prereq ¶1-210; 2 lab hrs per wk; offered P/N only) Laboratory exercises in mechanics.

1-220 (22T). GENERAL PHYSICS. (4 cr; prereq 1-210, ¶1-225, Math 1-230 or ¶Math 1-230)

or Math 1-443 or ¶Math 1-443; 4 lect and 1 quiz hr per wk)
Relativistic kinematics, electricity and magnetism.

- 1-225 (22A). PHYSICS LABORATORY.** (1 cr; prereq ¶1-220; 2 lab hrs per wk; offered P/N only)
Laboratory exercises in electricity and magnetism.
- 1-230 (23T). GENERAL PHYSICS.** (4 cr; prereq 1-220, ¶1-235; 4 lect and 1 quiz hr per wk)
Mechanical and electrical waves; physical and geometrical optics; particle nature of light, wave nature of matter.
- 1-230H (23H). HONORS COURSE: GENERAL PHYSICS.** (4 cr; prereq 1-220, ¶1-235 or ¶1-235H, Δ ; 4 lect and 1 quiz hr per wk)
Mechanical and electrical waves, physical and geometrical optics; particle nature of light, wave nature of matter; quantization of particles in a box.
- 1-235 (23A). PHYSICS LABORATORY.** (1 cr; prereq ¶1-230; 2 lab hrs per wk; offered P/N only)
Laboratory exercises in waves and optics.
- 1-235H (24H). HONORS COURSE: PHYSICS LABORATORY.** (1 cr; prereq ¶1-230 or ¶1-230H, Δ ; 3 lab hrs per wk)
- 1-270/1-280/1-290 (7-8-9). GENERAL PHYSICS.** (5-5-5 cr; primarily for students majoring in physics, mathematics, or chemistry; prereq Math 1-220 or Math 1-442, Math 1-230 or ¶Math 1-230 or Math 1-443 or ¶Math 1-443 for 1-270...Math 1-444 or ¶Math 1-444 for 1-280; 4 lect, 1 quiz, 2 lab hrs per wk)
1-270: Mechanics. 1-280: Heat, electricity. 1-290: Sound and light. Laboratory work is integral part of course.

UPPER DIVISION COURSES

- 3-500 (50T). MODERN PHYSICS.** (4 cr; prereq 1-230 or 1-060 or 1-290, Math 1-240 or Math 1-444; 4 lect and 1 quiz hr per wk)
Quantum mechanics, hydrogen atoms, atoms and molecules, quantum distributions, and topics in solid state, nuclear physics and astrophysics.
- 3-500H (50H). HONORS COURSE: MODERN PHYSICS.** (4 cr; prereq 1-230, Math 1-250 or ¶Math 1-250 or Math 3-445 or ¶Math 3-445, Δ ; 4 lect and 1 quiz hr per wk)
Honors course parallel to 3-500.
- 3-505 (50A). PHYSICS LABORATORY.** (1 cr; prereq ¶3-500; 2 lab hrs per wk)
Parallel to 3-500.
- 3-505H (52H). HONORS COURSE: PHYSICS LABORATORY.** (1 cr; prereq ¶3-500 or ¶3-500H, Δ ; 3 lab hrs per wk)
- 3-510 (51T). STATISTICAL PHYSICS.** (4 cr; prereq 1-060 or 1-290 or 1-230, Math 1-240 or Math 1-444; 4 lect and 1 quiz hr per wk)
Statistical description of systems. thermal interactions, canonical ensemble, macroscopic properties, Maxwell Distribution, statistical approach to thermodynamics, transport phenomena.
- 3-510H (51H). HONORS COURSE: STATISTICAL PHYSICS.** (4 cr; prereq 3-500H, Δ ; 4 lect and 1 quiz hr per wk)
Honors course parallel to 3-510.
- 3-515 (51A). PHYSICS LABORATORY.** (1 cr; prereq ¶3-510; 2 lab hrs per wk)
Parallel to 3-510.
- 3-515H (53H). HONORS COURSE: PHYSICS LABORATORY.** (1 cr; prereq ¶3-510 or ¶3-510H, Δ ; 3 lab hrs per wk)
- 3-600/3-610 (60-61). INTERMEDIATE PHYSICS.** (3-3 cr; primarily for premedical students and students majoring in biological sciences; prereq 1-060 and Math 1-142 or Δ)
Atomic, molecular, and nuclear physics emphasizing implications for biological sciences. Topics selected from: atomic, molecular, and nuclear structure; interaction of electromagnetic radiation with matter; radioactivity; hydrodynamics; thermodynamics; kinetic theory and elementary statistical mechanics; transport phenomena; reaction kinetics.
- 3-900 (70). INDUSTRIAL SUMMER EMPLOYMENT.** (1 cr; prereq 3 yrs academic work plus deptl approval during previous spring qtr)
Employment (contracted by student) with industrial firm in professional or semiprofessional capacity doing work in field of physics. Applications must be approved by department prior to employment. Ten weeks of summer employment with written report on this work approved by employer and department.

Course Offerings and Major Sequences

- 3-970 (71). DIRECTED STUDY.** (1-15 cr; prereq Φ , Δ)
Independent directed study in physics, in areas arranged by the student and a faculty member.
- 5-010/5-011/5-012 (100-102-104). MECHANICS, ELECTRICITY, AND MAGNETISM.** (4-4-4 cr, Φ 5-020 or Φ AEM 5-438 for 5-010; prereq 1-290, Math 1-250 or 3-445 for 5-010...5-010 or AEM 5-438 for 5-011; 4 lect hrs per wk)
Theoretical course designed to prepare students for advanced work.
- 5-020/5-021/5-022 (100A-101A-102A). INTRODUCTION TO ANALYTIC MECHANICS.** (3-3-3 cr, Φ 5-010 for 5-020, Φ 5-010 or Φ AEM 5-438 for 5-021; prereq 1-290 or 1-230, Math 1-250 or 3-445 for 5-020...majors in fields other than physics may use AEM 5-438 as prereq for 5-022; 3 lect hrs per wk)
Analytic course in Newtonian mechanics; emphasis on conservation principles. Topics include: particle dynamics in one, two, and three dimensions; special attention to central force problem; dynamics of system of particles including general motion of a rigid body and normal mode analysis of coupled systems; moving coordinate systems; mechanics of continuous media. wave motion and elementary hydrodynamics; general coordinates and Lagrange formulation of mechanics. Mathematics beyond prerequisites is developed as required.
- 5-023/5-024/5-025 (103A-104A-105A). INTRODUCTION TO ELECTRIC AND MAGNETIC FIELDS.** (3-3-3 cr; prereq 1-290 or 1-230, Math 1-250 or 3-445 for 5-023)
Classical theory of electric and magnetic fields making free use of vector algebra and and vector calculus. Maxwell's equations developed from basic experimental laws in form applicable both to free space and to material media. Wave solutions for these equations discussed, with application to simple situations.
- 5-051/5-052/5-053 (171A-B-C). CLASSICAL PHYSICS.** (4-4-4 cr; prereq 5-012 or both 5-022 and 5-025, advanced calculus or Φ ; 3 lect and 1 problem session per wk)
Classical mechanics, special theory of relativity, and classical electrodynamics. Application of advanced mathematical techniques of these subjects.
- 5-101/5-102/5-103 (108-110-112). PRINCIPLES OF MODERN PHYSICS.** (3-3-3 cr; prereq 3-510 or 3-500, Math 1-260)
Combines elementary quantum mechanics with its historical background and applications to atomic and nuclear physics. Origin of quantum theory, electrons and quanta, atomic structure, particles and waves, theory of quantum mechanics, one-electron atoms, exclusion principle, multi-electron atoms, X-rays, scattering and nuclear physics.
- 5-120, 5-121, 5-122 (120, 121, 122). EXPERIMENTAL ATOMIC AND NUCLEAR PHYSICS.** (3,3,3 cr; prereq 3-500 or Φ ; 6 lab hrs per wk; students may take 1 or 2 qtrs of this sequence in any order)
Techniques and methods used in physics research laboratories. Experiments deal with vacuum gauges and equipment; mass spectroscopy; x-ray diffraction; health physics; detection of charged particles, neutrons and gamma rays; and measurement of several fundamental atomic constants.
- 5-151/5-152/5-153 (181A-B-C). QUANTUM MECHANICS.** (4-4-4 cr; prereq 5-102 or equiv, advanced calculus or Φ ; 3 lect and 1 problem session per wk)
Development from first principles. Schrodinger equation, angular momentum, scattering, matrix representations, spin, approximation methods, interaction with the electromagnetic field, systems of identical particles, applications to atomic systems.
- 5-201 (123). THERMODYNAMICS.** (3 cr; prereq 1-290, Math 1-250 or 3-445)
Formulation of basic laws of thermodynamics concerning temperature, energy, and entropy; application to simple systems.
- 5-202 (124). STATISTICAL MECHANICS.** (3 cr; prereq 5-201 or Φ)
Introduction to transport phenomena; principles of statistical mechanics; applications to equilibrium properties of classical and quantum systems.
- 5-203 (125). INTRODUCTION TO SOLID STATE PHYSICS.** (3 cr; prereq 5-202 or Φ)
Structure; thermal, magnetic, dielectric, and electronic properties of crystalline solids.
- 5-302 (113). TECHNIQUES OF NUCLEAR PHYSICS.** (3 cr)
Statistics of random events; interactions of photons, charged, and neutral particles with matter; detection devices; beam handling; measurement and analysis of cross sections.
- 5-401 (194). INTRODUCTION TO CONTEMPORARY PROBLEMS IN COSMIC RAY AND SPACE PHYSICS.** (3 cr; primarily for students specializing in other branches of physics; prereq Φ)
Discussion of cosmic rays, their characteristics, and their motion in interplanetary and interstellar medium. Topics in X-ray and radio astronomy.

- 5-441 (165). INTRODUCTION TO PHYSICS OF ATMOSPHERE.** (3 cr; prereq 3-500; Math 1-250 or 3-445)
 Survey of physical processes which determine mean state of atmosphere. Topics in radiative transfer and thermodynamics are reviewed in preparation for discussion of heat budget and temperature distribution of atmosphere. Atmospheric properties and phenomena include: formation of clouds and precipitation, convection and stability, atmospheric electricity and ozone.
- 5-442 (166). METEOROLOGY I.** (3 cr; prereq 5-441 or #)
 Quantitative description of large-scale atmospheric motions. Basic equations of meteorological hydrodynamics are introduced and applied in actual weather situations.
- 5-443 (167). METEOROLOGY II.** (3 cr; prereq 5-442, vector analysis or #)
 Theoretical meteorology. Critical examination of mathematical models used to describe large-scale flow processes; energy transformations in atmospheric flow; atmospheric turbulence and eddy transport.
- 5-801 (131). GEOMETRICAL OPTICS.** (3 cr; prereq 15 cr in physics, Math 1-230 or 1-443)
 Fundamentals of ray optics and study of its applications to optical instruments and their components.
- 5-802 (133). PHYSICAL OPTICS.** (3 cr; prereq 15 cr in physics, Math 1-230 or 1-443)
 Wave theory of interference, diffraction, polarization and double refraction; study of their applications.
- 5-804 (134). EXPERIMENTAL OPTICS LABORATORY.** (3 cr; prereq 15 cr in physics, Math 1-230 or 1-443)
 Selected experiments on interference, coherence, diffraction, polarization and dispersion; atomic spectra; electro and magneto optics; thin films; crystal optics; microwaves, optical pumping and lasers; holography; spatial filtering; nonlinear optics; imaging systems.
- 5-805 (135). CONTEMPORARY OPTICS.** (3 cr; prereq 5-802 or familiarity with wave phenomena)
 Selected topics; emphasis on laser and its applications. Wave theory: interference, multiple films, coherence. Quantum phenomena, detectors. Stimulated emission, gas and solid state lasers. Holography and spatial filtering. Symmetry, crystals, and light. Non-linear optics, electro- and magneto-optics, harmonic generation.
- 5-806 (136). SPECTRUM ANALYSIS LABORATORY.** (3 cr; prereq 15 cr in physics, Math 1-230 or 1-443)
 Measurement of wave lengths, intensities and absorption coefficients in infrared, visible, and ultraviolet regions of spectrum.
- 5-851 (146). VACUUM TUBE AND TRANSISTOR CIRCUITS.** (4 cr; prereq 1-290 or 1-220, Math 1-240 or 1-444; 3 lect and one 3-hr lab per wk)
 Basic DC and AC circuit analysis; large- and small-signal analysis of diode, transistor and vacuum tube circuits.
- 5-852 (148). APPLICATIONS OF ELECTRONIC CIRCUITS.** (4 cr; prereq 5-851; 3 lect and one 3-hr lab per wk)
 Uses of electronic circuits; feedback amplifiers, oscillators, waveform generation and shaping; balanced circuits.
- 5-853 (149). ELECTRONIC MEASUREMENTS.** (4 cr; prereq 5-852; 3 lect and one 3-hr lab per wk)
 Measurement of voltage, current and impedance; signal analysis; measuring instruments used in physics research.
- 5-901 (127). HISTORY OF ANCIENT, MEDIEVAL, AND EARLY MODERN PHYSICS.** (3 cr; prereq general physics or #; carries grad cr only for nonmajors)
 Birth of science to establishment of scientific societies and scientific revolution in 17th century. Emphasis on conceptual changes throughout.
- 5-902 (128). HISTORY OF 18TH- AND 19TH-CENTURY PHYSICS.** (3 cr; prereq general physics or #; carries grad cr only for nonmajors)
 Successes, failures of mechanical world picture. Field theory and electromagnetic synthesis. Energy conservation and thermodynamics, Atomic theories and statistical mechanics. The university as research center. Emphasis on conceptual changes throughout.
- 5-903 (129). HISTORY OF MODERN PHYSICS.** (3 cr; prereq general physics or #; carries grad cr only for nonmajors)
 Discovery of electron, X-rays, radioactivity. Theory of relativity. Quantum theory. Discovery of neutron, physics and government, and other selected topics. Emphasis on conceptual changes throughout.

Course Offerings and Major Sequences

5-921 (151). HISTORY OF 19TH-CENTURY PHYSICS: NATURE AND INTERACTIONS OF LIGHT. (3 cr; prereq #)

Primary focus of the course will be on establishment of the wave theory, theories of the ether; the work of Faraday; the establishment of the electromagnetic wave theory, spectral studies, the Lorentz theory of electrons. Related topics, such as the discovery of the conservation of energy, will be discussed when appropriate.

5-922 (150). HISTORY OF 20TH-CENTURY PHYSICS: ORIGINS AND DEVELOPMENTS OF QUANTUM MECHANICS. (3 cr; prereq #)

Selected original papers and secondary historical accounts will be read and discussed. Blackbody radiation laws and origins of concept of quanta in work of Planck. Early contributions of Einstein. X-rays, γ -rays, and early particlewave questions up to von Laue (1912). Spectra and Bohr atom. Old Quantum Theory: Bohr, Sommerfeld, and others; correspondence principle, multiple structure (Zeeman and Stark effects), exclusion principle and spin. Compton effect and transition to quantum mechanics. Heisenberg and matrix mechanics. L. de Broglie, Schroedinger, and wave mechanics. Contributions of Born, Dirac, and others. Uncertainty principle. Conclusions.

5-950 (160A-B-C). SENIOR SEMINAR. (Cr ar; prereq Δ ; primarily for sr physics majors)

5-990 (114, 116, 118). ELEMENTARY PHYSICAL INVESTIGATION. (Cr ar; prereq 3rd yr, Δ)

Problems, either experimental or theoretical, of special interest to student. Written report required.

Astronomy (Ast)

No astronomy major is offered, but students interested in this subject are advised to major in physics, taking elective courses in astronomy and astrophysics. This can be done in either CLA or IT. If such students make their interests known to the Physics Department, they will be assigned an astronomer as adviser.

Ast 1-011 is a descriptive course for the general student. Ast 3-051 is a more technical course, and the remaining courses are quite specialized.

LOWER DIVISION COURSES

1-011 (11). DESCRIPTIVE ASTRONOMY. (5 cr, §3-051) Kaufmanis

Brief survey of what is known about sun, moon, planets and their motions, followed by description of constellations and summary of our knowledge of stellar universe. Completely nonmathematical.

UPPER DIVISION COURSES

3-051 (51). INTRODUCTION TO ASTRONOMY AND ASTROPHYSICS. (3 cr, §1-011; prereq 1 yr calculus and Phys 1-290 or 1-060 or 1-230 or #)

A survey of the known facts about our solar system, galaxy and extragalactic universe. Discussion of the manner in which the information is obtained, and some of the conclusions that can be inferred from these observations. More physical and mathematical than 1-011.

5-121/5-122/5-123 (121-122-123). ASTROPHYSICS AND STELLAR STATISTICS. (3-3-3 cr) Introductory course on motions of stars.

5-161 (161). ASTROPHYSICS OF DIFFUSE MATTER. (3 cr; prereq Ast 3-051 or Phys 3-500 or #)

Discussion of diffuse matter in the solar system, interstellar and extragalactic space, and the radiation field in these environments. Topics include gaseous nebulae, radio astronomy and non-thermal radio sources, cosmic rays, and some aspects of cosmology.

5-162 (162). ASTROPHYSICS OF CONDENSED MATTER. (3 cr; prereq 3-051 or Phys 3-500 or #)

The luminosities, temperatures, masses and densities of stars, together with their mechanisms for energy generation. The chemical composition of stars and the probable course of stellar evolution.

PHYSIOLOGY (Phsl)

(College of Medical Sciences)

● Major Sequence in Arts College—Phsl 3-055/3-056; 20 cr in approved Upper Division courses in related fields.

● **Honors Opportunities and Graduation with Honors**—Information concerning opportunities for honor students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the department office.

LOWER DIVISION COURSES

1-002w (2). **HUMAN PHYSIOLOGY.** (4 cr; will not count for admission to Medical School except by permission of dean of College of Medical Sciences; prereq 1 qtr biology, 1 qtr chemistry; 3 hrs lect, 2 hrs dem per wk) Blackshear

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

3-051w (51). **HUMAN PHYSIOLOGY.** (5 cr; primarily for nursing and physical therapy students; prereq 1 yr chemistry, biology; 4 hrs lect, 2 hrs dem per wk) Love

3-055f/3-056w (55-56). **PRINCIPLES OF PHYSIOLOGY.** (5-5 cr; prereq 1 yr general college chemistry; 1 yr college physics, mathematics through integral calculus; 3 hrs lect, readings) Johnson

Beginning course in physiology emphasizing physical and chemical foundations and utilizing a quantitative approach.

3-091H (91H). **HONORS COURSE: READINGS IN PHYSIOLOGY.** (Cr and hrs ar; open to honors candidates in physiology only; may be taken 1 or more qtrs) Staff

Topics selected for each student; written or oral reviews prepared and discussed on tutorial basis.

3-092H (92H). **HONORS COURSE: PROBLEMS IN PHYSIOLOGY.** (Cr and hrs ar; open to honors candidates in physiology only; may be taken 1 or more qtrs) Staff

Laboratory problems selected for each student; written reports prepared and discussed.

5-100s. **HUMAN PHYSIOLOGY.** (8 cr; primarily for medical students; prereq anatomy, biochemistry; 6 hrs lect, 6 hrs lab per wk) Staff

5-101w (101). **HUMAN PHYSIOLOGY.** (8 cr; primarily for dentistry students; prereq courses in biochemistry and human or mammalian anatomy; 5 hrs lect, 2 hrs conf, 3 hrs lab per wk) Staff

5-102w. **HUMAN PHYSIOLOGY.** (7 cr; primarily for medical-surgical nursing; prereq biochemistry and human or mammalian anatomy; 5 hrs lect, 2 hrs conf) Staff

5-103f. **GENERAL PHYSIOLOGY.** (3 cr; prereq 5-100 or equiv; even years only) Staff

Topics on mechanisms of transport and energy transformation in living organisms.

5-104w. **NEUROPHYSIOLOGY.** (7 cr; prereq 5-100 or equiv, neuroanatomy and #; odd years only) Staff

5-105s. **CARDIOVASCULAR PHYSIOLOGY.** (4 cr; prereq 5-100 or equiv; odd years only) Staff

5-106f. **RESPIRATORY PHYSIOLOGY.** (3 cr; prereq 5-100 or equiv; odd years only) Staff

5-107w. **ALIMENTARY PHYSIOLOGY.** (3 cr; prereq 5-100 or equiv; even years only) Staff

5-108s. **NEPHROLOGY.** (3 cr; prereq 5-100 or equiv; even years only) Staff

5-109f. **SYSTEMS ANALYSIS FOR BIOLOGISTS.** (3 cr; prereq calculus through introduction to differential equations, physical chemistry, or #) Rescigno

5-110f/5-111w (110-111). **PHYSICS FOR BIOLOGISTS.** (3-3 cr; primarily for premedical students and students majoring in biological sciences; prereq Phys 1-060 and Math 1-142 or #; 3 hrs lect per wk) Rescigno

Atomic, molecular and nuclear physics emphasizing implications for biological sciences. Topics selected from atomic, molecular, and nuclear structure; interaction of electromagnetic radiation with matter; radioactivity; hydrodynamics; thermodynamics; kinetic theory and elementary statistical mechanics; transport phenomena; reaction kinetics.

5-113s. **PROBLEMS IN PHYSIOLOGY.** (Cr and hrs ar; prereq 5-100 or #5-100 or #) Staff

Topics assigned for readings or laboratory study; conferences.

POLISH

See Slavic and East European Languages

POLITICAL SCIENCE (Pol)

Political Science is concerned with authoritative decision-making in political systems and with all the processes and activities, particularly governmental, by which a society makes those decisions as well as the values by which the decisions are judged.

● Major Sequence in Arts College—

Required Background Courses:

12 credits, composed of Pol 1-001/1-002 (6 cr) and 1-051/1-052 (6 cr)

The foregoing courses are designed to provide the student with a general knowledge of the American political system and of the political systems of other areas of the world. It should as well introduce him to the principal terms and analytical concepts of political science. To this knowledge the work in the major sequence during the junior and senior years should add a greater knowledge in depth of some of the fields within political science.

Requirements:

The following rules govern the major in political science:

- A. The student must obtain at least 30 cr in Upper Division courses in Political Science (i.e., courses numbered from 3-000 through 5-999).
- B. Of the minimum of 30 cr in Upper Division courses, not more than 15 may be in any one field within Political Science, and not more than 24 may be in any two fields. (The courses and descriptions which follow are grouped by those fields: political theory, comparative government and politics, international relations, politics and behavior, American governmental systems and processes, and public law.)
- C. Each major student must, in addition to the minimum of 30 Upper Division cr, take one of the 3 cr seminars in the "99" series (i.e., those courses whose last two digits are 99). That seminar experience will include a research paper. In the event that a student is unable to take an appropriate seminar in the "99" series, he will be required to register for 0-095 and write a non-credit major paper.

● The Major in International Relations is described on page 136 in this bulletin.

● Honors Opportunities and Graduation with Honors—Information concerning opportunities for honors and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the departmental office.

● Note for Graduate Students—Graduate students who are not graduate majors in political science may take courses in political science with the prefix 5- for credit, subject to the requirement of additional work over and above that assigned to undergraduates. Courses with the prefix 5- may be used for a graduate minor or related field in political science for the M.A. degree, and in part for the Ph.D. minor. See the *Graduate School Bulletin*.

Note for Non-majors—Except for Pol 3-085, all of the Lower Division courses offered by this department are suited to the needs of students who wish to include some political science in their study program. Most of the Upper Division courses in this department also are appropriately considered as general education courses and are, in fact, elected by large numbers of students who are not majors in political science. All of the courses in political science, except those in the 90 series (i.e., those courses whose last two digits range from 90-99), are available to non-majors on the P-N grading system.

LOWER DIVISION COURSES

- 1-001/1-002 (1-2). AMERICAN GOVERNMENT AND POLITICS.** (3-3 cr)
 Analysis of principles, organization, processes, functions of government and the interplay of political forces in United States—national, state and local. Attention given throughout to current issues.
- 1-025 (25). WORLD POLITICS.** (3 cr) Riggs, Pirro, Walcott
 Introduction to contemporary international relations; forms of state interaction; problems of conflict and cooperation.
- 1-026 (26). AMERICAN FOREIGN POLICY.** (3 cr) Blue, Hopmann
 Introduction to institutions and processes which determine American foreign policy.
- 1-031 (30). AMERICAN PUBLIC POLICY.** (3 cr) Eyestone, Schoettle, Gieske
 Analysis of policy to meet major foreign and domestic issues facing American political systems; emphasis on forces molding government policy on civil rights, labor and business, military and diplomatic strategy, foreign aid.
- 1-041 (40). CONTEMPORARY POLITICAL IDEOLOGIES.** (3 cr) Fogelman, Arnaud
 Liberalism, communism, fascism, Nazism, taking account of democratic and dictatorial regimes in theory and practice. Emphasis on ideas, role of policy, power—nationally and internationally.
- 1-051/1-052 (A-B). THE STATE IN MODERN WORLD.** (3-3 cr; nonmajor students may enter either qtr) Lippincott, Fogelman, Benjamin
 Examination of principles, structure, operation of modern state. Emphasis on nation state: historical development, democratic government and totalitarian government.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Special Courses

Most Upper Division courses are listed by the fields named in paragraph B under Requirements. The department does, however, offer a group of Special Courses which are not part of the field arrangement. These courses are listed and briefly described herewith.

- 3-085 (35). QUANTITATIVE MATERIALS IN POLITICAL SCIENCE.** (3 cr; prereq soph and 1-002 or 1-052) Flanigan
 Explanation of techniques of data analysis used in major areas in political science. Emphasis on understanding measurement problems, measures of association and multivariate techniques.
- 3-088. INTERNSHIP.** (3 cr per qtr [maximum 6 cr]) Backstrom
 Internship with government or community organization, arranged through and supervised by the department.
- 3-111H (90H). HONORS COURSE: RESEARCH IN POLITICAL SCIENCE.** (3 cr; open only to majors who have been admitted to political science honors program) Scott, Shaw
 Survey of discipline of political science, its central problems and unifying concerns; introduction to important research methods and data available to political scientists.
- 3-112H (91H). HONORS COURSE: SENIOR HONORS SEMINAR.** (3 cr; prereq 3-111H)
 Readings in great issues and major literature of political science.
- 3-113H, 3-114H, 3-115H (92H, 93H, 94H). HONORS COURSE: WORK IN SELECTED FIELDS.** (Cr ar; prereq 18 cr in political science; consult major advisers)
- 3-940, 3-950, 3-960 (96, 97, 98). DIRECTED STUDY RESEARCH.** (1-3 cr per qtr; students may register under these course numbers to obtain cr for supervised individual reading and research; prereq approval of appropriate instructor and dept undergrad committee of student's proposed program of study)
- 0-095 (95). MAJOR PAPER.** (No cr; prereq consent of director of undergrad study required; required of all majors who are unable to take an appropriate advanced seminar)

Field Courses/A. Political Theory

- 3-699 (99A). ADVANCED SEMINAR: POLITICAL THEORY.** (3 cr; prereq jr or sr, 9 cr in

Course Offerings and Major Sequences

Upper Division courses in political theory field, and #)
Training in advanced analysis, with supervised research and writing, in selected areas of political theory.

- 5-659 (160). **AMERICAN POLITICAL THOUGHT.** (3 cr; prereq 1-052 or 9 cr in social science or #) Shaw, Koeppen
From colonial times to present: Puritanism; Constitution; utopianism; Calhoun; history of anarchist, socialist, populist, and syndicalist thought; social Darwinism; conservatism; political thought in law and literature.
- 5-661 (161). **PROBLEMS OF DEMOCRACY.** (3 cr; prereq 1-052 or 9 cr in social science or #) Shaw, Kvakik
Analysis of postulates and implications; moral foundations; democratic theory and the economic order; liberty and authority; equality; representation; spiritual order, critics of democracy.
- 5-662 (162). **RECENT POLITICAL THOUGHT.** (3 cr; open to jr, sr only; prereq 1-052 or 9 cr in social science or #) Cooperman, Shaw, Arnaud
Main currents from Marx to present: including socialist, anarchist, liberal and conservative thought; problems such as alienation, and political obligation.
- 5-663 (163). **POLITICAL THEORY AND UTOPIA.** (3 cr; prereq 1-052 or 9 cr in social science or #) Sibley
Selected 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.
- 5-664 (164). **DEVELOPMENT OF POLITICAL THOUGHT: ANCIENT.** (3 cr; prereq 1-052 or 9 cr in social science or #) Sibley
Hebrew ideas, Moses to second Isaiah; classical Greek thought; Plato and Aristotle; primitive natural law; cynics and stoics; theory in Roman republic and empire; 1st century Christianity.
- 5-665 (165). **DEVELOPMENT OF POLITICAL THOUGHT: MIDDLE AGES.** (3 cr; prereq 1-052 or 9 cr in social science or #) 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.
- 5-666 (166). **DEVELOPMENT OF POLITICAL THOUGHT: EARLY MODERN.** (3 cr; prereq 1-052 or 9 cr in social science or #) Sibley
Machiavelli; idea of sovereignty; Protestant conceptions; English civil war; Hobbes, Spinoza, Locke, idea of progress; Godwin, Burke, Rousseau, rise of romanticism; German idealism.
- B. Comparative Government and Politics**
- 3-499 (99C). **ADVANCED SEMINAR: COMPARATIVE GOVERNMENT AND POLITICS.** (3 cr; prereq jr or sr, 9 cr in Upper Division courses in comparative government and politics and #; offered when feasible) Benjamin, Wynia
Training in advanced analysis, with supervised research and writing, in selected areas of comparative government and politics.
- 3-561,3-562 (60,61). **INTRODUCTION TO LEGAL SYSTEMS.** See Public Law.
- 5-441/5-442 (141-142). **EUROPEAN GOVERNMENT AND POLITICS.** (3-3 cr; prereq 1-052 or 12 cr in social science or #) Schwarz, Arnaud
Britain, France, Germany, and Italy. Political institutions in their social setting; problems of power and responsibility; governmental stability; political decision making, government and economic order.
- 5-443 (143). **GOVERNMENT AND POLITICS OF SOVIET UNION.** (3 cr; prereq 1-052 or 12 cr in social science or #) Turner
Analysis that seeks to explain rise of Bolshevism; sources and nature of its ideology; history of communist regime; institutional character; organization of power; role of the party.
- 5-444 (145). **GOVERNMENT AND POLITICS OF SCANDINAVIAN COUNTRIES.** (3 cr; prereq 6 cr or 12 cr in social science) Kvakik
A survey of Scandinavian political institutions and behavior; special attention is given the Scandinavian pattern of party politics, the functions of interest groups and legislative behavior. A comparative analysis of voting patterns and voter alignments.
- 5-445 (146). **SOCIAL LEGISLATION AND SOCIAL INSTITUTIONS IN SCANDINAVIAN COUNTRIES.** (3 cr; prereq 1-002 or Soc 1-001) Kvakik

An analysis of the formation of public policy in Scandinavia. Particular attention is given to the role of administrative agencies in the policy process. The development and implementation of social legislation.

- 5-446/5-447 (149-150). **GOVERNMENT AND POLITICS OF SOUTH ASIA.** (3-3 cr; prereq 6 cr or 12 cr in social science or §) Blue
 Political institutions of South Asian countries in their social setting; sources and nature of ideologies; politics and class structure; parties and elections; economic and social policies.
- 5-448 (148). **GOVERNMENT AND POLITICS OF AFRICAN COUNTRIES.** (3 cr; prereq 1-052 or 12 cr in social science or §) Pirro, Kvavik
 Political institutions and behavior in sub-Saharan African countries in their social and cultural settings, influence of class and tribal structure; parties and elections; source and nature of ideologies; economic and social policies.
- 5-453 (153). **JAPANESE GOVERNMENT AND POLITICS.** (3 cr; prereq 1-052 or 12 cr in social science or §) Benjamin
 Constitutional and political development in Japan; political ideas, government, political parties, and problems.
- 5-454 (154). **CHINESE GOVERNMENT AND POLITICS.** (3 cr; prereq 1-052 or 12 cr in social science or §) Benjamin, Turner
 Constitutional and political development in China; political ideas, government, political parties, and problems.
- 5-455 (155). **LATIN-AMERICAN GOVERNMENT AND POLITICS I** (3 cr; prereq 1-002 or §) Wynia
 Analysis of Latin American political culture, political participation, the dynamics of political processes and contemporary developmental issues.
- 5-456 (156). **LATIN-AMERICAN GOVERNMENT AND POLITICS II** (3 cr; prereq 5-455 or §) Wynia
 Examination of several countries with emphasis on their resolution of problems of social, economic, and political change.
- 5-457 (157). **GOVERNMENT AND POLITICS OF DEVELOPING AREAS.** (3 cr; prereq 15 cr in any combination of economics, sociology, and/or anthropology) Holt, Benjamin, Blue
 Analysis of political problems of new nations; particular emphasis on political consequences of breakdown of traditional society and problems of developing new institutional forms and procedures.
- 5-458 (158). **BUREAUCRACY AND ADMINISTRATION IN DEVELOPING COUNTRIES.** (3 cr; prereq 1-052 or §) Wynia
 Analysis of administrative processes and policy implementation in developing countries; emphasis on the functions of bureaucrats in policy-making processes.
- 5-461/5-462 (159A-159B). **COMPARATIVE GOVERNMENTAL SYSTEMS: PRINCIPLES AND PROBLEMS.** (3-3 cr; prereq 6 cr in any Upper Division comparative government courses or §) Blue, Benjamin, Arnaud
 Application of comparative method to study of politics with reference to Western and non-Western institutions; organization of political power in 20th century state; parties and pressure groups; voting behavior, representation, and legislation.
- 5-486 (196). **PROSEMINAR: EAST AND SOUTH ASIA.** (See International Relations)
- 5-739 (139). **THE POLITICS OF ETHNIC COMMUNITIES.** (3 cr; prereq 6 cr in social science) Koepfen
 Cross-cultural study of politics of ethnic communities with special emphasis on the politics of black communities in the United States. Topics on internal community politics and their local and national political systems.
- C. International Relations**
- 3-899 (99B). **ADVANCED SEMINAR: INTERNATIONAL RELATIONS.** (3 cr; prereq jr or sr, 9 cr in Upper Division courses in international relations, and §) Riggs, Hopmann, Pirro
 Training in advanced analysis, with supervised research and writing, in selected areas of international relations.
- 5-323 (123). **AMERICAN DEFENSE POLICY.** (See American Governmental Systems and Processes)
- 5-871 (171). **SCANDINAVIAN FOREIGN POLICY.** (3 cr; prereq 6 cr in history or political science or §; offered when feasible) Kvavik

Course Offerings and Major Sequences

- 5-875 (175). DIPLOMACY.** (3 cr)
Nature and functions, historical development of diplomacy; its relation to forms of government and power systems. Traditional, personal, open and secret diplomacies. Essentials of diplomatic usage.
- 5-876 (176). U.S. FOREIGN AFFAIRS ADMINISTRATION.** (3 cr)
Control of foreign relations; treaties and executive agreements; structure and functions of foreign affairs agencies. Coordination of agencies; Foreign Service and other overseas agencies.
- 5-877 (177). U.S. FOREIGN POLICY.** (3 cr)
Analysis of factors conditioning U.S. foreign policy: geographic and economic position, defense needs and dispositions, social structure, ideologies, public opinion; political parties, interest groups, bureaucracy; leadership.
- 5-879 (183). INTERNATIONAL LAW (CONFLICT).** (3 cr; prereq 5-882 or ‡; offered when feasible) McLaughlin
War and hostile measures short of war, military occupation, war crimes, neutrality, collective security sanctions.
- 5-881/5-882/5-883 (180-181-182). INTERNATIONAL LAW (PEACE).** (3-3-3 cr) McLaughlin
5-881/5-882: Relation of international law to individuals, states, international community; jurisdictional problems; survey of principles developed in diplomatic practice, national courts, international adjudications. 5-883: Status of diplomatic agents and consuls, treaties, arbitration. treatment of aliens, pacific settlement.
- 5-884 (184). INTERNATIONAL POLITICS I.** (3 cr) Firro, Hopmann
Analysis of systems of interaction among nation-states: balance of power, bipolar, and other types of international systems; theories of stability, change, conflicts, and cooperation.
- 5-885 (185). INTERNATIONAL POLITICS II.** (3 cr; prereq 5-884 strongly recommended) Firro, Hopmann
Study of state action in international system; capabilities analysis; state policy formation and its impact on conflictual and cooperative state behavior, methods of analysis.
- 5-886 (186). REGIONAL INTERNATIONAL SYSTEMS.** (3 cr) Riggs
Examination and comparison of selected regional systems, past and contemporary; stability and change.
- 5-887 (187). INTERNATIONAL ORGANIZATION I.** (3 cr) Riggs, Walcott
The United Nations and its antecedents; decision-making in international organizations; world organization for international security, disarmament, and peaceful settlement of disputes.
- 5-888 (188). INTERNATIONAL ORGANIZATION II.** (3 cr) Riggs
Study of world organization for social, economic, cultural, and humanitarian cooperation; comparison of functional and political organizations; problems of international administration.
- 5-889 (189). REGIONAL INTERNATIONAL ORGANIZATION.** (3 cr)
Analysis and comparison of selected regional international organizations; regional defense, social and economic cooperation; relationship between regional and world organizations; economic and political integration.
- 5-896 (196). PROSEMINAR: EAST AND SOUTH ASIA.** (3 cr; prereq sr) Turner
(Same as Anth 5-971, Geog 5-299, Hist 5-549, Ortl 5-551) Integrating course for students majoring in East and South Asia area studies program.
- D. Politics and Behavior**
- 3-751 (51). FIELD WORK IN POLITICS.** (3 cr; prereq 1-002; see also 3-352, 3-353 under heading American Governmental Systems and Processes) Backstrom
Field study of political organization, leadership, and campaigns in local communities and state.
- 3-799 (99D). ADVANCED SEMINAR: POLITICS AND BEHAVIOR.** (3 cr; prereq jr or sr, 9 cr in Upper Division courses in politics and behavior, and ‡) Flanigan, Crew
Training in advanced analysis, with supervised research and writing, in selected areas of politics and behavior.
- 5-304 (130). ORGANIZATIONAL BEHAVIOR.** (3 cr; prereq 1-002) Walcott
Operation and significance of complex, formal organizations in the political system, with emphasis on public bureaucracy. Communication and influence processes; decision-making and innovation; relation of organization to environment.

- 5-317 (117). **COMMUNITY POWER STRUCTURES.** (See American Governmental Systems and Processes)
- 5-736 (136). **INTEREST GROUPS.** (3 cr; prereq 1-002 or §) Koeppen, Flanigan
Formation, organization and strategies of groups in pursuit of objectives in democratic political systems; the group approach to political analysis; evaluation of the varying approaches to the study of interest groups and their function in the polity.
- 5-737 (137). **POLITICAL PARTIES.** (3 cr; prereq 1-002 or §) Sorauf, Crew, Eyestone
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.
- 5-738 (138). **POLITICAL CAMPAIGNS AND ELECTIONS.** (3 cr; prereq 1-002 or §) Backstrom, Crew
Examination of national, state, and local campaigns and elections, including field work in local political parties and election campaigns.
- 5-739 (139). **THE POLITICS OF ETHNIC COMMUNITIES.** (See Comparative Government and Politics)
- 5-767 (167). **PUBLIC OPINION AND VOTING BEHAVIOR.** (3 cr; prereq 1-002 or §) Flanigan, Koeppen
Analysis of major factors influencing electoral decisions; study of political attitude formation and change.
- 5-768 (168). **POLITICAL CULTURE: SOCIAL BASIS OF POLITICAL BEHAVIOR.** (3 cr; prereq 1-002 or §...5-767 recommended) Flanigan, Koeppen
Social and environmental influences on political attitudes and political participation; study of political elites and the politics of mass society.

E. American Governmental Systems and Processes

- 3-352, 3-353 (52, 53). **FIELD WORK IN GOVERNMENT.** (3,3 cr; prereq 1-002; 3-353 offered when feasible; see also 3-751 under heading Politics and Behavior) Backstrom
Field study of politics, leadership, organization, and activities in local and state government. In even-numbered years, deals with local government officials; in odd-numbered years, with state legislators.
- 3-381 (80). **NATIONAL GOVERNMENT IN UNITED STATES.** (3 cr, §1-002; not open to soph)
Special reference to current problems and developments.
- 3-382 (81). **STATE AND LOCAL GOVERNMENT AND POLITICS.** (3 cr, §1-002; not open to soph)
Analysis of state constitutions; legislative, executive, and judicial organization and procedures; political parties, political interest groups and elections; state-local government relations; personnel, finance, and major functions.
- 3-399 (99E). **ADVANCED SEMINAR: AMERICAN GOVERNMENTAL SYSTEMS AND PROCESSES.** (3 cr; prereq jr or sr, 9 cr in Upper Division courses in American governmental systems and processes, and §) Sorauf, Eyestone, Backstrom
Training in advanced analysis, with supervised research and writing, in selected areas.
- 5-305 (131). **ADMINISTRATIVE PROCESS.** (3 cr) Walcott, Jernberg
Role and function of administrative agencies as political subsystems. Leadership recruitment; policy initiation and implementation; relations with other political institutions; responsibility and responsiveness to public and private demands.
- 5-307 (107). **THE AMERICAN CHIEF EXECUTIVE.** (3 cr; prereq 1-002 or §) Eidenberg, Eyestone, Jernberg
Constitutional powers and political roles of President and governors; chief executive and administration; executive relations with legislatures; party and popular leadership; presidential roles in crisis.
- 5-308 (108). **LEGISLATIVE ORGANIZATION AND PROCEDURE.** (3 cr; prereq 1-002 or §) Eidenberg, Crew, Shaw
Congress and state legislatures at work.
- 5-309 (109). **JUDICIAL PROCESS.** (3 cr; prereq 1-002 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.

Course Offerings and Major Sequences

- 5-311 (121). ADMINISTRATIVE REGULATION.** (3 cr; prereq 5-321 or 5-502 or #) Krislov, Walcott
Administrative development of regulatory programs; problems of bureaucracy, interest groups, and safeguards.
- 5-315 (115). STATE GOVERNMENT.** (3 cr; prereq 1-002 or #) Crew
Description and analysis of political institutions and behavior in the American states; involves interstate comparisons as well as comparisons between state and national political systems.
- 5-316 (116). INTRODUCTION TO COMMUNITY POLITICS.** (3 cr; prereq 1-002 or #) Scott, Backstrom
Community political systems in their legal, political, social, and economic environments. Community political behavior and decision making.
- 5-317 (117). COMMUNITY POWER STRUCTURES.** (3 cr; prereq 1-002 or #) Scott, Koeppen
Analysis of political elites and leadership in various kinds of communities.
- 5-318 (118). METROPOLITAN GOVERNMENT AND POLITICS.** (3 cr; prereq 1-002 or #) Scott
Development of political and governmental problems in metropolitan areas. Analysis of politics of metropolitan reform.
- 5-321 (120). GOVERNMENT AND ECONOMIC ORDER.** (3 cr; prereq 1-002 or #) Eyestone
Analysis of relation of government to major areas of economy; policy decision making emphasized.
- 5-322 (122). GOVERNMENT AND DOMESTIC PUBLIC POLICY.** (3 cr; prereq 1-002 or #) Eyestone, Gieske
Federal, state, and local policy making in welfare, education, agriculture, labor, business.
- 5-323 (123). AMERICAN DEFENSE POLICY.** (3 cr; prereq 1-002 or #) Schoettle
Contemporary strategic theory; general and limited war capabilities of United States; American defense policy-making process.
- 5-876 (176). UNITED STATES FOREIGN AFFAIRS ADMINISTRATION.** (See International Relations)

F. Public Law

- 3-561, 3-562 (60, 61). INTRODUCTION TO LEGAL SYSTEMS.** (3,3 cr; prereq jr or #) McLaughlin
Elementary survey, primarily for social science students, of principal legal systems of the Western world. Emphasis upon organization, procedures, methods of growth, relation to political and economic systems, basic juristic conceptions. 3-561: Roman law and European derivatives. 3-562: Anglo-American law.
- 3-599 (99F). ADVANCED SEMINAR: PUBLIC LAW.** (3 cr; prereq jr or sr, 9 cr in Upper Division courses in public law, and #) Krislov, Sorauf, Chase
Training in advanced analysis, with supervised research and writing, in selected areas of public law.
- 5-309 (109). JUDICIAL PROCESS.** (See American Governmental Systems and Processes)
- 5-501 (101). PRINCIPLES OF AMERICAN CONSTITUTION I.** (3 cr; prereq 1-002 or equiv) Chase, Krislov
Nature of constitutions, judicial review, organization and powers of national government.
- 5-502 (102). PRINCIPLES OF AMERICAN CONSTITUTION II.** (3 cr; prereq 5-501 or equiv) Chase, Sorauf
National—state and interstate relations.
- 5-503 (103). PRINCIPLES OF AMERICAN CONSTITUTION III.** (3 cr; prereq 5-501 or 5-502 or equiv) Chase, Krislov
Civil rights and civil liberties.
- 5-879 (183). INTERNATIONAL LAW (CONFLICT).** (See International Relations)
- 5-881/5-882/5-883 (180-181-182). INTERNATIONAL LAW (PEACE).** (See International Relations)

PORTUGUESE

See Spanish and Portuguese Languages

PSYCHOLOGY (Psy)

All students contemplating a major in psychology must pick up a set of instructions in room 105 Elliott Hall.

● Major Sequences in Arts College—

There are two major sequences—an Honors Sequence and a General Sequence.

A. HONORS SEQUENCE. For high-ability students, especially those preparing for graduate work in psychology. Requires a 3.00 overall grade point average at the University of Minnesota and a 3.00 grade point average in courses in the major.

Applications for admission should be made at the Honors Program office, 115 Johnston Hall, in the first quarter of the student's junior year. The application will then be sent to the chairman of the department for approval. Each honors major is advised by a senior faculty member in the department.

Course Program:

Required background courses: Psy 1-001/1-002†, 1-004/1-005†

Requirements:

- A. 6 cr from the following: Psy 5-011, 5-014, 5-015, 5-017, 5-018, 5-019, 5-012/5-013†, 5-041/5-042†
- B. 6 cr from the following: Psy 5-101/5-102†, 5-125/5-126†, 5-201, 5-604/5-605†, 5-211
- C. 3 cr from the following: Psy 5-134, 5-061, 5-062, 5-031, 5-071
- D. 3 cr in Psy 3-801 and 3 cr in Psy 5-862 or 5-021
- E. Honors Seminar in Psychology: Psy 3-900H
- F. Special Project: Psy 3-990H

An individual research project must be completed under the personal supervision of a faculty member in the particular field of psychology selected by the student. This research project is to result in a thesis of high quality. Credit for this work is received by registration in Psy 3-990.

- G. 2 to 14 additional Upper Division courses in psychology will be elected with consent of the adviser, leading to a total of no more than 39 credits in psychology, child psychology and educational psychology combined.

Honors students are expected to enroll in honors sections of appropriate psychology courses when they are available and are encouraged to attend relevant College Honors seminars.

B. GENERAL SEQUENCE. Intended for students who have a broad interest in psychology regardless of whether they plan to take additional work beyond the B.A. degree. Students in this sequence are advised by a staff member in the undergraduate advising office, 105 Elliott Hall.

Course Program:

Required background courses: Psy 1-001/1-002†, 1-004/1-005†

Requirements:

- A. 6 cr from the following: Psy 3-031, 3-051, 3-011, 5-011, 5-014, 5-015, 5-017, 5-018, 5-019, 5-134, 5-012/5-013†, 5-041/5-042†, 5-061, 5-062, 5-031, 5-071
- B. 6 cr from the following: Psy 3-124, 5-101/5-102†, 5-125/5-126†, 5-201, 5-604/5-605†, 5-211, CPsy 3-301, CPsy 5-303
- C. 3 cr in Psy 3-801
- D. 12 to 24 additional cr in Upper Division psychology, child psychology, and educational psychology courses combined.

Course Offerings and Major Sequences

General Comments on Psychology Offerings:

All students majoring in psychology are strongly urged to elect courses in the natural sciences and in mathematics, especially Math 1-141 or 1-441, and 1-142 or 1-442.

Psy 3-801 should be taken as early as possible in the junior year. Further courses in statistics (such as PubH 5-450, 5-451, Psy 5-861, etc.) are recommended for students planning graduate work in psychology.

Majors in psychology may take not more than 39 Upper Division credits in psychology, educational psychology, and child psychology combined. Students interested in taking child psychology courses are encouraged to consider the following: CPsy 3-301, 5-303, 5-331, 5-343. Any educational psychology course open to CLA students can also be part of the psychology major. Students should note that psychology majors may not have a double major in psychology and child psychology. For courses in child psychology see page 71; educational psychology courses may be found on page 92.

Students who are not planning for graduate work may, in consultation with an adviser, select as electives those courses most relevant to their needs, including preparation for subprofessional service in applied fields relating to psychology, such as Interviewer, Personnel Technician, Mental Health Worker and Research Technician.

Many of the courses numbered below the prefix 8- are designed for non-majors as well as majors in psychology. This department particularly recommends Psy 3-031, 3-051, 3-011, 5-201, and 5-604/5-605† as courses contributing to the general education of all students.

LOWER DIVISION COURSES

1-001f,w/1-002w,s† (1-2†). **GENERAL PSYCHOLOGY.** (3-3† cr; prereq soph or 3rd qtr fr with B avg)

General introduction to study of human behavior. Prerequisite for all advanced courses in psychology.

1-001Hf/1-002Hw† (1H-2H†). **HONORS COURSE: GENERAL PSYCHOLOGY.** (3-3† cr; prereq #)

General introduction to study of human behavior.

1-004f,w/1-005w,s†/1-006s (4-5†-6). **INTRODUCTORY LABORATORY PSYCHOLOGY.** (2-2†-2 cr; prereq soph, 1-001/1-002 or ¶1-001/1-002) Fox, others

Experiments illustrating contemporary subject matter such as sensory psychology, psychophysics, perception, motivation, verbal behavior, animal and human learning, problem solving, and psychological measurement.

UPPER DIVISION COURSES

Psychology courses with the prefix 5- are open to sophomores who have an average grade of at least C in all their courses.

3-011f (75). **INTRODUCTION TO PSYCHOLOGY OF LEARNING.** (3 cr; prereq 1-002) Overmier, Trapold

Basic methods in study of learning. Development of fundamental concepts and principles governing the learning process.

3-031s (55). **SENSATION AND PERCEPTION.** (3 cr; prereq 1-002, 1-004) Burkhardt

Roles of stimulus, receptor organ and brain, and of learning and motivation, in man's perception of his world. Lectures and demonstrations.

3-051s (64). **INTRODUCTION TO COGNITIVE PSYCHOLOGY.** (3 cr; prereq 1-002 and 1-005 or ¶1-005)

Discussion of the basic research problems and theoretical concepts in the study of cognitive factors in perception and memory.

3-124. **PSYCHOLOGY OF INDIVIDUAL DIFFERENCES.** (4 cr; prereq 3-801) Dunnette

The differential method as a means for studying human behavior, the impact and importance of individual differences in modern society, instruments of measurement and behavior prediction in differential psychology and the major determiners of individuality.

- 3-801f,w (90). INTRODUCTION TO STATISTICAL METHODS.** (3 cr, §Soc 3-801; prereq 1-001/1-002 or equiv) J. Campbell, Dawis, Dunnette
Central tendency and variation, correlation methods, bivariate regression, introduction to problems of sampling and hypothesis testing.
- 3-900Hw. HONORS SEMINAR: PSYCHOLOGY.** (1 cr, P-N only; offered for jr honors students majoring in psychology) Fox
The seminar provides a selective overview of contemporary issues in psychological research, information concerning initiation of the psychology 3-990H senior research project, discussion of advanced study and career opportunities in psychology, and a general orientation concerning special learning opportunities available to honors majors in the Department of Psychology.
- 3-970f,w,s (70). DIRECTED STUDIES IN PSYCHOLOGY.** (1-15 cr; prereq #)
This is a course devised for independent study or small seminars, and is designed to permit the student to pursue his interests by special reading and/or study.
- 3-990f,w,s (190). PROJECT IN PSYCHOLOGY.** (Cr ar; prereq sr, #)
Individual library study or empirical investigation.
- 3-990Hf,w,s (190H). HONORS COURSE: PROJECT IN PSYCHOLOGY.** (Cr ar; prereq sr, #)
Individual library study or empirical investigation.
- 5-011f (100). THEORIES OF LEARNING.** (3 cr; prereq 3-011 except for students in Sequence A and grads) LaBerge
Examination of major theories of learning and discussion of basic issues of learning and performance in man and animals.
- 5-012w/5-013s† (128-129†). PSYCHOLOGY OF LEARNING.** (3-3† cr; prereq 3-011 except for students in Sequence A and grads) Trapold
Survey: experimental literature on classical conditioning and all types of instrumental learning. Critical evaluation of theories relevant to these types of learning.
- 5-014w (104). HUMAN LEARNING A.** (3 cr; prereq 3-011 except for students in Sequence A and grads) Fox
Examination of major processes and variables involved in human learning; emphasis upon verbal and motor learning. Topics include: information feedback, skill acquisition, retention and long-term memory, facilitation and interference, abilities and performance prediction.
- 5-015s (105). HUMAN LEARNING B.** (3 cr; prereq 3-011, except for students in Sequence A and grads) LaBerge
Examination of major processes involved in human learning; emphasis upon verbal and perceptual learning. Topics include discrimination learning, choice and probability learning, concept formation, and programmed learning.
- 5-017f (117). ANALYSIS OF BEHAVIOR I.** (3 cr; prereq 3-011, except for students in Sequence A and grads) MacCorquodale
Systematic formulation of topics of psychology based upon a Skinnerian analysis. Scientific method, learning, motivation, and emotion.
- 5-018w (118). ANALYSIS OF BEHAVIOR II.** (3 cr; prereq 5-017 or #) MacCorquodale
Account of an individual's verbal behavior in terms of his past history and current circumstances.
- 5-019s (119). ANALYSIS OF COMPLEX BEHAVIOR.** (3 cr; prereq 5-017 or #) Thompson
Experimental analysis of complex behavior repertoires based upon systematic formulation presented in 5-017. Extends these principles to development of an approximate system of analysis of large, continuous samples of behavior. Social as well as other complex sequences of human and other animal behavior.
- 5-021w (169). QUANTITATIVE MODELS FOR LEARNING.** (3 cr; prereq 5-861 or #) Yellott
Introduction to mathematical models for learning, stochastic operator models, stimulus sampling theory, models for stimulus detection and recognition.
- 5-031w (150). PERCEPTION.** (3 cr; prereq 3-031, 3-801 or #) Pick
Critical analysis of methods of investigation and data obtained in study of selected problems of perception: psychophysical methods, form perception, space perception, constancy, spatially coordinated behavior and attention. Emphasis primarily but not exclusively on visual perception.
- 5-041w/5-042s† (132-133†). PSYCHOLOGY OF MOTIVATION.** (3-3† cr; prereq 9 cr) Russell
Classical and contemporary theories of motivation. Elaboration of basic drives into motives, acquisition of new drives and goals; dynamics of elaborated drive structure.

Course Offerings and Major Sequences

- Motivation in complex situations involving set, level of aspiration, Zeigarnik effect, frustration, etc.
- 5-054s (110). PSYCHOLOGY OF LANGUAGE.** (3 cr; prereq 3-011 except for students in Sequence A and grads) Jenkins
An introduction to the theories and experimental evidence involved in past and present conceptions of psychology of language.
- 5-061f (148). FUNDAMENTALS OF PHYSIOLOGICAL PSYCHOLOGY.** (3 cr; prereq 1-002, 1-005 or Biol 1-002 or §) Roberts
Physiological and neuroanatomical mechanisms underlying behavior of higher vertebrates. Sleep, wakefulness, and attention processes. Effects of drugs on behavior.
- 5-062s (149). NEUROPSYCHOLOGY OF MOTIVATION AND LEARNING.** (3 cr; prereq 5-061 or §) Roberts
Brain mechanisms of aggression, fear, pain, hunger, thirst, reproductive behavior, learning, and discrimination processes.
- 5-071s (151). ANIMAL PSYCHOLOGY.** (3 cr; prereq 1-002, 1-005 or equiv in another science)
Historical, philosophical, and biological foundations; consciousness; motivation; learning; reasoning; judgment; abnormal behavior; social influences.
- 5-101w/5-102s† (120-121†). PERSONALITY.** (3-3† cr; prereq 9 cr in psychology) Tellegen
Presentation and discussion of several major theories and concepts.
- 5-125f/5-126w† (125-126†). DIFFERENTIAL PSYCHOLOGY.** (4-4† cr; prereq 3-801, or 1-005 and 5 cr in statistics, honors cand, grad) Bouchard, Dunnette
Introduction to methodology. Quantitative studies of nature of psychological traits and influence of age, sex, heredity, and environment in causation of individual differences in ability and temperament.
- 5-134f (127). INTRODUCTION TO BEHAVIORAL GENETICS.** (3 cr; prereq 5-126) Gottesman
Survey: methodology appropriate to analyzing contribution of genetic and environmental factors to variance observed in normal and abnormal traits in man and animals. Emphasis on intelligence, neuroses, and psychoses. For all examples, independent variable will be genotype of an organism.
- 5-201s (140). SOCIAL PSYCHOLOGY.** (3 cr; prereq 1-002, 1-005 and 9 cr in social science)
Survey of theories of evidence. Effects of other persons, mass communications, social class, and group membership upon individual's attitudes and behavior.
- 5-201Hs (140H). HONORS COURSE: SOCIAL PSYCHOLOGY.** (3 cr; prereq §) Berscheid
Same description as 5-201.
- 5-211f (162). SOCIAL PSYCHOLOGY OF ORGANIZATIONS.** (3 cr; prereq 9 cr) Weick
Survey: theoretical and methodological issues in study of dyads and small groups in organizational environments. Social processes as constraints on organizational functioning. Experimental approaches to study of group processes in organizational settings.
- 5-212w (163). BEHAVIOR OF ORGANIZATIONS.** (3 cr; prereq 5-211) Weick
Theory, simulation, and observation of intergroup and organizational processes. Survey of central concepts of organization, and critical analysis of underlying behavioral assumptions.
- 5-501s (130). VOCATIONAL PSYCHOLOGY.** (3 cr; prereq 3-801 or equiv) Dawis
Analysis of individuals and work environments with reference to selection of, adjustment to, and behavior in work; history, theories, and current developments in vocational psychology.
- 5-604w/5-605s† (144-145†). ABNORMAL PSYCHOLOGY.** (3-3† cr; prereq 9 cr or 6 cr plus Biol 1-002 or 12 cr in a social science)
Normal and abnormal behavior contrasted. Dynamics and determinants of personality maladjustments.
- 5-701w (160). PERSONNEL AND INDUSTRIAL PSYCHOLOGY.** (3 cr; prereq 1-002, 1-005, or 3 cr in statistics or §)
Application of psychological research and methodology to problems of recruiting, selecting, training, and motivating members of organizations. Topics to include job behavior description, performance measurement, selection and placement strategies, use and evaluation of psychological tests, employment interview, evaluation of training effects, theory and principles of work motivation.
- 5-702s (161). PSYCHOLOGY OF INDIVIDUAL BEHAVIOR IN ORGANIZATIONS.** (3 cr; prereq 5-701 or §) Dunnette

Application of principles of individual differences and psychological measurement to study of human behavior in ongoing organizations. Topics to include problem solving and decision making, communication, attitude change, influence of group membership and organizational climate, problems of supervision, interpersonal relations.

- 5-751f,w (156). PSYCHOLOGY OF ADVERTISING.** (3 cr, §Jour 5-251; prereq 1-002) Peterman
Examination of psychological principles, research techniques, and applications in advertising and selling. Analysis of relevant consumer attitudes and behavior. Psychological mechanisms upon which effectiveness of advertisements and commercials depend.
- 5-861f (168). QUANTITATIVE METHODS IN PSYCHOLOGY.** (3 cr; prereq §) Yellott
Elementary set theory, probability theory, matrix algebra, difference equations; applications to construction and evaluation of behavior models.
- 5-862f (191). PSYCHOLOGICAL MEASUREMENT: THEORY AND METHODS.** (3 cr; honors candidate or grad student; prereq 3-801 or equiv) J. Campbell, Dawis, Dunnette, Weiss
Types of measurement (tests, scales, inventories, Q-sort) and their construction; theory and measurement of reliability and validity.
- 5-863s (192). PSYCHOLOGICAL MEASUREMENT: MULTIVARIATE METHODS.** (3 cr; prereq 5-862 or §) Weiss
Multivariate prediction and discrimination (linear and nonlinear models); dimensional analysis, including cluster and factor analysis.

PUBLIC HEALTH (PubH)

(College of Medical Sciences)

- **Major Sequence for B.A. Degree**—See section in this bulletin under Biometry. For additional details of courses of study in public health see the *School of Public Health Bulletin*.

LOWER DIVISION COURSES

- 1-001 (3). PERSONAL HEALTH.** (2 cr, §3-001) Thomson
Normal body function; causes and prevention of disease.
- 1-002 (4). HEALTH PROBLEMS OF COMMUNITY.** (2 cr; prereq 1-001, or successful passing of exemption exam [exemption from 1-001 on basis of military service does not serve as a prereq])
Prevention of disease in family and community.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-001 (50). PERSONAL AND COMMUNITY HEALTH.** (3 cr, §1-001, §1-002, §3-002, §5-002) Thomson
Fundamental principles of health conservation and disease prevention.
- 3-002 (51). COMMUNITY HYGIENE.** (3 cr, §1-002, §1-003, §3-001, §3-003, or §5-001 or those excused from 1-001 on basis of military service; prereq 1-001)
Community programs for disease control.
- 3-151 (75). INTRODUCTION TO ENVIRONMENTAL HEALTH.** (3 cr; prereq 3 cr in public health) Bond
Principles of urban and rural sanitation relating to water, food, wastes, housing, accidents, radiation, air, insects, rodents.
- 3-400 (70). DIETED STUDIES.** (Cr ar)
Individual study or research under the guidance of a staff member.
- 5-002 (100A). ELEMENTS OF PUBLIC HEALTH I.** (3 cr; prereq 1-001 or 3-001 or equiv and course in bacteriology) Schuman, Thomson
Occurrence and prevention of communicable, degenerative, and industrial disease; protection of food, water, and milk; maternal and child health.
- 5-152 (102A). ENVIRONMENTAL HEALTH.** (2 cr; prereq 5-002 or §) Bond, others
General principles of urban and rural sanitation; problems encountered by official health agencies.

Course Offerings and Major Sequences

- 5-342 (103). PUBLIC HEALTH BACTERIOLOGY.** (Cr ar; prereq MicB 5-232, 5-161 and #) Bauer
Bacteriologic and serologic diagnosis, public health laboratory administration and methods.
- 5-700 (106). PUBLIC HEALTH ADMINISTRATION.** (3 cr; prereq 5-002)
Structure, basic functions, and activities of public health agencies.

Physiological Hygiene

- 3-385 (91). PHYSIOLOGICAL HYGIENE.** (4 cr [to receive cr for this course 3-386 must also be completed except by #]; prereq 8 cr in chemistry and 4 cr in human anatomy or equiv) Taylor
Basic physiological principles and facts.
- 3-386 (92). PHYSIOLOGICAL HYGIENE.** (4 cr; prereq 3-385 or equiv) Taylor
Effects of exercise, nutrition, environment, and age on performance and health.
- 3-600 (95). HUMAN NUTRITION.** (3 cr; prereq courses in chemistry and biology or #) Stief
Particular reference to public health. Nutritional values of foods, food utilization and requirements, food management, nutrition education.
- 5-080 (125). PUBLIC HEALTH EDUCATION.** (2 cr; prereq #) Craig
Planning educational aspects of community health programs; group procedures; public relations; selection, development, and use of mass media.
- 5-380 (191). APPLIED HUMAN NUTRITION.** (3 cr; prereq #) J Anderson, Grande, Stief
Food composition and standards of nutrient requirements. Methods in dietary and nutritional status surveys. Applications of nutrition to public health programs related to specific diseases and population groups.
- 5-385 (192). PHYSIOLOGY OF EXERCISE.** (Cr ar; prereq Phsl 5-100 or equiv and #) Taylor
Muscular efficiency, deconditioning, effects of exercise on metabolism and physiological systems.

For other courses in public health see the *Graduate School Bulletin* or the *School of Public Health Bulletin*.

RELIGIOUS STUDIES

Students interested in the B.A. program in Religious Studies and students who wish to take courses which deal with religion are urged to contact a member of the Religious Studies Committee.

Religious Studies in the College of Liberal Arts is interdisciplinary and inter-departmental, unified by its subject matter rather than by a single methodology; religions and religious phenomena are studied in a number of departments, as listed in the subareas below. Approaches and presuppositions vary: when ancient religions are investigated in the History or Classics departments, or primitive religions discussed in the Anthropology department, or religious poetry analyzed in the English department, or iconography studied in the department of Art History, the methods are those of the department involved.

Because some students wish to major in Religious Studies, and many others choose Religious Studies courses as electives, the Religious Studies Committee has identified the courses in various departments devoted wholly, or in some significant part, to some aspect of religion, and organized them into eight subareas. A booklet, *Religious Studies at the University of Minnesota*, published annually by the Religious Studies Committee, lists all courses in each subarea; it is available in Room 225, Johnston Hall, or from any member of the committee.

The Subareas of Religious Studies

- I. RELIGIONS IN ANTIQUITY—Drawing on courses and faculty in Classics, History and Middle Eastern Languages.
- II. RELIGIOUS EXPRESSION IN LITERATURE AND THE ARTS—American Studies, Art History, Classics, East Asian Languages, English, French and Italian, German, Middle Eastern Languages, Music, Scandinavian, Slavic and East European Languages, Spanish and Portuguese, Theatre Arts.
- III. RELIGION IN EUROPE—Art History, Classics, French and Italian, German, History,

Humanities, Philosophy, Political Science, Slavic and East European Languages, Spanish and Portuguese.

IV. TWENTIETH-CENTURY RELIGIONS—East Asian Languages, History, Humanities, Middle Eastern Languages, Philosophy, Political Science, Sociology.

V. RELIGION AND SOCIETY—Anthropology, Political Science, Psychology, Sociology.

VI. RELIGIONS IN EAST AND SOUTH ASIA—Anthropology, Art History, East Asian Languages, History, Philosophy, South Asian Languages.

VII. NEAR EASTERN RELIGIONS—Anthropology, History, Middle Eastern Languages.

VIII. RELIGIONS IN AMERICA—American Studies, Art History, English, History, Humanities, Philosophy, Sociology.

For a complete list of courses in each subarea, see the booklet *Religious Studies at the University of Minnesota*.

Each student's major program must be approved in advance by an adviser in Religious Studies; thus a student considering the major first consults with the chairman of the Religious Studies Committee, who may then refer him to the committee member whose academic responsibilities and concerns are closest to his area of interest. (Those preparing for the ministry frequently take Religious Studies courses, but would ordinarily be advised not to major in Religious Studies. See rather the entry "*Preparation for Theological Training*," pages 235 below.) Prospective majors should be aware of the following:

1. The student majoring in Religious Studies will specialize in any two of the subareas above, earning at least 18 Upper Division credits in each; he will also take enough work in other subareas to earn the total of 60 Upper Division credits required for this major. In his freshman and sophomore years, the student should elect Lower Division courses which are prerequisite to the courses he intends to take for the major.

2. A 3-6 credit integrative paper or study project is also required; in most cases it is directed by the student's adviser and completed in the senior year. Credits thus earned do not count toward the 18-credit minima in his two subareas but are included in the total of 60 Upper Division credits for the major.

For additional information and advice, the chairman or other members of the Religious Studies Committee (see page 273) should be consulted, particularly since revision and improvement within Religious Studies may be expected during the years this bulletin is in use.

RHETORIC (Rhet)

(College of Agriculture, Forestry, and Home Economics)

LOWER DIVISION COURSES

1-147f,w,s (47). **EFFICIENT READING**. (1 cr for Arts College students; prereq score above 30th percentile on a standard reading test; not a remedial course) Brown
Increases reading rate, comprehension, and vocabulary. SBA students see School of Business Administration Bulletin.

RUSSIAN

See Slavic and East European Languages

SANSKRIT

See South Asian Languages

SCANDINAVIAN (Scan)

● Major Sequence in Scandinavian Languages and Literature for B.A. in Arts College—Danish, Norwegian, or Swedish 1-101/1-102/1-103/1-104, 3-011, 3-104;

Course Offerings and Major Sequences

36 cr in courses with a prefix of 5 or higher, including Scan 5-701/5-702 or 5-704 or 5-705; 5-615 or 5-616; 3 quarters of 5-970; and one additional course in literature. 9 cr may be taken in courses in other departments that deal with Scandinavia, for example, art, history, and political science.

Honors Opportunities and Graduation with Honors—Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the departmental office.

Courses appropriate for nonmajors: Scan 3-501, 5-605, 5-606, 5-611, 5-612, 5-615, 5-616, 5-617, 5-704, 5-705, 5-714, and 5-716.

LOWER DIVISION COURSES

Danish (Dan)

1-101f/1-102w/1-103s (1-2-3). **BEGINNING DANISH.** (5-5-5 cr) Bomash

1-104f (4). **INTERMEDIATE DANISH.** (5 cr; prereq 1-103 or equiv) Bomash

Finnish (Fin)

1-101f/1-102w/1-103s (1-2-3). **BEGINNING FINNISH.** (5-5-5 cr)

1-104f (4). **INTERMEDIATE FINNISH.** (5 cr; prereq 1-103 or equiv) Lehtinen

Norwegian (Nor)

1-101f/1-102w/1-103s (1-2-3). **BEGINNING NORWEGIAN.** (5-5-5 cr) Mishler, others

1-104f (4). **INTERMEDIATE NORWEGIAN.** (5 cr; prereq 1-103 or equiv)

Swedish (Swed)

1-101f/1-102w/1-103s (1-2-3). **BEGINNING SWEDISH.** (5-5-5 cr) Saether, Lundquist, others

1-104f (4). **INTERMEDIATE SWEDISH.** (5 cr; prereq 1-103 or equiv) Saether

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Danish (Dan)

3-011w (50). **ADVANCED COMPOSITION.** (3 cr; prereq 1-104 or equiv) Bomash

Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.

3-104w (51). **READING PROSE.** (3 cr; prereq 1-104 or equiv) Bomash

Short prose fiction and nonfiction read to develop reading fluency in prose literature of the 19th and 20th centuries.

3-105s (52). **READING POETRY.** (3 cr; prereq 1-104 or equiv) Bomash

Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

Finnish (Fin)

3-011w (50). **ADVANCED COMPOSITION.** (3 cr; prereq 1-104 or equiv) Lehtinen

Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.

3-104w (51). **READING PROSE.** (3 cr; prereq 1-104 or equiv) Lehtinen

Short prose fiction and nonfiction read to develop reading fluency in prose literature of 19th and 20th centuries.

3-105s (52). **READING POETRY.** (3 cr; prereq 1-104 or equiv) Lehtinen

Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

Norwegian (Nor)

3-011w (50). **ADVANCED COMPOSITION.** (3 cr; prereq 1-104 or equiv)

Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.

- 3-104w (51). **READING PROSE.** (3 cr; prereq 1-104 or equiv)
Short prose fiction and nonfiction read to develop reading fluency in prose literature of 19th and 20th centuries.
- 3-105s (52). **READING POETRY.** (3 cr; prereq 1-104 or equiv)
Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

Swedish (Swed)

- 3-011w (50). **ADVANCED COMPOSITION.** (3 cr; prereq 1-104 or equiv) Saether
Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.
- 3-104w (51). **READING PROSE.** (3 cr; prereq 1-104 or equiv) Saether
Short prose fiction and nonfiction read to develop reading fluency in prose literature of 19th and 20th centuries.
- 3-105s (52). **READING POETRY.** (3 cr; prereq 1-104 or equiv) Saether
Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

Scandinavian (Scan)

- Scan 3-501 (Scan 60). **INTRODUCTION TO SCANDINAVIA.** (3 cr; does not count toward Scandinavian major or toward fulfilling language requirement)
Limited number of major cultural figures and social developments are presented.
- Scan 5-206 (Scan 153). **LATE MEDIEVAL, RENAISSANCE, AND BAROQUE LITERATURE.** (3 cr; prereq major or minor in Scandinavian...good knowledge of a Scandinavian language required)
Readings in original of secular and religious literature from 14th through 17th century.
- Scan 5-211. **SCANDINAVIAN ROMANTICISM.** (3 cr; prereq 8 cr in literature or #...good knowledge of a Scandinavian language required)
Discussion and analysis of works of the major Romantic authors.
- Scan 5-605 (Scan 150). **SCANDINAVIAN MYTHOLOGY.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only)
Study of Scandinavian myths based on Poetic Edda and Prose Edda.
- Scan 5-606 (Scan 151). **ICELANDIC SAGA.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only)
Literary study of Saga literature, its origins and development.
- Scan 5-607 (Scan 152). **SCANDINAVIAN FOLKLORE.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only)
Literary and folkloristic investigation of Scandinavian ballad and folk tale.
- Scan 5-608 (Scan 154). **HOLBERG AND PERIOD OF ENLIGHTENMENT.** (3 cr; prereq 8 cr in literature of #...knowledge of a Scandinavian language required for majors only)
Representative figures of 18th century Dano-Norwegian and Swedish literature.
- Scan 5-611f (Scan 161). **THE 19TH-CENTURY SCANDINAVIAN NOVEL.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only) Simpson
Examination of "the great tradition" in modern Scandinavian novel.
- Scan 5-612w (Scan 162). **CONTEMPORARY TRENDS IN SCANDINAVIAN NOVEL.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only) Simpson
Characteristic trends in Scandinavian life and thought in 20th century as expressed in prose fiction.
- Scan 5-615f (Scan 171). **IBSEN AND BEGINNINGS OF MODERN DRAMA.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only)
Critical study of plays of Ibsen, especially with reference to role he has played as "founder" of modern European drama.
- Scan 5-616w (Scan 172). **STRINDBERG AND DRAMA IN REVOLT AND TRANSITION.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only)

Course Offerings and Major Sequences

- Strindberg as master of naturalistic drama and as "father of modernity" in European and American theater since his day.
- Scan 5-617s (Scan 173). **CONTEMPORARY SCANDINAVIAN DRAMA AND THEATER.** (3 cr; prereq 8 cr in literature or #...reading knowledge of a Scandinavian language required for majors only)
Examination of Scandinavian drama and theater of today, particularly with reference to experimental trends.
- Scan 5-701f/5-702w/5-703s (Scan 121-122-123). **OLD NORSE: LANGUAGE AND LITERATURE.** (3-3-3 cr; prereq one Germanic language other than modern English, or #) Hasselmo
Acquisition of reading knowledge of Old Icelandic. Linguistic and literary study of texts from the Sagas and Eddas.
- Scan 5-704f (Scan 124). **STRUCTURE OF SCANDINAVIAN LANGUAGES.** (3 cr; prereq one Germanic language other than modern English) Hasselmo
Contrastive analysis of phonology, morphology, and syntax of Danish, Icelandic, Norwegian, and Swedish.
- Scan 5-705w (125). **HISTORY OF SCANDINAVIAN LANGUAGES.** (3 cr; prereq one Germanic language other than modern English) Hasselmo
External and internal history of Scandinavian languages.
- Scan 5-710s (Scan 126). **SEMINAR: SCANDINAVIAN LINGUISTICS.** (3 cr; prereq 5-704 and 5-705 or #) Hasselmo
Problems in synchronic and diachronic linguistics.
- Scan 5-714 (Scan 134). **STRUCTURE OF FINNISH.** (3 cr) Lehtinen
Analysis of phonology, morphology, and syntax of modern Finnish.
- Scan 5-715 (Scan 135). **HISTORY OF FINNISH.** (3 cr) Lehtinen
Internal history of Finnish; special emphasis on its relationship to other Finno-Ugric languages.
- Scan 5-721f/5-722w/5-723s (Scan 127-128-129). **MODERN ICELANDIC.** (1-1-1 cr; prereq 5-701/5-702/5-703 or ¶5-701/5-702/5-703 or #)
Reading of contemporary Icelandic texts and analysis of Modern Icelandic grammar.
- Scan 5-970 (Scan 191, 192, 193). **READINGS IN SCANDINAVIAN LITERATURE.** (1-15 cr per qtr; prereq good reading knowledge of a Scandinavian language)
Intensive reading of representative Scandinavian texts. Designed especially for majors and minors in Scandinavian.
- ArtH 5-641 (ArtH 141A). **SCANDINAVIAN PAINTING.** (3 cr; prereq sr, grad or Δ) Nelson
- ArtH 5-642 (ArtH 142A). **SCANDINAVIAN SCULPTURE AND MINOR ARTS.** (3 cr; prereq sr, grad or Δ) Nelson
- Ger 5-752 (Ger 125). **RUNIC INSCRIPTIONS.** (3 cr; prereq #) C Wood
- Ger 5-741 (Ger 113). **GOTHIC.** (3 cr; prereq Ger 3-701 and 11 cr in German courses 3-301 and above or equiv) C Wood
- Ger 5-742/5-743† (Ger 114-115). **METHODS OF COMPARATIVE GERMANIC LINGUISTICS.** (3-3† cr; prereq Ger 5-741) C Wood
- Hist 5-271, 5-272, 5-273 (Hist 118J, 119J, 120J). **HISTORY OF SCANDINAVIAN COUNTRIES.** (3,3,3 cr)
- Hist 5-771/5-772/5-773† (Hist 172G-173G-174G). **PROSEMINAR: SCANDINAVIAN HISTORY.** (3-3-3† cr)
- Phil 5-054 (Phil 137). **KIERKEGAARD.** (3 cr; prereq one course from Phil 3-001, 3-002, 3-003 or #) Mason
- Pol 5-444 (Pol 145). **GOVERNMENT AND POLITICS OF SCANDINAVIAN COUNTRIES.** (3 cr; prereq 6 cr or 12 cr in social science)
- Pol 5-445 (Pol 146). **SOCIAL LEGISLATION AND SOCIAL INSTITUTIONS IN SCANDINAVIAN COUNTRIES.** (3 cr; prereq Pol 1-002 or Soc 1-001)

SERBO-CROATIAN

See Slavic and East European Languages

SLAVIC AND EAST EUROPEAN LANGUAGES

General Program—Courses especially recommended for general education purposes are Russ 3-501, 3-502, 3-503, and 3-601, 3-602, 3-603, 5-201, 5-202, 5-203; Slav 3-701.

Polish (Plsh)

LOWER DIVISION

- 1-101f/1-102w/1-103s (1-2-3). **BEGINNING POLISH.** (5-5-5 cr) Staff
Provides essentials for speaking, understanding, and reading basic Polish.
- 1-104f/1-105w/1-106s (4-5-6). **INTERMEDIATE POLISH.** (3-3-3 cr; prereq 1-103 or #) Staff
Grammar review, reading of advanced texts, and practice in speaking Polish.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-201f/3-202w/3-203s (71-72-73). **READINGS IN POLISH LITERATURE.** (3-3-3 cr; prereq 1-106 or #; offered when feasible)
Reading and discussion of selected classics and contemporary texts.
- 3-601, 3-602, 3-603 (81-82-83). **SURVEY OF POLISH LITERATURE IN TRANSLATION.** (3,3,3 cr) Kondy
- 5-970 (151, 152, 153). **DIRECTED READINGS.** (1-3 cr per qtr; prereq #) Staff

Russian (Russ)

● **Major Sequence in Arts College**—Russ 3-011/3-012/3-013, 3-021/3-022/3-023, 3-104/3-105, 3-201/3-202/3-203, and 6 cr from 3-501, 3-502, 3-503. (6 cr from Hist 5-264, 5-265, 5-266 may be substituted.)

● **Requirements for a Teacher's Certificate**—For a specialized curriculum see *College of Education Bulletin*.

LOWER DIVISION COURSES

- 1-101f/1-102w/1-103s (1-2-3). **BEGINNING RUSSIAN.** (5-5-5 cr; five class meetings a wk)
Basic experience in speaking, reading, and understanding Russian through acquisition of basic patterns of speech.
- 1-104f/1-105w/1-106s (4-5-6). **INTERMEDIATE RUSSIAN.** (4-4-4 cr; prereq 1-103)
Expansion of experience in speaking and understanding Russian, and reading of contemporary texts.
- 1-112Hw/1-113Hs (2H-3H). **HONORS COURSE: BEGINNING RUSSIAN.** (5-5 cr; for students who have demonstrated high ability and achievement during 1st qtr; prereq Δ)
- 1-114Hf/1-115Hw/1-116Hs (4H-5H-6H). **HONORS COURSE: INTERMEDIATE RUSSIAN.** (4-4-4 cr; prereq 1-113H or #)
- 1-201f/1-202w/1-203s (1A-2A-3A). **BEGINNING RUSSIAN.** (5-5-5 cr) Sjoberg
A beginning course in Russian with particular attention to reading. Credit for any quarter of the sequence completed.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

- 3-001f/3-002w/3-003 (53-54-55). **READING RUSSIAN.** (3 cr; prereq 1-203 or 1-106) Kleiner
Reading modern Russian prose varied in style, subject matter and degree of difficulty. Lectures on uses of derivational affixes.
- 3-011f/3-012w/3-013s (61-62-63). **RUSSIAN COMPOSITION.** (3-3-3 cr; prereq 1-106 or #)
- 3-021f/3-022w/3-023s (56-57-58). **RUSSIAN CONVERSATION.** (3-3-3 cr; prereq 1-106 or #)

Course Offerings and Major Sequences

- 3-104f/3-105w (64-65). INTRODUCTION TO LITERARY ANALYSIS.** (3-3 cr; prereq 3-013 and 3-023) Kulesov
Selections from various genres of Russian literature read, analyzed, and discussed in terms of basic techniques and terminology of literary analysis. Taught in Russian.
- 3-116H (90H). HONORS COURSE: PROSEMINAR IN RUSSIAN LITERATURE.** (3 cr; prereq 3-104/3-105 and Δ) Kulesov
Study of selected significant themes in Russian literature.
- 3-201f/3-202w/3-203s (71-72-73). SURVEY OF RUSSIAN LITERATURE.** (3-3-3 cr; prereq 1-106 or §) Prokopov
Includes selected readings of representative Russian literature of various periods, in Russian. Discussion of material in Russian.
- 3-501f, 3-502w, 3-503s (75, 76, 77). RUSSIAN CIVILIZATION AND CULTURE.** (3-3-3 cr, prereq 1-106 or §)
Aspects of Russian culture—land, peoples, languages, institutions, intellectual and artistic trends and achievements. Lectures in Russian.
- 3-601f, 3-602w, 3-603s (81, 82, 83). NINETEENTH-CENTURY RUSSIAN LITERATURE IN TRANSLATION.** (3,3,3 cr; no knowledge of Russian required)
3-601: Pushkin, Lermontov, Gogol. 3-602: Turgenev and Dostoevsky. 3-603: Tolstoy and period from 1880.
- 5-011f/5-012w/5-013s (103-104-105). RUSSIAN SYNTAX AND COMPOSITION.** (2-2-2 cr; prereq 3-013) Alexeev
Problems of syntax; practice in Russian prose composition.
- 5-201f, 5-202w, 5-203s (113, 114, 115). SOVIET RUSSIAN LITERATURE IN TRANSLATION.** (3-3-3 cr) Armes
Course conducted in English.
- 5-204 (170). NINETEENTH-CENTURY RUSSIAN CRITICISM.** (3 cr; prereq sr or §) Alexeev
Analysis and discussion of works of major Russian literary critics of period, in their literary, political, and social implications.
- 5-301f/5-302w/5-303s (131-132-133). RUSSIAN POETRY: 19TH CENTURY.** (3-3-3 cr; prereq 3-203 or §; offered when feasible)
- 5-401, 5-402 (141-142). DOSTOEVSKY.** (3,3 cr)
Analytic approach to study of novels of Dostoevsky.
- 5-404w, 5-405s (144, 145). TOLSTOY.** (3,3 cr)
Tolstoy's novels, stories, and dramas, and their place in the history of Russian literature, evolution of Tolstoy's artistic ideas and methods. Effect of his changing moral and philosophical views on this evolution.
- 5-406 (146). PUSHKIN.** (3 cr)
Study of selected works of Aleksandr Pushkin and their place in development of Russian literature.
- 5-407/5-408 (160-161). PLAYS OF ANTON CHEKHOV.** (3-3 cr)
5-407: Early short works. 5-408: Major plays. Chekhov's letters pertaining to his drama. Selected biographical and critical works. History of production of major plays. (Readings and discussions.)
- 5-501 (134). INTELLECTUAL TRENDS IN 19TH-CENTURY RUSSIA.** (3 cr) Alexeev
Study of intellectual and social movements in the 19th century in their relation to literary developments of that period.
- 5-701f, 5-702w, 5-703s (107, 108, 109). STRUCTURE OF MODERN RUSSIAN,** (3,3,3 cr; prereq 1-106 or §) Kleiner
- 5-704f, 5-705w, 5-706s (125, 126, 127). HISTORY OF RUSSIAN LANGUAGE.** (3,3,3 cr; prereq 1-106 or equiv; offered when feasible) Kleiner
Linguistic analysis of historical development of Russian language.
- 5-970 (151-152-153). DIRECTED READINGS.** (1-3 cr per qtr; prereq 3-203 or §; offered when feasible)

Serbo-Croatian (Serb)

LOWER DIVISION COURSES

- 1-101f/1-102w/1-103s (1-2-3). BEGINNING SERBO-CROATIAN.** (5-5-5 cr) Sjoberg
- 1-104f/1-105w/1-106s (4-5-6). INTERMEDIATE SERBO-CROATIAN.** (3-3-3 cr; prereq 1-103 or §) Sjoberg

UPPER DIVISION COURSES

5-970 (151, 152, 153). **DIRECTED STUDIES.** (1-3 cr per qtr; prereq #) Staff

Slavic (Slav)

UPPER DIVISION COURSES

3-201f/3-202w/3-203s (71-72-73). **SOUTH SLAVIC LITERATURE.** (3-3-3 cr; offered when feasible)

3-701 (80). **INTRODUCTORY SURVEY OF THE SLAVIC LANGUAGES.** (3 cr) Kleiner
Introductory survey of the Slavic languages in most salient aspects of their evolution from unity to diversity. Particular attention to aspects of contemporary diversity.

5-701/5-702/5-703 (113-114-115). **OLD CHURCH SLAVIC.** (3-3-3 cr; prereq Ling 3-005 or equiv; offered when feasible)
Introduction to Slavic linguistics.

SOCIAL SCIENCE (SSci)

These courses draw on a wide variety of research findings and theories from the social sciences, arranged so as to present a coherent interpretation of several broad aspects of human behavior. Each course focuses on a significant segment of human action; the general aim is to provide the student with an understanding of how such behavior may be explained. Most of the courses are experimental, seeking to focus attention on key human and social problem areas from a variety of disciplinary approaches. The Social Science Program does not have a program leading to a degree in CLA.

LOWER DIVISION COURSES

Lower Division courses in this program are open to Upper Division students only by special permission of the instructor.

1-201 (20). **CRISIS IN HUMAN RELATIONS.** (3 cr)

Seminar to study the existing conflict between racial groups in the United States, identification of misconceptions about racial groups, consideration of diversity between and within groups, and analysis of the national mood.

1-300 (30). **CULTURAL BACKGROUND OF SELECTED CIVILIZATIONS.** (2-5 cr) Roff

To provide an in-depth study of an early civilization, or of one facet of the culture of a country, by a two-sequence course of study and travel. Content would vary from year to year. A geographic area will be explored.

1-846 **THE MEXICAN AMERICAN.** (3 cr; no prereq) Wagner

The course will be a broad examination of the history, anthropology, and sociology of the Mexican American with special emphasis on current cultural and political movements.

1-905 (45). **MATHEMATICS AND THE STUDY OF MAN.** (2 cr, §Math 1-905; prereq Math 1-441, 1-142 or 1-442)

Foundation of mathematics with special emphasis on its axiomatic character. General problems of mathematical models in the social sciences will be introduced, followed by examination of mathematical models in the social sciences with particular emphasis on the axiomatic base of social science theories and problems of association between axioms in mathematics and axioms in social science theory.

3-101f,3-102w,3-103s (51,52,53). **THE MEANING OF HUMANITY; SOCIETY AND TECHNOLOGY; COMMUNITY.** (4,4,4) Roshwald

3-101: The problem of the essence of man and the factors determining his course is explored through a variety of theories such as those of Marx, Freud, Plato. 3-102: The impact of technology on human conditions and the attitude of man to technology are examined, both philosophically and sociologically. 3-103: This course deals with the meaning of man as a social being and with the variety of groups in which human beings participate.

3-104f,3-105w,3-106s (54,55,56). **LIBERTY: A CONCEPTUAL AND INSTITUTIONAL ANALYSIS.** (3,3,3 cr; prereq 3-104 for 3-105, 3-105 for 3-106 or #) Roshwald

3-104f: The meaning of liberty, in theory and practice. Individual and collective liberty. Liberty and civilization. Conflict among different values of liberty. 3-105w:

Course Offerings and Major Sequences

- Liberty and the comparative study of civilizations. How different civilizations deal with varieties of liberties. 3-106s: Colloquium discussing the implications of 3-104 and 3-105.
- 3-107/3-108 (57-58). PROBLEMS OF CONTEMPORARY SOCIETY.** (3 cr per qtr) Naftalin
A systematic analysis of critical current social and political problems, such as poverty, environmental pollution, discrimination, rising crime and violence, the exercise of dissent and other freedoms, the urban crisis, relations among federal, state, and local governments. Viewed in the context of the use of social science in the development of public policy.
- 3-201f,3-202w (60,61). THE CHANGING COMMUNITY IN AMERICA.** (3,3 cr; prereq 3-201 for 3-202) Sykes
3-201: Perspectives for the study of community in America. The community in Colonial America and in the 18th Century American communities. Theoretical sociological approaches to community and to history. 3-202: Village and city in America 1900-1930.
- 3-203 (62). STRUCTURE AND DYNAMICS OF POVERTY.** (3 cr; prereq 9 cr in related social science)
Structural characteristics of poverty as described by social, legal, and economic criteria. Specific problems of poverty; unemployment, immobility, illiteracy, crime, and others. Private and public programs designed to alleviate poverty.
- 3-205 (65). POVERTY, INSECURITY AND INEQUALITY OF OPPORTUNITY.** (3 cr; prereq Econ 1-001 and 1-002 or §) Zaidi
Concepts of income distribution; dimensions of poverty; discussion of variety of measures adopted or proposed for the purpose of ameliorating poverty, assuring security and providing equality of opportunity.
- 3-208 (68). HUMAN GENETICS AND SOCIAL AFFAIRS.** (See listing under Genetics)
- 3-301f,3-302w,3-303s (71,72,73). SELECTED TOPICS IN CLASSICS OF SOCIAL SCIENCES.** (3,3,3 cr; prereq 15 Upper Division cr in two or more social sciences, C+ average overall) Cooperman, Spear, others
Examination in depth major works of social science whose theories, methods, and subject matter are relevant to research problems of several disciplines. Examples of courses taught and authors considered are: 3-301: Law and social change (Maine, Holmes, Weber). 3-302: Idea of race in American thought and practice. 3-303: Culture wholes.
- 3-401 (81). COMPARATIVE STUDIES IN FEUDALISM.** (3 cr; prereq §) Bachrach
Seminar to investigate the phenomena which have been called feudal. Various institutions in Western Europe, Eastern Europe, the Near East, Africa, and Asia will be studied.
- 3-402 (82). TECHNOLOGY AND SOCIETY.** (3 cr) Anderson
An examination of the impact of technology on society as seen by engineers, scientists and social scientists. The social problems associated with economic growth such as environmental consequences, the arms race, food and fertilizers and population growth will be explored. Alternative strategies for meeting the problems will be examined.
- 3-403/3-404. MODERN ISRAEL.** (3, 3 cr; prereq 3-403 for 3-404) Roshwald
This sequence of courses presents and analyzes modern Israel, its historical origins and political and social institutions. The second course is a pro-seminar.
- 3-503 (93). URBAN CRISIS.** (5 cr; prereq Δ)
An examination of the effects of white racism and projections of the image of white supremacy on the socio-economic and political life chances of black people in America followed by examination of the nature of and basis for social unrest in Minneapolis. Will combine classroom work and field experience.
- 3-507 (97). SLAVERY IN THE AMERICAS.** (4 cr) Spear, Isaacman, McCrary, Schwartz
This course will have both a substantive and a methodological objective. It will trace the origins and development of the institutions of slavery in the New World and the impact of slavery on life and culture in the Americas. It will provide an introduction to the comparative method of historical inquiry.
- 3-970 (70). DIRECTED READINGS.** (1-5 cr) Staff

SOCIAL WORK (SW)

The major in Social Welfare leading to the B.A. degree is a liberal education program designed to prepare for graduate professional social work education. It will also qualify one for employment in the field in those positions where the bachelor's degree is the qualifying educational requirement.

Professional study in the School of Social Work is at the graduate level. The undergraduate major in social welfare is recommended as preparing for entry into graduate professional social work education, but admission is not limited to social welfare majors. For entrance requirements see the *Graduate School Bulletin* and the *School of Social Work Bulletin*.

● Major Sequence in Arts College—

1. Lower Division Requirements:

- A. Statistics—an introductory course with lab (Soc 3-801 recommended)
- B. Humanities 1-004 or 3-004
- C. Social Science courses prerequisite to Upper Division courses in program planned. (This requires at least Psy 1-001/1-002†, Soc 1-001, Pol 1-001/1-002, Econ 1-014/1-015 or 1-001/1-002 or 3-001/3-002, plus one introductory course in either anthropology, geography or history depending on Upper Division concentration selected.)

2. Social Science Requirements:

Two 12 credit concentration areas in Upper Division courses in each of two of the following eight departments (may overlap with required courses):

Anthropology, Economics, Geography, History, Political Science, Psychology, Child Psychology, Sociology

(A 12 credit concentration in another subject area may be taken for one of these concentrations with permission of adviser when it is shown that it has relevance to social welfare and the future plans of individual student; for example, Afro-American Studies, Humanities or Social Science.)

3. Required Courses—(may aid in fulfilling concentration areas):

- A. SW 3-001 (5 cr)
SW 3-005 (4 cr)
SW 3-002 (3 cr)
SW 3-010 (majors only) (3 or more cr by ar)
- B. Social Theory, one of the following six:
Soc 5-701, 5-305, 5-705; Pol 5-659, 5-661, 5-662 (3 cr)
- C. Social Organization and Process, one of the following two: Soc 5-401, 5-405 (3 cr)
- D. Social History, one of the following nine: Hist 3-821, 3-822, 3-823, 3-864, 3-865, 5-371, 5-372, 5-373; Soc 5-951 (3 cr)
- E. Culture and Personality:
CPsy 3-301 (3 cr)
Psy 5-604/5-605 (6 cr)
One of the following five: Soc 5-201, Psy 5-201, 5-211; Anth 5-361, 5-381 (3 cr)
- F. The Family, one of the following four: CPsy 5-339 (prereq CPsy 5-331), Soc 5-501, 5-505, 5-511 (3 or 4 cr)

Total Credits—39 or 40

Social Work courses offered, but not required:

SW 3-970 Directed Study (prereq majors only) (1-9 cr ar)

UPPER DIVISION COURSES

- 3-001f,w,s (90). AMERICAN SOCIAL WELFARE. (5 cr; prereq Soc 1-001) Tweedy, Wiebler
Analysis of American social welfare as a basic social institution in American society.
- 3-002f,w,s (124). GOVERNMENT AND SOCIAL WELFARE. (3 cr; prereq 3-001, 3-005 or †) Compton
Philosophy, policy development, and administration through government of social wel-

Course Offerings and Major Sequences

fare programs including social insurance, public assistance, housing, welfare services and like public programs.

3-005f,w,s (91). INTRODUCTION TO SOCIAL WORK PROCESSES. (4 cr; prereq 3-001 or #) Tweedy, Wiebler

Analysis of the nature of Social Work helping processes in service to individuals, groups or communities.

3-010f,w,s (95-96). FIELD EXPERIENCE. (1-6 cr; prereq sr, 3-005; majors only and #) Broeker

3-020Hf,w,s (99). HONORS SEMINAR. (1-6 cr; majors only selected by adviser) Staff

3-970f,w,s (97-98). DIRECTED STUDY. (1-9 cr; prereq #; majors only) Staff

5-010f,w,s (100). SPECIAL TOPICS. (3 cr; prereq consent of adviser or #, sr or grad) Staff
A study in depth of a selected special topic of concern to the field of social work.

SOCIOLOGY (Soc)

● **Major Sequence in Arts College**—Students majoring in Sociology will be expected to take courses as follows:

Required Background Courses:

A. Soc 1-005 and 1-006

B. Suggested Lower Division electives: Soc 1-002

Requirements:

A. Methods: Soc 3-801, 3-802, 3-803

B. Theory: One of the following: Soc 5-305, 5-701, 5-705, 5-711

C. 21 additional cr in Upper Division sociology courses. This can include any of the courses listed under B above that have not been taken as requirements, or any other Upper Division sociology courses. The following are suggested electives: Soc 3-101, 5-141, 5-151, 5-205, 5-405, 5-411, 5-501, 5-551, 5-601, 5-651, 5-755, 5-855, 5-951, 5-952.

Note—Students entering Upper Division prior to Spring Quarter 1971, should contact the Sociology major adviser (Room 80, Wilson Library) about their major requirements.

Sociology 3-801, 3-802, 3-803 sequence should be taken during the sophomore year. The requirements in B should be taken during the junior year.

Honors Program—A departmental honors program is open to students who have a 3.00 grade point average overall and a 3.00 grade point average in courses in, or prerequisites to, the major. The student may enroll in the honors section of courses offered each quarter as designated in the *Class Schedule*. He also must complete 6 cr in Soc 3-970 for the honors thesis. For information and admission to the program, consult Professor Roy E. Rickson.

Criminal Justice Studies—Students may take a specialization in Criminal Justice with a major in Sociology. Requirements for this specialization are specified by the Criminal Justice Studies Department.

GENERIC COURSES

1-001 (1). INTRODUCTION TO SOCIOLOGY. (3 cr)

A survey of the main substantive fields of sociology for nonprospective sociology majors. Illustrative material drawn from current social problems areas.

1-002 (2). AMERICAN COMMUNITY. (3 cr) Kennedy, Martindale

Sociological analysis of modern American society. Topics include distribution of population, urban-rural differences, social factors in business systems, occupational groups, determination of social status, and minority group adjustment.

1-004 (1D). INTRODUCTION TO SOCIOLOGY DISCUSSION. (1 cr)

An optional discussion course taken concurrently with Sociology 1-001. Discussion sections will each have approximately forty students.

- 1-005 (48). PRINCIPLES OF SOCIOLOGY I.** (4 cr; prereq prospective major or major in sociology)
An integrated two-quarter course (with Sociology 1-006) required of prospective sociology majors usually taken during the freshman year. The course is focused upon the basic concepts and variables used in the analysis of individual-to-group relationships and the organization and structure of social groups. The course will consist of three lecture and one discussion sections per week. It is recommended that 1-005 be taken prior to 1-006.
- 1-006 (49). PRINCIPLES OF SOCIOLOGY II.** (4 cr; prereq prospective major or major in sociology) A continuation of Sociology 1-005 described above.

CRIMINOLOGY AND DEVIANCE

- 3-101 (53). ELEMENTS OF CRIMINOLOGY.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Clark, Finestone, Ward
General survey of field of criminology.
- 5-105 (100). CONTEMPORARY PENOLOGY.** (3 cr; prereq 1-001 or 1-005, 1-006, 3-101, or #) Ward
Prisons as social organizations; description and evaluation of current treatment programs for adult offenders.
- 5-111 (101). SOCIOLOGY OF DEVIANT BEHAVIOR.** (3 cr; prereq 1-001, 1-005, 1-006, 3-101, or #) Finestone
Examination of the various sociological conceptions of the nature of deviant behavior, the social processes associated with the careers of deviants, and the relationship of deviancy to the problems of social control.
- 5-115 (102). ADULT PAROLE AND PROBATION.** (3 cr; prereq 1-001 or 1-005, 1-006, 3-101, or #) Finestone
Critical examination of problems and practices in supervision of adult criminals.
- 5-121 (103). LAW AND LEGAL SYSTEM FOR CORRECTIONAL AND SOCIAL WORKERS.** (3 cr)
Study of law and judicial process for social workers, particularly those engaged in correctional field.
- 5-125 (104). POLICE PROBLEMS AND PRACTICES IN THE UNITED STATES.** (3 cr; prereq 1-001 or 1-005, 1-006, 3-101, or #) Clark
Personnel, organization, and public relations of police forces, with special attention to successful techniques of integrating police work with other community agencies.
- 5-131 (105). INSTITUTIONAL TREATMENT OF JUVENILE DELINQUENTS: PROBLEMS AND PRACTICES.** (3 cr)
Current problems of institutional treatment of juvenile offenders and contributions of different professions to treatment.
- 5-138 (110). ISSUES IN THE ADMINISTRATION OF CRIMINAL JUSTICE.** (4 cr; prereq 3-101) Ward
By analyzing a number of issues facing the police, prosecutors, defense attorneys, courts and correctional agencies, this course will seek to focus attention upon the process of the administration of criminal justice.
- 5-141 (118). DELINQUENT BEHAVIOR.** (3 cr; prereq 3-101) Clark, Monachesi
Critical analysis of nature of delinquent behavior and its "causes"; consideration of help that understanding of causes can give to its modification and its prevention.
- 5-145 (119). MODERN AGENCIES FOR CONTROL OF JUVENILE DELINQUENCY.** (3 cr; prereq 3-101 and 5-141)
Functions of school, of welfare, casework, and groupwork agencies, of juvenile bureau in police departments, juvenile court, detention home, probation services, clinics, and integrated state agencies like Minnesota Youth Conservation Commission in prevention and modification of delinquent behavior.

SOCIOLOGY OF RELIGION

- 5-151 (142). RELIGION AS A SOCIAL INSTITUTION.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Johnson
Structure and function of religious organizations in various types of societies, nature of religious leadership, type of religious participation, and relationship of religion to other social institutions.

Course Offerings and Major Sequences

SOCIAL PSYCHOLOGY

- 5-201 (120). INTRODUCTION TO SOCIAL PSYCHOLOGY.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Stone, Spitzer
Research and theory regarding relation of individual social groups. Emphasis on socialization processes; effects of social interaction and isolation; individual behavior under conditions of social organization and disorganization; cultural influence and its limits.
- 5-201H (120H). HONORS COURSE: INTRODUCTION TO SOCIAL PSYCHOLOGY.** (3 cr; prereq #) Stone.
For description, see 5-201.
- 5-205 (121). SYMBOLIC INTERACTION.** (3 cr; prereq 5-201 or #) Stone
Methods of acquiring knowledge in social psychology; analysis of outstanding pieces of research. Social psychology of small groups, mass behavior, and making of political and economic choices. A major aim is to familiarize student with current thinking and research in this field in light of concepts and theories presented in introductory course in social psychology.
- 5-211 (135). SOCIAL PROCESSES IN SMALL GROUP SETTINGS.** (3 cr; prereq 5-201 or #)
Introduction to small group research and theory focusing on both laboratory and non-laboratory investigation of areas such as interpersonal exchange, communication structures, status and power relations, coalition formation, reference groups, role differentiation, group uniformity, social influence, and problem solving behavior. Laboratory to be arranged.

SOCIAL CHANGE AND SOCIAL MOVEMENTS

- 5-301 (124). SOCIAL MOVEMENTS IN A CHANGING SOCIETY.** (3 cr; prereq 1-001 or #, or 1-005, 1-006)
Examination of factors underlying social change in modern mass society. Consideration of recent research on social movements, reform and revolution, culture contact, impact of rapid technological change. The individual and social structure under conditions of rapid social change.
- 5-305 (171). SOCIAL LIFE AND CULTURAL CHANGE.** (3 cr; prereq 1-001 or 1-005, 1-006, or #) Martindale
Theories of social change; particular attention to their methodological problems. Materials drawn from comparative social thought and structure of antiquity utilized as basic data for analysis.
- 5-311 (122). SOCIOLOGY OF CONFLICT.** (3 cr; prereq 1-001 or #, or 1-005, 1-006)
Manifest forms of antagonism among groups of persons; causes of conflict; methods of resolving through accommodations; role of conflict and social change.
- 5-315 (149). LATIN-AMERICAN SOCIETIES IN TRANSITION.** (3 cr; prereq 10 cr in sociology, economics, or political science, or #) Ellenbogen, Menanteau
Relationship of population, technology and organizational structure to levels of modernization among Latin American nation states. Attention given to differentiation, diffusion, innovation and social conflict as precipitants of social change.

POPULAR CULTURE AND PUBLIC OPINION

- 5-351 (150). SOCIOLOGY OF POPULAR CULTURE.** (3 cr; prereq 15 cr in sociology)
Social preconditions and social effects of popular culture. Popular vs. nonpopular culture with an analysis of selected popular arts.
- 5-355 (125). OPINION AND COMMUNICATION: SOCIAL FACTORS.** (3 cr; prereq sr, 1-001 or 1-005, 1-006 or 5-201 or Psy 5-201 or #)
Examination of processes of opinion formation and change in relation to personality and social structure will lay groundwork for analysis of flow of public communications through society and impact of selected types of mass communication on particular audiences.

SOCIAL ORGANIZATION AND SOCIAL STRUCTURE

- 5-401 (140). SOCIAL ORGANIZATION.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Haurek
Organization and structure of social groups; basic culture patterns of economic, political and social institutions. Integration and disintegration of social groups and institutions. Essentials of social dynamics.
- 5-401H (140H). HONORS COURSE: SOCIAL ORGANIZATION.** (3 cr; prereq #) Hall
For description, see 5-401.

- 5-405 (144). **SOCIAL STRATIFICATION AND MOBILITY.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Fulton, Nelson
Analysis of form and content of hierarchical arrangements. Relationship of hierarchical arrangements to problems of social order and individual behavior.
- 5-405H (144H). **HONORS COURSE: SOCIAL STRATIFICATION AND MOBILITY.** (3 cr; prereq #)
For description, see 5-405.
- 5-411 (146). **FORMAL ORGANIZATIONS.** (3 cr; prereq 1-001 or 1-005, 1-006 and 15 cr in sociology, psychology, political science, or economics) Rickson
Sources, types and consequences of variations in organizational structures and functions. Varying organizational arrangements as they affect and are affected by changes in input and output. Bureaucracy and its impact from a comparative perspective.
- 5-411H (146H). **HONORS COURSE: FORMAL ORGANIZATIONS.** (3 cr; prereq #) Hall
For description, see 5-411.
- 5-415 (151). **COMPARATIVE SOCIAL ORGANIZATIONS.** (3 cr; prereq 20 cr in sociology, economics, or political science, or #)
Consideration of demographic and ecological characteristics, stratification system, institutional organization, and forms of association in several modern nations other than United States.
- 5-421 (147). **OCCUPATIONAL SOCIOLOGY.** (3 cr; prereq 6 cr in sociology or #) Hall
Individual motivations and reactions to work; nature of professions and other occupational types; relations between occupational and organizational norms and values, relationships between occupations and social structure, including stratification system, family, political system, and technological change; changes in composition of labor force.

FAMILY SOCIOLOGY

- 5-501 (141). **THE FAMILY.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Johnson
Evolution of family, development of unity or disunity, roles of the several members of family, methods of investigation of family.
- 5-501H (141H). **HONORS COURSE: THE FAMILY.** (3 cr; prereq #) Tallman
For description, see 5-501
- 5-505 (126). **FAMILY DEVELOPMENT.** (4 cr; prereq 1-001, or 1-005, 1-006, 5-201, CPsy 3-301 or #) Aldous, Hill, Tallman
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.
- 5-511 (154). **COMPARATIVE FAMILY ORGANIZATION.** (3 cr; prereq 1-001, or 1-005, 1-006, Psy 1-001) Aldous, Reiss
Comparison of family organization and modes of functioning in selected major world civilizations. Emphasis on interrelations of family with economic system and urbanization, and family influences on personality formation.
- 5-515 (137). **SOCIOLOGY OF FAMILY FORMATION.** (3 cr; prereq 1-001 or 1-005, 1-006) Reiss
Analysis of courtship structure in American society by class, ethnicity, religion, and history. Courtship and other institutions.

DEMOGRAPHY

- 5-551 (112). **WORLD POPULATION PROBLEMS.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Kennedy
Population policy, both historical and present day, in Europe, Asia, and other selected areas but with special emphasis on United States. Some discussion is given to field of population and power politics.
- 5-555 (111). **POPULATION THEORY.** (3 cr; prereq 5-551 or #) Kennedy
Emphasizes cultural and social phases of population change; particular reference to birth rates, death rates, and migration. Implications of population change.
- 5-555H (111H). **HONORS COURSE: POPULATION THEORY.** (3 cr; prereq #) Kennedy
For description, see 5-555.

URBAN SOCIOLOGY

- 5-601 (145). **URBAN SOCIOLOGY.** (3 cr; prereq 1-001 or 1-005, 1-006 or #) Stone, T. Anderson

Course Offerings and Major Sequences

Introduction to the study of cities; urban ecology; urban institutions and urban way of life.

- 5-605 (156). URBANIZATION AND SOCIAL POLICY.** (3 cr; prereq 5-601 or §) Cooperman
An examination of contemporary changes in urban processes that are considered problematic and the responses and policies of public groups. Analysis of interrelationships of social, cultural, economic, political factors in development of urban problems. Study of models of urban systems and social policy formation. Methods of social cost analysis and formation of policy alternatives.
- 5-611 (106). PLANNING.** (3 cr; prereq sr)
(Same as Arch 5-132) Social, economic, political, geographic, and technical phases of modern city planning.

RURAL SOCIOLOGY

- 1-651 (14). RURAL SOCIOLOGY.** (3 cr)
Presentation of factual data necessary to an understanding of problems of rural social life.
- 1-652 (14A). RURAL SOCIOLOGY.** (3 cr; for AFHE students)
- 5-651 (162). RURAL SOCIAL INSTITUTIONS.** (3 cr; prereq 1-001 or 1-005, 1-006 or §) Donohue
Factors in the rural environment which condition the functioning of rural social institutions, including family, school, church, local government, health, and welfare.
- 5-655 (160). RURAL COMMUNITY ORGANIZATION.** (3 cr; prereq 1-001 or 1-005, 1-006 or §) Donohue
History, structure, and place of rural community in American society; analysis of community demography, ecology, stratification, urbanization, and processes of cooperation and conflict.
- 5-661 (161). RURAL COMMUNITY ANALYSIS.** (3 cr; especially for all persons interested in rural community organization, rural teaching, extension work, and related fields; prereq 1-001 or 1-005, 1-006, sr or §) Donohue
Emphasis on tools, techniques, and methods of making community field studies.
- 5-671 (148). COMPARATIVE RURAL SOCIETIES: LATIN AMERICA.** (3 cr; prereq 10 cr in sociology, economics or political science or §) Ellenbogen, Menanteau
Analysis of social and cultural change in Latin America. Consideration given to demographic and ecological characteristics, institutional structure and its accompanying associations, linkages with "outside" and "world-view."
- 5-675 (164). WORLD FOOD SUPPLY PROBLEMS.** (3 cr, §AgEc 5-790, §HE 5-381, §IPa 5-220, §VM 5-790; prereq maj in agriculture, veterinary medicine, nutritional sciences, social science field or §...grad students by Δ only)
A multidisciplinary approach will examine the social, economic, and technical problems of feeding the world's growing population. Principles will be sought from the social and economic sciences, the plant sciences, the animal sciences, and the nutritional sciences for their application to food problems.

SOCIAL THEORY

- 5-701 (170). ANALYTICAL SOCIAL THEORY.** (3 cr; prereq 1-001 or 1-005, 1-006 or §) Martindale
Major problems of sociological theory; main types of sociological theory (positivistic, rationalistic, idealistic); major theoretical concepts.
- 5-705 (172). BACKGROUNDS OF MODERN SOCIAL THOUGHT.** (3 cr; prereq 1-001 or 1-005, 1-006 or §) Martindale
Survey of major trends of social thought from Renaissance to 19th century; special attention to those factors contributing to origin of sociology.
- 5-711 (173). ELEMENTS OF SOCIOLOGICAL ANALYSIS.** (3 cr; prereq 9 cr in sociology)
An examination and analysis of the premises upon which social theories are developed. Examination and analysis of the construction of social theory.

SOCIOLOGY OF POLITICAL AND LEGAL INSTITUTIONS

- 5-755 (155). SOCIAL STRUCTURE AND POLITICAL BEHAVIOR.** (3 cr; prereq 1-001 or 1-005, 1-006) Tallman
Analysis of the structural and ideological conditions influencing the legitimation of political institutions and the relationships of this process to political participation, political apathy, and the rise of mass movements.

METHODOLOGY

- 1-801 (10). SOCIOLOGY LABORATORY.** (2 cr; prereq 1-001 or ¶1-001, or 1-005, 1-006)
Introduction to empirical research in sociology. Weekly laboratory periods to illustrate content of sociology, including stratification, the family, ecology, industrial sociology, delinquency, and political sociology.
- 3-801 (80). SOCIOLOGICAL METHODS I: DESCRIPTIVE STATISTICS.** (3 cr, §45; prereq some beginning algebra recommended; 2 hrs lect, two 1-hr labs) McTavish
Descriptive statistics in sociological analysis. Graphs, rates, averages, dispersion, correlation, multi-variate cross-tabulations.
- 3-801H (80H). HONORS COURSE: SOCIOLOGICAL METHODS I: DESCRIPTIVE STATISTICS.** (3 cr, §45; prereq §...some beginning algebra recommended) McTavish
Honors students will attend regular Soc 3-801 lecture sections, and two special one hour Honors labs per week.
- 3-802 (81). SOCIOLOGICAL METHODS II: STATISTICAL INFERENCE.** (3 cr, §45; prereq 3-801 or equiv; 2 hrs lect, two 1-hr labs) McTavish
Statistical inferences, probability, hypothesis tests, use of statistical reasoning in analysis of sociological data.
- 3-802H (81H). HONORS COURSE: SOCIOLOGICAL METHODS II: STATISTICAL INFERENCE.** (3 cr, §45; prereq 3-801H or equiv) McTavish
Honors students attend Soc 3-802 lecture sections, and two special one hour Honors labs per week.
- 3-803 (82). SOCIOLOGICAL METHODS III: RESEARCH METHODS.** (3 cr; prereq 3-801 and 3-802 or equiv or §) Bohrnstedt, Nelson
Survey of data collection methods, including advantages of major methods and limitations when applied to specific types of problems.
- 5-801 (116). COMPUTER USAGE IN SOCIAL RESEARCH.** (4 cr; prereq 3-801, 3-802, 3-803, 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; selected problems of computer usage in sociology.
- 5-814/5-815†, 5-816 (184-185, 186). FIELD WORK AND LABORATORY TRAINING IN SOCIAL RESEARCH.** (3-3†, 3 cr; prereq 3-802 or equiv)
Direct experience with variety of research techniques.
- 5-831/5-832/5-833 (191-192-193). MEASUREMENT.** (3-3-3 cr; prereq 3-803 or 5-804H or equiv) R. Anderson, Tallman
The nature of measurement and its role in theory and research, measurement models and techniques of scaling, observational techniques in various research settings, special problems in measurement analysis.

SOCIOLOGY OF HEALTH AND HEALTH CARE

- 5-855 (152). SOCIOLOGY OF MEDICINE AND MEDICAL INSTITUTIONS.** (3 cr; prereq 1-001 or 1-005, 1-006 or §) Litman
Social factors associated with incidence of physical and mental illness and its treatment. Social organization of medical institutions. Public needs and medical services. Sociology of aging, and social problems of aged.

OTHER COURSES

- 3-970 (97-98-99). TUTORIAL AND HONORS WORK IN SELECTED FIELDS.** (3-3-3 cr; prereq consent of major adviser in sociology)
- 5-951 (123). MINORITY GROUP RELATIONS.** (3 cr; prereq 1-001 or 1-005, 1-006 or §)
Finestone, Rose
An analysis of systems of ethnic stratification with a special focus upon race relations in American society.
- 5-952 (134). YOUTH IN MODERN SOCIETY.** (3 cr; prereq 1-001 or 1-005, 1-006 or §)
Clark
An analysis of the role of youth in advanced societies; youth as a social entity; functions of youth in industrial societies generally with emphasis on their roles in family, education, politics and government, economy and work world, welfare and religion; youth organizations, social movements and subcultures; emphasis on empirical research and cross-cultural perspective.

Course Offerings and Major Sequences

- 5-953 (195). **SOCIOLOGY OF EDUCATION.** (3 cr; prereq 1-001 or 1-005 or 1-006 or #)
Clark, Harkins
(Same as HEd 5-190) Advanced studies in social aspects of education including school as socialization process, social structure of education, role of school in social change, and others. Emphasis on theory and empirical research.

SOUTH ASIAN LANGUAGE AND AREA STUDIES

The following departments offer courses in the program of the Center for South Asian Language and Area Studies: Anthropology, Art History, East Asian Languages, Geography, History, Music, Philosophy, Political Science, and South Asian Languages.

See respective departments for course descriptions.

Bengali (Ben)

● Major Sequence for B.A.—Ben 3-031/3-032/3-033, 5-031/5-032/5-033, and 12 cr from courses with new number prefixes of 5.

Required Background Courses—Indc 1-501. In addition, Ben 3-201, Indc 3-201 and 3-203 are recommended.

LOWER DIVISION COURSES

1-101f/1-102w/1-103s (1-2-3). **BEGINNING BENGALI.** (5-5-5 cr)

UPPER DIVISION COURSES

3-031f/3-032w/3-033s (51-52-53). **INTERMEDIATE BENGALI.** (5-5-5 cr; prereq 1-103)

3-201 (57). **SURVEY OF BENGALI LITERATURE.** (3 cr; prereq 1-102, 1-103 or #)
Lectures, discussion, and reading of representative material.

3-970 (91H, 92H, 93H). **DIRECTED STUDY.** (1-5 cr; prereq #)

5-031f/5-032w/5-033s (101-102-103). **ADVANCED BENGALI.** (3-3-3 cr; prereq 3-033)
Readings of short stories and other literature in class. Class work consists of discussion related to material.

5-201f/5-202w/5-203s (161-162-163). **BENGALI FICTION OF THE 19TH AND 20TH CENTURIES.** (3-3-3 cr; prereq 5-033 or #)

Critical reading of major Bengali novelists from Bankimcandra to selected contemporary authors with emphasis on the study of the development of techniques of fiction in modern Bengali literature.

5-301 (130). **BENGALI POETRY.** (3 cr; prereq 3-033 or #)

A survey of Bengali poetry from the Vaisnava period to contemporary poetry with sample readings from selected poets.

5-401/5-402/5-403 (171-172-173). **MAJOR BENGALI POETS OF THE 19TH AND 20TH CENTURIES.** (3 cr per qtr; prereq Ben 5-033 or #)

Critical reading of the major poets of Bengal from Madhusudan and Rabindranath to Vishnu Dey and Buddhadeva Bose.

5-701 (106). **THE BENGALI LANGUAGE.** (3 cr; prereq 3-033 or #)

Designed for students of Bengali with a special interest in the linguistic description of the language and students of linguistics or related fields interested in the application of a particular grammatical theory to Bengali.

5-970 (151-152-153). **DIRECTED STUDY.** (1-5 cr; prereq #)

The course is designed to direct the readings of individual students in specialized areas preparatory to research.

5-990 (191, 192, 193). **RESEARCH.** (1-3 cr per qtr; prereq #)

Advanced course for student seeking guidance in reading or analysis of specialized material.

Gujarati (Guj)

LOWER DIVISION COURSES

1-101f/1-102w/1-103s (1-2-3). **BEGINNING GUJARATI.** (5-5-5 cr)

UPPER DIVISION COURSES

- 3-031f/3-032w/3-033s (51-52-53). **INTERMEDIATE GUJARATI.** (5-5-5 cr; prereq 1-103)
- 3-970. **DIRECTED STUDY.** (1-5 cr; prereq #)
- 5-031f/5-032w/5-033s (101-102-103). **ADVANCED GUJARATI.** (3-3-3 cr; prereq 3-033)
Reading of short stories and other literature in class. Discussion related to the material.
- 5-701 (106). **THE GUJARATI LANGUAGE.** (3 cr; prereq 3-033 or #)
The course will introduce the students to the main features of the structure of the Gujarati language and its history.
- 5-990 (191, 192, 193). **RESEARCH.** (1-3 cr per qtr; prereq #)
Advanced course for student seeking guidance in reading or analysis of specialized material.

Hindi (Hndi)

- **Major Sequence for B.A.—Hndi 3-031/3-032/3-033, 3-801, 5-031/5-032/5-033, 5-011/5-012/5-013, plus 3 cr from courses with the new number prefixes of 5.**
Required Background Courses—Indc 1-501, 1-502, 1-503.

LOWER DIVISION COURSES

- 1-101f (1). **BEGINNING HINDI.** (5 cr; class meets seven times per wk [5 hrs with speaker of Hindi and 2 hrs with linguist] in addition to assignments at language lab)
- 1-102w (2). **BEGINNING HINDI.** (5 cr; prereq 1-101 or #; class meets seven times per wk [5 hrs with speaker of Hindi and 2 hrs with linguist] in addition to assignments at language lab)
- 1-103s (3). **BEGINNING HINDI.** (5 cr; prereq 1-102 or #; class meets seven times per wk [5 hrs with speaker of Hindi and 2 hrs with linguist] in addition to assignments at language lab)

UPPER DIVISION COURSES

- 3-031f (51). **INTERMEDIATE HINDI.** (5 cr; prereq 1-103 or #)
Intended to provide sound foundation in Hindi that can be utilized either for reading or speaking. Emphasis on grammatical proficiency rather than social use of language.
- 3-032w (52). **INTERMEDIATE HINDI.** (5 cr; prereq 3-031 or #)
- 3-033s (53). **INTERMEDIATE HINDI.** (5 cr; prereq 3-032 or #)
- 3-801 (57). **SURVEY OF HINDI LITERATURE IN TRANSLATION.** (3 cr)
- 3-970 (91H, 92H, 93H). **DIRECTED STUDY.** (1-5 cr; prereq #)
- 5-011f (125). **HINDI COMPOSITION.** (2 cr; prereq 5-033 or #)
Grammatical and literary difficulties discussed; material selected from novels, literary essays, newspapers, and magazines.
- 5-012w (126). **HINDI COMPOSITION.** (2 cr; prereq 5-011 or #)
- 5-013s (127). **HINDI COMPOSITION.** (2 cr; prereq 5-012 or #)
- 5-031f (101). **ADVANCED HINDI.** (3 cr; prereq 3-033 or #)
Reading short stories and available literature in Hindi. Discussion related to material.
- 5-032w (102). **ADVANCED HINDI.** (3 cr; prereq 5-031 or #)
- 5-033s (103). **ADVANCED HINDI.** (3 cr; prereq 5-032 or #)
- 5-301, 5-302, 5-303 (151, 152, 153). **THE HINDI SHORT STORY.** (3,3,3 cr; prereq 5-031 or #)
A survey of major modern writers. Representative works will be read and discussed. Each author will be considered in terms of his socio-political context as well as his strictly literary function.
- 5-501f (121). **READINGS IN HINDI LITERATURE.** (3 cr; prereq 5-033 or #)
Reading and discussion of writers and material selected.
- 5-502 (122). **READINGS IN HINDI LITERATURE.** (3 cr; prereq 5-501 or #)
- 5-503 (123). **READINGS IN HINDI LITERATURE.** (3 cr; prereq 5-502 or #)
- 5-701 (106). **THE HINDI LANGUAGE.** (3 cr; prereq 3-031 or #)

Course Offerings and Major Sequences

The course will introduce the students to the main features of the structure of the Hindi language and its history.

- 5-702 (107). HINDI SYNTAX.** (3 cr; prereq 3-031 and 6 cr in linguistics or §)
The study of the syntactic structure of Hindi both from assigned readings on that topic and through elicitation of material from a speaker of Hindi. Hypotheses bearing on the syntactic structure will be tested on the speaker.
- 5-703 (108). SEMANTIC STRUCTURE OF HINDI.** (3 cr; prereq 1-103 or § . . . 6 cr in linguistics, logic or anthropology recommended)
- 5-990 (191, 192, 193). RESEARCH.** (1-3 cr per qtr; open to students with special interests; prereq 5-033 or §)
Advanced-level course for students seeking guidance in reading specialized material in his field. This could include Lok Sabha reports, etc.

Indic (Indc)

LOWER DIVISION COURSES

- 1-501f, 1-502w, 1-503s (1, 2, 3). SURVEY OF INDIAN CIVILIZATION.** (3,3,3 cr; prereq 1-501 for 1-502 and 1-503)
1-501: Introduction to India: Introduction to contemporary civilization, considered in light of its development. 1-502: Social and economic life. 1-503: Sources of culture: Hindu, Buddhist, and Muslim contributions to civilization. Special attention to cultural contributions of selected regions, e.g., Bengal, Tamilnad, Maharashtra.
- 1-504f/1-505w, 1-506s (10A-10B, 10C). BASIC TEXTS OF HINDUISM AND BUDDHISM.** 3-3,3 cr
Selected readings in translation of most influential classics and medieval Indian texts: Vedas, Upanishads; Mahabharata. Bhagavatapurna; sectarian devotional literature.

UPPER DIVISION COURSES

- 3-201/3-202 (55A-B). SURVEY OF ANCIENT INDIAN LITERATURE.** (3-3 cr; prereq 1-505 or §)
Lectures, reading of representative material and class discussion. Study of different types of literature: Vedas, Upanishads, epics, classical drama and poetry and roles played by each in different periods of Indian history.
- 3-203 (56). SURVEY OF MIDDLE AND MODERN INDIAN LITERATURE.** (3 cr; prereq 1-506 or §)
Lectures and class discussion based on readings of representative material. Social and religious roles of various kinds of materials will be emphasized.
- 3-504/3-505, 3-506 (70A-B,C). BASIC TEXTS OF HINDUISM AND BUDDHISM.** (3-3,3 cr, §1-504/1-505, 1-506)
- 3-970. DIRECTED STUDY.** (1-5 cr; prereq §)
- 5-090 (194, 195, 196). INSTRUCTION IN A SOUTH ASIAN LANGUAGE.** (3-5 cr; prereq §)
Instruction in a South Asian language not regularly offered in the Department. Offered when qualified instructors are available to meet the needs of the students.
- 5-201 (110). SURVEY OF SANSKRIT LITERATURE.** (3 cr; prereq 6 cr of literature or §)
- 5-202 (170). SURVEY OF MODERN INDIAN LITERATURE WRITTEN IN ENGLISH.** (3 cr; prereq at least 6 cr in literature and 1-502, 1-503 or 1-505)
Study of literature written by Indians in English from the mid-19th century through era of political awakening and into era of independence.
- 5-301 (124). ART OF THE FILM—INDIA.** (3 cr, §Arth 5-920; prereq §)
History of Indian films; a mass art form and its relation to cultural factors.
- 5-302 (136). THEATRE AND DRAMA IN ANCIENT INDIA.** (3 cr, §Th 136)
- 5-401 (137). THE NATYASASTRA.** (3 cr, §Th 137)
An intensive study of the theory and practice of ancient Hindu Theatre.
- 5-701 (130). HINDU GRAMMATICAL THOUGHT.** (3 cr; prereq §; offered when feasible)
- 5-702 (150). CONTRASTIVE ANALYSIS OF HINDI AND ANOTHER INDIAN LANGUAGE.** (3 cr; prereq Hindi 3-031, Ben 3-031, Guj 3-031, or Mar 3-031)
Comparison of syntactic structures of two Indian languages.
- 5-801 (111). INTRODUCTION TO SANSKRIT POETICS.** (3 cr; prereq 3-203 or §)

5-802 (138). WESTERN APPROACHES TO EASTERN THEATRE. (3 cr, §Th 138)
Study of historical and critical approaches of major Western dramatists and theorists to theatre of the East: Artaud, Brecht, Langer, Strindberg, Yeats, etc.

5-970 (190). DIRECTED READING. (2-3 cr; prereq #)

Attention is called to the following courses: Philosophy 5-801, 5-802, 5-803, 5-804, 5-805, 5-806.

Marathi (Mar)

LOWER DIVISION COURSES

1-101f/1-102w/1-103s (1-2-3). BEGINNING MARATHI. (5-5-5 cr)

UPPER DIVISION COURSES

3-031f/3-032w/3-033s (51-52-53). INTERMEDIATE MARATHI. (5-5-5 cr; prereq 1-103)

3-701 (75). STRUCTURE OF MARATHI. (3 cr; prereq Ling 3-011, Anth 5-411 or #)
Partly in lecture, partly elicited from a Marathi speaker. Laboratory technique is used to demonstrate and verify hypotheses about structure of language.

3-970. DIRECTED STUDY. (1-5 cr; prereq #)

5-031f/5-032w/5-033s (101-102-103). ADVANCED MARATHI. (3-3-3 cr; prereq 3-033)
Reading of short stories and other literature in class. Class work will consist of discussion related to material.

5-701 (106). THE MARATHI LANGUAGE. (3 cr; prereq 3-033 or #)
The course will introduce students to the main features of the structure of the Marathi language and its history.

5-990 (191, 192, 193). RESEARCH. (1-3 cr per qtr; prereq #)
Advanced course for student seeking guidance in reading or analysis of specialized material.

Sanskrit (Skt)

● Major Sequence for B.A.—Skt 3-201/3-202/3-203, 3-204, 3 cr from courses with new number prefixes 3, 5-201/5-202/5-203, and 9 cr from courses with new number prefixes of 5.

Required Background Courses—One from the following group of courses is recommended: Indc 1-501, 1-502, 1-503, 1-504/1-505, 1-506.

1-201f/1-202w/1-203s (1-2-3). BEGINNING SANSKRIT. (5-5-5 cr; prereq ¶1-204f)
Introduction to script, introduction to grammar and reading, recitation.

1-204f (5). SANSKRIT SANDHI. (2 cr; ¶1-201 required)
For description, see 3-204.

3-201f/3-202w/3-203s (51-52-53). BEGINNING SANSKRIT. (4-4-4 cr; prereq ¶3-204)

3-204f (55). SANSKRIT SANDHI. (2 cr; prereq 1-204 . . . ¶3-201f required)
Operation of sandhi in Sanskrit from linguistic viewpoint; historical development of some alterations.

3-970 (91H, 92H, 93H). DIRECTED STUDY. (1-5 cr; prereq #)
Individual reading of texts selected to suit student's level and interest.

5-011 (112). SANSKRIT COMPOSITION. (3 cr; prereq 5-201 or #)
Enables students to compose literary Sanskrit and to practice rules of grammar, syntax and prosody. Offered when feasible.

5-201f/5-202w/5-203s (101, 102, 103). INTERMEDIATE SANSKRIT. (4-4-4 cr; prereq 3-203 and 3-204)

5-204 (141). INTRODUCTION TO VEDIC GRAMMAR. (3 cr; prereq 3-203; offered by arrangement)

5-320 (131, 132, 133). READINGS IN PHILOSOPHICAL TEXTS. (3 cr [may be repeated for cr]; prereq 5-203 or #)
Readings in representative text material.

Course Offerings and Major Sequences

- 5-401 (121). SHAIVA TEXTS.** (3 cr; prereq 5-203; offered by arrangement)
Shaivaitic thought and literature, with selected texts.
- 5-407, 5-408, 5-409 (151, 152, 153). ADVANCED READINGS IN SANSKRIT.** (3,3,3 cr; prereq 5-203)
Selected texts covering various periods and styles.
- 5-701 (106). THE SANSKRIT LANGUAGE.** (3 cr; prereq 3-201 or #; offered when feasible)
The course will introduce the students to the main features of the structure of the Sanskrit language and its history.
- 5-702 (113). INTRODUCTION TO PANINI'S GRAMMAR.** (3 cr; prereq minimum grade of B through 5-202 or #; offered when feasible)
Introduces students to Panini's methods of formulating the words and his analysis of the language, together with short selected readings from commentaries on Panini.
- 5-990 (191, 192, 193). RESEARCH.** (4,4,4 cr; prereq 5-203 and #)

SPAN

See Foreign Study

SPANISH AND PORTUGUESE LANGUAGES

Spanish (Span)

Major: Students may arrange major programs in either Sequence A (Spanish Literature) or Sequence B (Spanish American Literature):

- A. Span 3-011, 3-014; 3-501, 3-502, 3-503; 3-211, 3-212, 3-213 or 3-211H, 3-212H, 3-213H; 3-721 and 6 credits in 5-000 level courses.
- B. Span 3-011, 3-014; 3-501, 3-512, 3-513; 3-251, 3-252, 3-253 or 3-251H, 3-252H, 3-253H; 3-271 and 6 credits in 5-000 level courses.

LOWER DIVISION COURSES

- 1-101f,w/1-102f,w,s/1-103f,w,s (1-2-3). BEGINNING SPANISH.** (5-5-5 cr; students submitting 1 yr high school Spanish for entrance must take 1-102 and those offering 2 yrs must take 1-103)
Beginning course stressing correct pronunciation, aural comprehension, basic grammar, and practical reading knowledge.
- 1-102H, 1-103H, 1-104H, (2H, 3H, 25H). HONORS COURSE: BEGINNING AND INTERMEDIATE SPANISH.** (5,5,5 cr; open to superior students on basis of performance in previous qtr or by #)
- 1-104f,w,s (25). INTERMEDIATE SPANISH.** (5 cr; prereq 1-103 or 1-103H or 3 yrs high school Spanish) Narvaez
Intensive review of grammar accomplished to great extent through analysis of variety of cultural and literary texts.
- 1-104H (25H). HONORS COURSE: INTERMEDIATE SPANISH.** (See 1-102H, 1-103H, 1-104H)
- 1-105 (26). INTERMEDIATE SPANISH.** (3 cr; prereq 1-104 or 4 yrs high school Spanish)
(Continuation of 1-104) Intensified analysis of literary texts to develop reading fluency and reinforce oral ability of the language.
- 1-105H (26H). HONORS COURSE: INTERMEDIATE SPANISH.** (3 cr; prereq 1-104 or 4 yrs high school Spanish; open to superior students on basis of performance in previous qtr or by #)
(Continuation of 1-104H) Intensified analysis of literary texts to develop reading fluency and reinforce oral ability of the language.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Spanish and Portuguese Languages

- 3-001 (56). SPANISH PRONUNCIATION. (3 cr; prereq 1-104 or #) Narvaez
- 3-011 (54). SPANISH COMPOSITION. (3 cr; prereq 1-104 or equiv) Narvaez
- 3-014 (55). SPANISH CONVERSATION. (3 cr; prereq 3-011 or equiv) Narvaez
- 3-021 (57). ADVANCED SPANISH COMPOSITION AND CONVERSATION. (3 cr; prereq 3-014) Narvaez
- 3-024 (58). ADVANCED SPANISH CONVERSATION AND COMPOSITION. (3 cr; prereq 3-021) Narvaez
- 3-091 (59). SPANISH PLAY. (3 cr; prereq 1-103 or #)
- 3-104 (53). INTRODUCTION TO SPANISH AND SPANISH-AMERICAN LITERARY TEXTS. (3 cr; prereq 1-105 or #)
A variety of literary works representing the principal genres is examined through stylistic analysis and literary explications. Students learn critical terminology and discuss literary problems and techniques.
- 3-104H (53H). INTRODUCTION TO SPANISH AND SPANISH-AMERICAN LITERARY TEXTS. (3 cr; prereq 1-105H or # or exam)
- 3-211f (65). SURVEY OF SPANISH LITERATURE: POEMA DEL CID TO CELESTINA. (3 cr; prereq 3-104) Rundorff
- 3-211Hf (65H). HONORS COURSE: SURVEY OF SPANISH LITERATURE: POEMA DEL CID TO CELESTINA. (3 cr; prereq 3-104 with an A, and #)
- 3-212w (66). SURVEY OF SPANISH LITERATURE: GOLDEN AGE. (3 cr; prereq 3-104) Rundorff
- 3-212Hw (66H). HONORS COURSE: SURVEY OF SPANISH LITERATURE: GOLDEN AGE. (3 cr; prereq 3-104 with an A, or 3-211H and #)
- 3-213s (67). SURVEY OF SPANISH LITERATURE: NEOCLASSICISM TO EARLY 20TH CENTURY. (3 cr; prereq 3-104) Rundorff
- 3-213Hs (67H). HONORS COURSE: SURVEY OF SPANISH LITERATURE: NEOCLASSICISM TO EARLY 20TH CENTURY. (3 cr; prereq 3-104 with an A, or 3-212H and #)
- 3-251f, 3-252w, 3-253s (74, 75, 76). SURVEY OF LITERATURE OF SPANISH AMERICA. (3,3,3 cr; prereq 3-104) Floripe
- 3-251Hf, 3-252Hw, 3-253Hs (74H, 75H, 76H). HONORS PROSEMINARS: SURVEY OF LITERATURE OF SPANISH AMERICA. (3,3,3 cr; prereq 3-104H or 3-104 with an A and #) Hughes
- 3-501f, 3-502w, 3-503s (60, 61, 62). SPANISH CIVILIZATION AND CULTURE. (3,3,3 cr; prereq 3-014)
- 3-512w, 3-513s (63, 64). LATIN-AMERICAN CIVILIZATION AND CULTURE. (3,3 cr; prereq 3-501 or #)
- 3-721 (90). ORIGINS AND HISTORY OF SPANISH AND PORTUGUESE. (3 cr; prereq 3-011 or Port 3-011)
An introduction to the factors that influenced the growth and structure of the Spanish and Portuguese languages.
- 5-011 (105). SPANISH STYLISTICS. (3 cr; prereq 3-021 or equiv) Narvaez
- 5-211f (155). SPANISH LITERATURE OF 16TH CENTURY: NOVEL. (3 cr; prereq 3-211, 3-212, 3-213; offered 1970-71 and alt yrs) Jones
- 5-212w (156). SPANISH LITERATURE OF 16TH CENTURY: THE DRAMA. (3 cr; prereq 3-211, 3-212, 3-213; offered 1970-71 and alt yrs) Jones
- 5-213s (157). SPANISH LITERATURE OF 16TH CENTURY: POETRY. (3 cr; prereq 3-211, 3-212, 3-213; offered 1970-71 and alt yrs) Jones
- 5-214 (125). INTRODUCTION TO SPANISH MYSTIC LITERATURE OF 16TH AND 17TH CENTURIES. (3 cr; prereq 3-211, 3-212, 3-213)
Juan de Avila, Santa Teresa, P. Ribadeneira, Fr. Luis de Leon.
- 5-221f (115). SPANISH LITERATURE OF 17TH CENTURY: DRAMA. (3 cr; prereq 3-211, 3-212, 3-213; offered 1971-72 and alt yrs) Jones
- 5-222w (116). SPANISH LITERATURE OF 17TH CENTURY: NOVEL. (3 cr; prereq 3-211, 3-212, 3-213; offered 1971-72 and alt yrs) Jones

Course Offerings and Major Sequences

- 5-223s (117). SPANISH LITERATURE OF 17TH CENTURY: POETRY. (3 cr; prereq 3-211, 3-212, 3-213; offered 1971-72 and alt yrs) Jones
- 5-231 (134). VARIATIONS OF LOVE THEME IN 10 SPANISH MASTERPIECES. (3 cr; prereq 3-211, 3-212, 3-213; offered when feasible) Rundorff
- 5-232 (135). DEVELOPMENT AND METAMORPHOSIS OF "DON JUAN" THEME. (3 cr; prereq 3-211, 3-212, 3-213 or #) Rundorff
- 5-241 (180). THE 18TH CENTURY: STUDIES IN THE PRINCIPAL WRITERS: FEIJOO, JOVELLANOS, CADALSO, MORATIN AND OTHERS. (3 cr; prereq 3-211, 3-212, 3-213 or #) Hughes
- 5-251f, 5-252w, 5-253s (110, 111, 112). SPANISH LITERATURE: 19TH CENTURY. (3,3,3 cr; prereq 3-211, 3-212, 3-213; offered 1970-71 and alt yrs)
- 5-261 (113). WORLD OUTLOOK IN SPANISH NOVEL (KRAUSISMO TO EXISTENCIALISMO). (3 cr; prereq 3-211, 3-212, 3-213; offered 1970-71 and alt yrs) Rundorff
- 5-271f (174). TWENTIETH-CENTURY SPANISH LITERATURE: DRAMA. (3 cr; prereq 3-211, 3-212, 3-213; offered 1971-72 and alt yrs)
- 5-272w (175). TWENTIETH-CENTURY SPANISH LITERATURE: PROSE. (3 cr; prereq 3-211, 3-212, 3-213; offered 1971-72 and alt yrs)
Unamuno, Azorin, Baroja, Valle Inclan, Ortega y Gasset, Perez de Ayala, Gomez de la Serna.
- 5-273s (176). TWENTIETH-CENTURY SPANISH LITERATURE: POETRY. (3 cr; prereq 3-211, 3-212, 3-213; offered 1971-72 and alt yrs)
Juan Ramon Jimenez, Unamuno, Antonio and Manuel Machado, Valle Inclan, Garcia Lorca, Alberti, Moreno Villa, Aleixandre, Leon Felipe, Guillen, and Salinas.
- 5-311 (120). BALLAD. (3 cr; prereq 3-211, 3-212, 3-213; offered 1970-71 and alt yrs)
- 5-312 (121). CELESTINA. (3 cr; prereq 3-211, 3-212, 3-213; offered 1970-71 and alt yrs)
Jones
- 5-313 (131). PICARESQUE NOVEL. (3 cr; prereq 3-211, 3-212, 3-213; offered when feasible)
Rundorff
- 5-351 (171). SPANISH NOVEL FROM VALERA TO PALACIO VALDEZ. (3 cr; prereq 3-211, 3-212, 3-213)
- 5-371 (172). MODERN SPANISH NOVEL (1900-1936). (3 cr; prereq 3-211, 3-212, 3-213 or #; offered when feasible) Sullivan
- 5-373 (183). CONTEMPORARY SPANISH NOVEL SINCE THE CIVIL WAR. (3 cr; prereq one Upper Division literature course or #) Sullivan
- 5-381 (178). CONTEMPORARY SPANISH THEATRE: 1939-1968. (3 cr; prereq one Upper Division literature course or #; offered 1970-71 and alt yrs) Sullivan
- 5-392 (178). CONTEMPORARY SPANISH POETRY: FROM 1936. (3 cr; prereq 3-211, 3-212, 3-213 or #)
- 5-411 (130). CERVANTES: DON QUIXOTE. (3 cr; prereq 3-211, 3-212, 3-213) Jones
- 5-412 (132). CERVANTES: NOVELAS EJEMPLARES AND ENTREMESSES. (3 cr; prereq 3-211, 3-212, 3-213 or #) Jones
- 5-415 (136). CALDERON. (3 cr; prereq 3-211, 3-212, 3-213 or #) Rundorff
- 5-451 (169). VALERA. (3 cr; prereq one Upper Division literature course or #) Rundorff
- 5-471 (185). UNAMUNO AND EXISTENTIAL WRITERS. (2 cr; prereq one Upper Division literature course or #)
- 5-472 (186). AZORIN. (2 cr; prereq one Upper Division literature course or #)
- 5-481 (187). UN-REALISM IN SPANISH THEATRE: CASONA. (2 cr; prereq one Upper Division literature course or #)
- Arab 5-501f (161). HISPANO-ARABIC LITERATURE AND CULTURE: HISTORY OF ISLAMIC SPAIN. (3 cr; prereq #) Chejne
- Arab 5-502w (162). HISPANO-ARABIC LITERATURE AND CULTURE: ARAB PHILOSOPHY IN SPAIN. (3 cr; prereq #) Chejne
- Arab 5-503s (163). HISPANO-ARABIC LITERATURE AND CULTURE: HISPANO-ARABIC LITERATURE. (3 cr; prereq #) Chejne

- 5-521f, 5-522w, 5-523s (143, 144, 145). **COLONIAL AND 19TH-CENTURY LATIN-AMERICAN LITERATURE.** (3,3,3 cr; prereq 3-211, 3-212, 3-213 or 3-253; offered 1971-72 and alt yrs) Hughes
- 5-551f (140). **LATIN-AMERICAN LITERATURE: POETRY.** (3 cr; prereq 3-211, 3-212, 3-213 or 3-253; offered 1970-71 and alt yrs) Floripe
Silva, Dario, Nervo, Chocano, Herrera y Reissig, Lugones, Agustini, Mistral, Ibarbourou, Storni, Lopez Verlarde, and Neruda.
- 5-552w (141). **LATIN-AMERICAN LITERATURE: ESSAY, SHORT STORY, DRAMA.** (3 cr; prereq 3-211, 3-212, 3-213 or 3-253; offered 1970-71 and alt yrs) Floripe
Rodo, Gonzales Prada, Ricardo Rojas, Blanco Fombona, Ugarte, Vasconcelos, Alfonso Reyes, Quiroga, Gallegos, Florencio Sanchez.
- 5-553s (142). **LATIN-AMERICAN LITERATURE NOVEL.** (3 cr; prereq 3-211, 3-212, 3-213 or 3-253; offered 1970-71 and alt yrs) Floripe
Gallegos, Azuela, Rivera, Guiraldes, Barrios, Galvez, Lynch, Ciro Alegria.
- 5-581f, 5-582w, 5-583s (146, 147, 148). **SPANISH-AMERICAN NOVEL AND SHORT STORY.** (3,3,3 cr; prereq 3-211, 3-212, 3-213 or 3-253; offered 1971-72 and alt yrs) Floripe
- 5-584 (149). **CONTEMPORARY LATIN-AMERICAN NOVEL.** (2 cr; prereq 3-253 or #) Floripe, Hughes
- 5-585 (150). **NOVELS AND SHORT STORIES OF ARLT AND CORTAZAR.** (3 cr; prereq 3-251, 3-252, 3-253 or #) Hughes
- 5-711, 5-712, 5-713 (107, 108, 109). **STRUCTURE OF MODERN SPANISH: PHONOLOGY, MORPHOLOGY, SYNTAX.** (3,3,3 cr; prereq 3-021 or ¶3-021 or #) Narvaez
Scientific approach to structure of present-day Spanish; special attention to syntax, phonology, word-formation, and dialectal differences.
- 5-721 (114). **INTRODUCTION TO ROMANCE PHILOLOGY.** (3 cr; prereq 3-721 or Port 3-721 or #) Mantini
- 5-970 (189). **DIRECTED READINGS FOR UPPER DIVISION STUDENTS.** (1-3 cr per qtr; prereq # and consent of dept chairman)

Portuguese (Port)

● Major Sequence in Arts College—

Portuguese-Spanish Major: Students may combine Portuguese and Spanish to form a Portuguese-Spanish major. Students may arrange major programs in either sequence A or sequence B:

- A. Span 3-014; 3-104; 3-211, 3-212, 3-213; 3-501; Port 3-014; 3-211, 3-212, 3-213; 3-721
- B. Span 3-014; 3-104; 3-251, 3-252, 3-253; 3-501, 3-512, 3-513; Port 3-014; 3-211, 3-212, 3-213; 3-721

LOWER DIVISION COURSES

- 1-101f/1-102w/1-103s (1-2-3). **BEGINNING PORTUGUESE.** (5-5-5 cr) Hamilton
Aural comprehension, correct pronunciation, basic grammar, and practical reading knowledge. Brazilian speech is stressed but Lusitanian forms are also studied.
- 1-104f (25). **INTERMEDIATE PORTUGUESE GRAMMAR AND COMPOSITION.** (5 cr; prereq 1-103 or #) Hamilton
Intensive review of grammar accomplished in part through careful reading and analysis of selected cultural and literary texts.

UPPER DIVISION COURSES

- 3-011 (54). **COMPOSITION.** (3 cr; prereq 1-104, #)
- 3-014 (55). **CONVERSATION AND COMPOSITION.** (3 cr; prereq 1-104 or equiv) Hamilton
Brazilian speech but continental Portuguese forms are also stressed.
- 3-211 (65). **READINGS IN RENAISSANCE QUINHENTISMO AND MODERN PORTUGUESE LITERATURE.** (3 cr; prereq 1-104 or Span 3-104 or #)

Course Offerings and Major Sequences

- 3-212 (66). READINGS IN BRAZILIAN LITERATURE OF THE 19TH AND 20TH CENTURIES. (3 cr; prereq 1-104 or Span 3-104 or #)
- 3-213 (67). READINGS IN MODERN AND CONTEMPORARY BRAZILIAN LITERATURE. (3 cr; prereq 1-104 or Span 3-104 or #)
- 3-721 (90). ORIGINS AND HISTORY OF SPANISH AND PORTUGUESE. (3 cr; prereq 3-011 or Span 3-011)
An introduction to the factors that influenced the growth and structure of the Spanish and Portuguese languages.
- 5-112, 5-113, 5-114 (110, 111, 112). TOPICS IN PORTUGUESE LITERATURE. (3,3,3 cr; prereq 3-213; offered 1971-72 and alt yrs) Hamilton
- 5-212, 5-213, 5-214 (120, 121, 122). TOPICS IN BRAZILIAN LITERATURE. (3,3,3 cr; prereq 3-213; offered 1970-71 and alt yrs) Hamilton
- 5-225 (133). PROSEMINAR: CONTEMPORARY BRAZILIAN LITERATURE. (3 cr; prereq 3-211 or 3-212 or 3-213 or ¶3-211 or ¶3-213)
- 5-721 (114). INTRODUCTION TO ROMANCE PHILOLOGY. (3 cr; prereq 3-721 or Span 3-721 or #) Mantini
- 5-970 (189). INDEPENDENT READINGS FOR UPPER DIVISION STUDENTS. (1-3 cr per qtr; prereq # and consent of dept chairman) Hamilton

SPEECH, COMMUNICATION, AND THEATRE ARTS

The Department offers four different emphases for a major. Three are in the Speech-Communication (Spch) Division of the Department, and the fourth is in the Theatre (Th) division. The student and his adviser (available for speech through 317 Folwell Hall and for theatre through 105 Shevlin Hall) will work out his specific upper division program. The following are recommended as guidelines for such planning.

- Major Emphases for the B.A. degree in the College of Liberal Arts—
 - I. Broadcasting (Spch)

Required Background Courses:

- A. Spch 1-101 or 1-102 and 1-106, Th 1-101, 1-501
- B. Psy 1-001/1-002†, Jour 1-001, 1-005, 1-701

Recommended Courses:

- A. Spch 3-201, 3-203, 3-204, 3-401, 3-641, 5-211, Th 3-801
- B. 3 cr in each of the following groups:
Spch 5-201, 5-202, 5-203, 5-221
Spch 5-222, 5-231, 5-232, 5-233
- C. 3 cr in other Upper Division speech courses
- D. Outside the major:
Jour 3-401, 3-486, 5-501, 5-611, 5-721
Psy 5-201, 5-751, Pol 5-767, 5-768, Soc 5-351; ArtS 5-701/5-702/
5-703; ArtH 3-921/3-922/3-923

II. Communication (Spch)

Required Background Courses:

- A. Spch 1-101 or 1-102 and 1-106, Th 1-101
- B. Psy 1-001/1-002†

Recommended Courses:

- A. Spch 3-401, 3-641, 5-403, 5-411, 5-431
- B. Spch 1-201 or 3-605 or 5-432 or Th 3-801
- C. Additional Upper Division courses from communication subfield to total 27 cr in major

III. Rhetoric and Public Address (Spch)

Required Background Courses:

- A. Spch 1-101 or 1-102 and 1-106, Th 1-101
- B. Psy 1-001/1-002†

Recommended Courses:

- A. Spch 3-401, 3-605, 3-641, 5-431, 5-432, 5-611, 5-615
- B. 12 additional cr from Rhetoric and Public Address subfield.

IV. Theatre (Th) (see p. 229)

Required Background Courses: Th 1-101, 1-321, 1-501, 1-503

Recommended Courses:

- A. Th 3-102, 3-103, 3-104, 3-105, 3-106, 3-107
- B. 6 cr from Th 3-512, 3-514 or 3-516
- C. Th 5-711, 5-713 or senior project
- D. Th 3-801
- E. 12 cr in other Upper Division theatre courses
- F. Outside the major (suggested):
 Psy 1-001/1-002†; ArtS 1-101, 1-103, 3-111; Clas 3-082, 3-083,
 3-091, 3-092, 3-093; Engl 3-155/3-156, 5-128, 5-129, 5-164; Ger
 5-601, 5-602, 5-603; HE 1-541, 3-621, 5-541; Scan 5-615, 5-616,
 5-617; Phil 5-501.

The B.F.A. degree in Theatre—This special theatre major is described in this bulletin under the Bachelor of Fine Arts degree programs (p. 14).

Honors Opportunities and Graduation with Honors—Information concerning opportunities for honors students and departmental requirements for graduation with honors may be obtained at the Honors Division Office (115 Johnston) or the department office (317 Folwell Hall).

Cocurricular Activities—All students in the University are invited to participate in Intercollegiate Debating, the Freshman-Sophomore Debate, the Freshman-Sophomore Oratorical Contest, the Pillsbury Oratorical Contest, and the activities of the University Theatre.

Since many elementary and secondary school teachers are expected to direct speech activities, students preparing to enter teaching are urged to participate in these activities sponsored by the department.

General Education—The department recommends courses in public address, communication theory, oral interpretation of literature and theatre history for meeting the goals of general education. See description for: Spch 1-101, 1-102, 1-103, 1-104, 3-201, 3-401, 3-601, 3-605, 3-615, 5-411, Th 1-101, 1-501, 3-801, 3-802, 3-803, 5-171, 5-172, 5-173.

Note—For courses in oral interpretation see Theatre division below.

Speech—Communication (Spch)

LOWER DIVISION COURSES

- 1-101 (5). **FUNDAMENTALS OF SPEECH.** (5 cr, §1-106)
 Development of basic understanding of speech processes. Examines nature of speech and speech skills; provides opportunities for individual speaking and evaluation.
- 1-102 (2). **COMMUNICATION IN THE MODERN WORLD: INTERPERSONAL COMMUNICATION.** (3 cr)
 Description of structure of acts of communication and of factors influencing the occurrence, form and effects of such acts. Analysis of the relationship of communication forms to social structure.
- 1-103 (3). **COMMUNICATION IN THE MODERN WORLD: MASS MEDIA.** (3 cr, §Jour 1-003)
 The mass media and their social and cultural effects. Interaction between the audience and the media. The popular arts. Related areas of communication; advertising, public relations, propaganda. The future of mass media and "mass culture."
- 1-104 (4). **COMMUNICATION IN THE MODERN WORLD: THE PERFORMING ARTS.** (3 cr)

Course Offerings and Major Sequences

An application of the principles of communication to the arts of film, theatre, television and other media.

- 1-105H (5H). HONORS COURSE: FUNDAMENTALS OF SPEECH.** (5 cr; prereq 3rd qtr with B avg)
Development of basic understanding of speech processes. Examines nature of speech and speech skills; provides opportunities for individual speaking and evaluation.
- 1-106 (6). FUNDAMENTALS OF SPEECH.** (3 cr, §1-101; prereq 1-102)
Emphasis on investigation and persuasion ranging from informal committee session to formal meeting requiring parliamentary rules.
- 1-108 (6A). VOICE AND ARTICULATION.** (3 cr; prereq 1-101 or 1-106 and #; offered when feasible)
Fundamentals of voice production and articulation. Examination and application of basic approaches used in voice and articulation improvement to individual cases.
- 1-110 (9). FRESHMAN DISCUSSION AND DEBATE.** (1 cr; open to freshmen who qualify for Freshman Debate Squad; prereq fr with C avg)

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

General

- 3-108 (67). PHONETICS.** (3 cr, §§SPA 3-108; prereq 1-101 or 1-106)
Sounds of American English as they come separately and in connected speech. Strong and weak forms, stress, assimilation. Practice in ear training.
- 3-190 (99). ATTAINING UNDERSTANDING OF SPEECH-COMMUNICATION THROUGH TEACHING OTHERS.** (1-3 cr; may be repeated once)
Directed study through teaching others. Students will work with an instructor in planning and teaching an undergraduate course.
- 3-191H, 3-192H, 3-193H (94H, 95H, 96H). HONORS COURSE: TUTORIAL SEMINAR IN SPEECH.** (3,3,3 cr; prereq honors candidate in speech and Δ, #)
Independent reading, thesis preparation, and discussion of research in selected fields.
- 5-101 (122). INTRODUCTION TO RESEARCH.** (3 cr; prereq 1-101 or 1-106, Psy 1-002)
Graduate research in speech; selection of topics and methods of investigation. Required of all graduate majors in speech.
- 5-970 (181, 182, 183). READINGS IN SPEECH.** (Cr ar; prereq 9 cr in Upper Division speech and #)
Directed reading and preparation of reports on selected subjects.

Broadcasting (Spch)

- 3-201 (65). INTRODUCTION TO BROADCASTING PRODUCTION.** (3 cr; prereq 1-101)
Fundamentals of practice and theory. Emphasis on projects and exercises in performance and scripting; introduction to studio equipment and procedures.
- 3-202 (66). LABORATORY SECTION: BROADCASTING PRODUCTION.** (1 cr; prereq 3-201 or §3-201)
Arts and techniques of television. Basic experience with cameras, lighting, floor direction, and particularly the planning and construction of television visuals and settings in the on-the-air professional production environment.
- 3-203 (68). RADIO PRODUCTION.** (3 cr; prereq 3-201)
An introduction to radio production. Equipment and staff organization; program design and presentation. Directed experience in organization, writing, production, direction, and performance of radio news, music, dramatic, and documentary programs.
- 3-204 (69). TELEVISION PRODUCTION.** (3 cr; prereq 3-201)
Introduction to the problems of production. Equipment and staff organization; interrelationships with program design. Exercises in production.
- 5-201 (70). TELEVISION PRODUCTION: DRAMA.** (3 cr; prereq 3-204)
Instruction and practice in the specialized area of the television production of drama. Aesthetics and techniques of the use of television as a dramatic medium.
- 5-202 (171). ADVANCED TELEVISION PRODUCTION I.** (3 cr; limited to 14 students; prereq 3-204 and #)
Provides advanced students with an opportunity to carry out creative problems in tele-

vision production and direction. Special emphasis on advanced program design as well as lighting, audio, camera and electronic techniques.

- 5-203 (172). ADVANCED TELEVISION PRODUCTION II.** (3 cr; prereq 5-202 and #)
Advanced students solve production problems and apply creative techniques for regularly broadcast television programs.
- 5-204 (117). WRITING RADIO AND TELEVISION DRAMA.** (3 cr; prereq 3-201, #)
Physical, psychological and sociological aspects of radio and television and their influence on the writer. Script-writing in various forms from dramatic commercials to dramas and documentaries.
- 5-211 (170). RADIO AND TELEVISION PROGRAMMING.** (3 cr; prereq 3-201)
Theory and practice. Principles of program effectiveness; program policies of the industry. The FCC and programming. Emphasis on talk and discussion.
- 5-221 (173). EDUCATIONAL TELEVISION PRODUCTION.** (3 cr; prereq 5-203 or #)
Special emphasis on the uses of television for instructional purposes, review of research literature as it applies to the production of televised educational materials and experimentation in the preparation of such materials.
- 5-222 (174). EDUCATIONAL TELEVISION PROGRAMMING AND ADMINISTRATION.**
(3 cr; prereq 5-211, 5-221, or #)
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.
- 5-231 (175). COMPARATIVE BROADCAST SYSTEMS.** (3 cr; prereq 5-211 or #)
Historical, sociological and political aspects of various systems of broadcasting throughout the world. Examination of American, Canadian, British, French, German, Soviet and other broadcast institutions to discover why and how they are regulated and what impact they have had on political, social, and economic development.
- 5-232 (176). INTERNATIONAL BROADCASTING.** (3 cr; prereq 12 cr pol sci or #)
Broadcasting as an international medium of communication in the U.S., Great Britain, USSR, Japan, others. Theories of informing and persuading through direct broadcast and regional and international exchange of programs; international and regional regulatory agreements; current problems in spectrum control; social and legal implications of broadcasting via satellite.
- 5-233 (177). BROADCASTING AND NATIONAL DEVELOPMENT.** (3 cr; prereq 5-231 or #)
The purposeful employment of radio and television to effect changes in the social, political, economic and cultural life of various peoples and nations. Particular concentration on the use of broadcasting by the developing nations to improve agricultural practices, promote better hygienic standards, increase literacy and develop an awareness of civic responsibility.
- 5-721, 5-722, 5-723 (Th 141, 142, 143). PRODUCTION OF TELEVISION DRAMA.** (See listing under Theatre)

Communication (Spch)

- 3-401 (61). THE PROCESS OF INTERPERSONAL COMMUNICATION.** (3 cr; prereq 1-101 or 1-106 or #, Psy 1-002)
Basic orientation on the place of speech and language in human behavior; discussion and nature and function of the communication process.
- 5-402 (162). BREAKDOWN IN INTERPERSONAL COMMUNICATION.** (3 cr; prereq 3-401 or 5-401 or #; offered alt yrs)
A study of factors contributing to misunderstanding, not understanding, disagreement and cessation of contact in dyads.
- 5-403 (165). THEORIES OF COMMUNICATION.** (3 cr; prereq 3-401 or 5-401 or #)
The study of various theories of human communication. Analysis of their usefulness for particular purposes. Consideration of problems in the development of communication theories.
- 5-404 (169). SPEECH AND LANGUAGE IN HUMAN BEHAVIOR.** (3 cr; prereq 1-102, 3-401 or grad)
Basic orientation on place of speech and language in human behavior. Individual projects and collateral reading.
- 5-411 (106). SMALL GROUP COMMUNICATION.** (5 cr; prereq 3-641 or #)
Study of communication and dynamics within the small, task-oriented group. Group cohesiveness, leadership, role structure, information processing, and decision making.

Course Offerings and Major Sequences

- 5-412 (106A). **PUBLIC SPEAKING AND CONFERENCE LEADERSHIP.** (3 cr; for hospital administration majors only)
- 5-421 (124). **QUANTITATIVE RESEARCH IN COMMUNICATION.** (3 cr; prereq 3-401 or 5-403, 5-101 or #)
Review and discussion of experimental and descriptive research; analysis of research design and procedures; individual research projects.
- 5-431 (101). **THE PROCESS OF PERSUASION.** (3 cr; prereq 1-101 or 1-106, Psy 1-002, 10 cr in social science or #)
Theories of modern motivational communication. Analysis of the process of social control through persuasive speech.
- 5-432 (101A). **PERSUASION LABORATORY.** (2 cr; prereq 5-431 or ¶5-431)
Practice and case study of the varied methods of persuasive speaking.
- 5-441 (116). **COMMUNICATION IN HUMAN ORGANIZATIONS.** (3 cr; prereq 1-102 or 3-401, 3-641 or 5-411 or grad)
Analysis of the functions of communication in organizational settings. Study of organizational structure and dynamics and their effect upon the communication process. Collateral readings and individual projects.
- 5-451 (111). **INTERCULTURAL SPEECH-COMMUNICATION.** (3 cr; prereq 3-401, Anth 1-002 or 5-101, or other course in cultural anthropology, or #)
Survey of factors important to successful interpersonal communication across cultures. Linguistic and non-verbal variables. Emphasis is upon North Americans abroad, communicating with host nationals.

Rhetoric and Public Address (Spch)

- 3-601 (50). **PUBLIC SPEAKING.** (3 cr, §1-101; prereq Upper Division standing)
The principles of preparing and presenting public speeches; directed practice in public speaking. Consideration of the functions of public speaking in contemporary life.
- 3-605 (51). **ADVANCED PUBLIC SPEAKING.** (3 cr; prereq 1-101 or 1-106)
Preparation and delivery of speeches on current public issues.
- 3-615 (55). **SPEECH WRITING AND PLATFORM SPEAKING.** (3 cr; prereq 3-605 or #)
Essentials of speech writing, organization, style. Presentation of speeches from manuscripts.
- 3-620 (97). **INTERCOLLEGIATE ORATORY AND DEBATE.** (2 cr; open to students who represent University in annual contest of Northern Oratorical League, and to students who qualify for intercollegiate debate squad; prereq soph with C avg, jr)
- 3-621 (97A). **INTERCOLLEGIATE ORATORY AND DEBATE.** (3 cr; prereq 1-101)
Open to students interested in interscholastic speech competition. Performance in the speech activities will be emphasized.
- 3-641 (52). **DISCUSSION AND CONFERENCE METHODS.** (3 cr; prereq 1-101 or 1-106 or #)
Cooperative thinking in task-oriented groups. Planning, preparing for, participating in and leading private and public meetings.
- 5-602 (102). **CONTEMPORARY POLITICAL PERSUASION.** (3 cr; prereq 1-101 or 1-106, 5-431 or #)
Study of contemporary political speaking. Analysis of ideologies in political persuasion.
- 5-603 (103). **ARGUMENTATION.** (3 cr; prereq 1-101 or 1-106, or #)
The role of reasoned discourse in social and governmental affairs. Logical methods of persuasion.
- 5-611 (109). **CLASSICAL RHETORIC.** (3 cr; prereq 1-101 or 1-106)
Greek and Roman theories of speech making; historical and philosophic context and influence on education.
- 5-615 (125). **INTRODUCTION TO RHETORICAL CRITICISM.** (3 cr; prereq 1-101 or 1-106...3-615 recommended)
Introduction to traditional and contemporary rhetorical theory and its application to contemporary public address.
- 5-616 (110). **HISTORY AND CRITICISM OF BRITISH PUBLIC ADDRESS.** (3 cr; prereq 1-101 or 1-106 or #)
British orators, their works, the historical setting. British rhetorical theory.
- 5-617 (126A). **HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS.** (3 cr;

prereq 1-101 or 1-106, Psy 1-002)

Survey; history and criticism of religious and reform speaking in the United States from 1620 to 1920.

5-618 (126B). HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS. (3 cr; prereq 1-101 or 1-106, Psy 1-002)

Survey; history and criticism of political speaking in the United States from the time of the revolution to the present.

5-619 (126C). HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS. (3 cr; prereq 1-101 or 1-106, Psy 1-002)

Survey; history and criticism of speaking on foreign policy issues in the United States from the Revolution to present.

Theatre Arts (Th)

LOWER DIVISION COURSES

1-101 (11). INTRODUCTION TO THE THEATRE ARTS. (3 cr)

History and theory of plays and writing as well as various arts and crafts of the theatre.

1-501 (12). LABORATORY SECTIONS: INTRODUCTION TO THE THEATRE. (1 cr; prereq 1-101 or ¶1-101)

Laboratory in the practice of the arts and crafts of the theatre; scenery and particularly construction and painting, stage operation, theatre lighting, costuming, or make-up.

1-405H (13H). HONORS COURSE: INTRODUCTION TO THE THEATRE. (1 cr; prereq 1-101 and #)

Enrichment honors course for students who have completed Th 1-101 with outstanding work in class.

1-311/1-312/1-313 (18-19-20). VOICE PRODUCTION FOR THE THEATRE. (2-2-2 cr; prereq soph, 1-501 or ¶1-501)

Physical exercises designed to free the human voice from unnecessary inhibitions and tensions. Work on prose, poetry and drama. Vocal exercises with piano.

1-321 (21). BEGINNING ACTING: CREATIVE APPROACH. (3 cr; prereq fr with Δ, soph, 1-501 or ¶1-501)

Creation and presentation of original scenes and skits. Ability to respond to the imaginative situation with individuality and effectiveness stressed.

1-322 (22). BEGINNING ACTING: CREATING A ROLE. (3 cr; prereq 1-501, 1-321)

Application of creative techniques to the analysis, understanding, and theatrically effective communication of roles from dramatic literature.

1-326 (23). BEGINNING ACTING: TECHNIQUE. (3 cr; prereq 1-321)

Fundamentals of body movement, rhythms, and acting technique. Individual and group performances.

1-328 (25). MIME AND THE ACTOR. (3 cr; prereq 1-321)

The basic techniques and the domain of mime discovered and explored through class participation.

1-502 (24). STAGE MAKE-UP. (1 cr; prereq 1-501 or ¶1-501)

Theory and practice in the art of stage make-up.

1-503 (34). STAGECRAFT: CONSTRUCTION AND PAINTING. (3 cr; prereq 1-501)

Theory and practice in construction, painting, and shifting of stage scenery.

1-800 (Spch 10). ORAL INTERPRETATION READING HOUR. (1 cr [may be repeated for maximum of 3 cr])

Rehearsal and public performance of group readings of literature.

UPPER DIVISION COURSES

General

3-102, 3-103, 3-104 (51A, 52A, 53A). OUR THEATRE TODAY. (½ cr; prereq acceptance as an undergrad theatre major or #)

Discussion and analysis of current trends, problems and achievements in theatre of the present day.

3-105, 3-106, 3-107 (51B, 52B, 53B). OUR THEATRE TODAY. (½ cr; required of sr theatre majors; prereq 3-104)

Discussion and analysis of current trends, problems and achievements in today's theatre.

3-401H (88H). INTERDISCIPLINARY HONORS SEMINAR: MUSIC, STUDIO ARTS,

Course Offerings and Major Sequences

- THEATRE.** (3-4 cr, §Art 3-401H, §Mus 3-401H; prereq jr, sr honors cand, §)
To acquaint students majoring in one of the three fine arts areas with activities and techniques of the other two and to attempt to develop understanding and aesthetic judgment in all three areas.
- 3-402H (89H). INTERDISCIPLINARY HONORS SEMINAR: MUSIC, STUDIO ARTS, THEATRE.** (2-4 cr, §Art 3-402H, §Mus 3-402H; prereq jr, sr honors cand, §)
To acquaint students majoring in one of the three fine arts areas with activities and techniques of the other two and to attempt to develop understanding and aesthetic judgment in all three areas.
- 3-412H, 3-413H, 3-414H (94H, 95H, 96H). HONORS COURSE: TUTORIAL SEMINAR IN THEATRE ARTS.** (3 cr; prereq cand for honors in theatre arts and Δ)
Independent reading, thesis preparation, and discussion of research in selected fields.
- 5-100 (101, 102, 103). THEATRE PRACTICUM.** (2-6 cr; prereq permission of theatre practicum committee, §)
Individual creative projects meeting approval of a faculty committee in one or more of these areas: playwriting, directing, acting, and design.
- 5-101 (100). INTRODUCTION TO RESEARCH.** (3 cr; required of all majors in theatre arts except M.F.A. candidates; prereq sr, or grad theatre major)
Graduate research in theatre arts; selection of topics and methods of investigation.
- 5-115/5-116/5-117 (115-116-117). PLAYWRITING.** (3-3-3 cr; prereq 1-321 or §)
After evidence of thorough groundwork in the established techniques of the well-made play, the student is encouraged to use other, more experimental forms. 5-115: One-act play. 5-116/5-117: Full-length play.
- 5-131 (131). CREATIVE DRAMA.** (3 cr; prereq 1-501 or ¶1-501 or elementary education major or §...1-321 recommended)
Principles and methods of developing original dramatizations with children. Observation of children's classes in creative dramatics. Readings, projects, term papers.
- 5-132 (132). THEATRE FOR CHILDREN.** (3 cr; prereq 3-708 or 5-711 or §)
Selection, direction, and production of plays for children's audiences, coordinated with current productions of the Young People's University Theatre.
- 5-171, 5-172, 5-173 (171, 172, 173). HISTORY OF THEATRE.** (3,3,3 cr; prereq sr, or grad theatre major or §)
Plays, arts and crafts of the theatre from their beginnings to present. Reports and projects. 5-171: Ancient and Medieval. 5-172: Renaissance through mid-19th century. 5-173: Late 19th and 20th century.
- 5-177, 5-178, 5-179 (177, 178, 179). THEATRE BACKGROUNDS.** (3,3,3 cr; prereq sr with §, grad, 1-101 or equiv, 9 Upper Division cr in English, speech, classics or modern language; offered when feasible)
Selective examination of plays as part of the living theatre. Chronological, comparative study of development of theatrical elements in the drama from its origins through the present time. 5-177: Origins through 17th century. 5-178: 18th and 19th century. 5-179: 20th century.
- 5-186 (180). AMERICAN THEATRE.** (3 cr; prereq sr or grad theatre major or §)
The theatre as an aspect of American culture from 1752 to the present.
- 5-970 (181). DIRECTED READINGS.**
- Acting (Th)**
- 3-314, 3-315, 3-316 (54-55-56). STAGE FENCING AND COMBAT: HISTORY AND EXECUTION.** (1,1,1 cr; prereq 1-501 or ¶1-501)
History of weapons through the ages; fighting and fencing with these weapons—their use in stage-combat.
- 3-321/3-322 (61-62). ADVANCED ACTING.** (3 cr; 3-321f open only to students in major sequence B...3-321w open to others; prereq 1-322 or 1-326.
3-321: Presentation of scenes from great plays. 3-322: Continuation with emphasis upon stage dialects.
- 3-323 (63). RADIO AND TELEVISION DRAMA.** (3 cr; prereq 1-321, Spch 1-101...Spch 3-201 recommended)
Historical development of radio and television drama, including production, direction and acting techniques.
- 3-326 (77). THEATRE DANCE.** (3 cr; prereq 1-326 or §)
To acquaint actors with specific dance techniques and the practice and performance of dances in the theatre.

- 5-311/5-312/5-313 (118-119-120). VOICE PRODUCTION FOR THE THEATRE.** (3-3-3 cr; prereq grad and theatre major)
Physical exercises designed to free the human voice from unnecessary inhibitions and tensions. Work on prose, poetry and drama. Vocal exercises with piano. Required attendance at taped listening sessions.
- 5-321, 5-322, 5-323 (121, 122, 123). PROBLEMS IN ACTING.** (3,3,3 cr; prereq 3-321 or #)
Acting problems stemming from differences in genres and styles of dramatic production from the Greeks to the present. Emphasis on intensive scene and character analysis and on skill in communicating character and concept to an audience in individual and group performance.
- 5-324 (130). EXPERIMENTAL LABORATORY.** (3 cr; prereq 5-328 or #)
Advanced techniques in voice and movement.
- 5-326/5-327/5-328 (174-175-176). HISTORY AND TECHNIQUE OF STAGE MOVEMENT.**
(3 cr; prereq 5-171, 5-172, 5-173 and #)
The application of historical research in the areas of manners, games, and dances to techniques of body movement for the stage.
- 5-334/5-335/5-336 (127-128-129). PRODUCTION FOR THE LYRIC STAGE.** (3,3,3 cr; prereq Mus 5-470 or #)
Problems in acting, staging, and administration for the lyric stage.

Technical (Th)

- 3-512 (90). COSTUMING.** (3 cr; prereq 1-503)
Theory of design and construction of costumes for theatrical production.
- 3-514 (91). SCENE DESIGN.** (3 cr; prereq 1-503)
- 3-516 (92). STAGE LIGHTING.** (3 cr; prereq 1-503)
Theory and practice of lighting for theatrical production.
- 3-518 (89). AN INTRODUCTION TO THE VISUAL ARTS OF THE DRAMA.** (3 cr, §1-503, §3-707, §3-512, §3-514, §3-516; prereq 1-501)
Technical fundamentals of stagecraft, design, lighting, and costuming for B.F.A. candidates in acting.
- 5-501 (101A). SHOWBOAT LABORATORY.** (2-6 cr; prereq Δ , #)
- 5-512 (190). ADVANCED PROBLEMS IN COSTUMING.** (3 cr; prereq 3-512, 5-711 or #)
Theory and design of costumes; special projects.
- 5-514 (191). ADVANCED PROBLEMS IN SCENE DESIGN.** (3 cr; prereq 3-514, 5-711, or #)
Theory and design of stage scenery; special reports and projects.
- 5-516 (192). ADVANCED PROBLEMS IN STAGE LIGHTING.** (3 cr; prereq 3-516, 5-711, or #)
Theory of stage lighting. Special projects and reports.

Directing (Th)

- 3-707 (74). PLAY PRODUCTION IN THE SECONDARY SCHOOL.** (3 cr; prereq 1-501)
Technical fundamentals: stagecraft, design, lighting, and costuming.
- 3-708 (75). PLAY PRODUCTION IN THE SECONDARY SCHOOL.** (3 cr; prereq 3-707 or 1-503 and 3-514)
Fundamentals including the analysis and production of selected scenes.
- 3-709 (76). PLAY PRODUCTION IN THE SECONDARY SCHOOL.** (3 cr; prereq 3-708 or 5-712 and #)
Administration of dramatics program in high school. Direction of full-length play.
- 5-711/5-712/5-713 (111-112-113). STAGE DIRECTION.** (3-3-3 cr; prereq 1-321, 6 cr from 3-512, 3-514, 3-516)
5-711: Theory of direction. Exercises in blocking and production of short scenes. 5-712: Rehearsal problems and direction of two one-act plays. 5-713: Problems of theatre management and staging; direction of full-length play.
- 5-718 (114). THEATRE MANAGEMENT AND PROMOTION.** (3 cr; prereq 1-501 or §1-501 or #)
Theory and practice in ticket office procedures, house management, publicity, and promotion; special problems in college, community, children's and professional theatre.
- 5-721/5-722/5-723 (141-142-143). PRODUCTION OF TELEVISION DRAMA.** (3-3-3 cr; prereq 5-711 or equiv)

Course Offerings and Major Sequences

Televised drama produced and analyzed with reference to adaptation of techniques and theory from stage production. Intended primarily for theatre majors.

Interpretation (Th)

- 3-801 (Spch 81). **ORAL INTERPRETATION OF FICTION.** (3 cr; prereq 1-313 or 1-321 or Spch 1-101 or 1-106, jr)
Study of selected short stories. Solo and group readings.
- 3-802 (Spch 82). **ORAL INTERPRETATION OF POETRY.** (3 cr; prereq 3-801)
Study of selected lyric poems. Solo and group readings.
- 3-803 (Spch 83). **ORAL INTERPRETATION OF DRAMA.** (3 cr; prereq 3-801)
Study of selected plays. Solo and group readings.
- 5-811 (Spch 104). **HISTORY OF ORAL INTERPRETATION.** (3 cr; prereq 3-801 or #)
Study of selected oral and literary traditions from ancient times to the present.
- 5-813 (Spch 105). **THEORY OF READING AND ACTING.** (3 cr; prereq 3-802 or 3-803 or grad)
Exploration of aesthetic and literary theories as they relate to oral interpretation and acting.
- 5-821 (Spch 107). **GROUP READINGS.** (3 cr; prereq 3-802 or 3-803)
Advanced course in oral interpretation of imaginative literature. Problems in aesthetic analysis and ensemble performance. Reads theatre presentations.

SPEECH SCIENCE, PATHOLOGY, AND AUDIOLOGY (SSPA)

Required Background Courses:

- A. Spch 1-101 or 1-102 and 1-106
B. Psy 1-001/1-002†, 1-004/1-005†
C. Phil 1-002
D. Math 1-111

Requirements:

SSPA 3-101, 5-301, 5-302, 5-303, 5-304, 5-501, 5-504, 5-701, 5-702, 5-703

Recommended:

Lower Division students are urged to acquire a broad background in the natural and social sciences. Suggested courses are Anth 1-002, Biol 1-001/1-002†, Soc 1-001, Econ 1-001. Students should plan to begin their Upper Division programs in fall, spring, or summer terms.

UPPER DIVISION COURSES

- 3-100 (164). **CLINICAL OBSERVATION AND PRACTICE IN SPEECH PATHOLOGY AND AUDIOLOGY.** (1-3 cr per qtr [may be repeated]; prereq #) Staff
- 3-101 (99). **INTRODUCTION TO SPEECH PATHOLOGY AND AUDIOLOGY.** (3 cr)
Siegel, McDermott
Survey of concepts basic to understanding normal and abnormal speech and hearing function. Introduction to causes, characteristics, and modifications of communication problems.
- 5-202 (169). **SYMPOSIUM IN SPEECH SCIENCE, PATHOLOGY, AND AUDIOLOGY.**
(3 cr; prereq grad major or professional paid experience beyond undergrad major or #)
- 5-301 (119). **FUNDAMENTALS OF SOUND.** (3 cr) Speaks
Elements of acoustics necessary to understanding quantitative aspects of speech pathology and audiology.
- 5-302 (120). **ANATOMY AND PHYSIOLOGY OF SPEECH AND HEARING MECHANISMS.**
(3 cr; prereq 5-301 or #) Lassman, McDermott
Gross anatomy and function of structures related to respiration, phonation, articulation, and audition.
- 5-303 (121). **ACOUSTIC PHONETICS.** (3 cr; prereq 5-302 or #5-302) Speaks
Physiological and acoustical variables differentiating speech signals. Various phonemic

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classification systems including I.P.A. and Distinctive Feature Analysis; phonemic transcription is practiced.

- 5-304 (122). VOICE SCIENCE.** (3 cr; prereq 5-303) Speaks
Inspection of research data relevant to basic processes involved in speech production and perception. Topics: respiratory system as a generator, vocal folds and articulators as sound sources and vocal tract as an acoustic modifier of sound source. Laboratory experience and exercises.
- 5-305 (123). LABORATORY INSTRUMENTATION.** (3 cr; prereq 5-301 or #) Speaks
Description of basic concepts in electronics and of electroacoustic systems appropriate to the study of speech and hearing.
- 5-306 (176). HEARING SCIENCE.** (3 cr; prereq 5-301 or Psy 3-031 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.
- 5-501 (140). DIAGNOSIS AND EVALUATION OF SPEECH DISORDERS.** (4 cr; prereq 3-101 and 5-303 or #5-303, and #) Martin, Haidos
Consideration of research and clinical materials relative to construction, administration, and interpretation of various diagnostic instruments. Observation and participation in various diagnostic speech facilities.
- 5-502 (141). STUTTERING.** (3 cr; prereq 3-101 or #)
Analysis of materials relating to development, characteristics, and treatment of stuttering. Class demonstrations and individual projects.
- 5-503 (142). VOICE DISORDERS.** (3 cr; prereq 3-101, 5-302 or #) Starr
Voice disorders (pitch, loudness, quality), their symptomatology, etiology, diagnosis, and treatment.
- 5-504 (143). ARTICULATION DISORDERS.** (3 cr; prereq 3-101, 5-303 or #) McDermott
Research and theory of nature, etiology and treatment of articulatory problems.
- 5-505 (144). NEUROMUSCULAR DISORDERS.** (2 cr; prereq 5-302, 5-504 or #)
Survey: cerebral palsy, multiple sclerosis, muscular dystrophy, etc; symptomatology and etiology and approaches to diagnosis and treatment of communication problems that occur in conjunction with them.
- 5-506 (145). APHASIA.** (2 cr; prereq 3-101, 5-302 or #)
Historical and neurological background, differential diagnosis, examination and treatment of patients.
- 5-507 (146). CLEFT PALATE.** (2 cr; prereq 5-302, 5-504) Starr
Survey of medical, dental, and communication problems that occur in conjunction with cleft palate.
- 5-508 (147). REHABILITATION OF THE LARYNGECTOMIZED.** (3 cr; prereq 3-101, 5-302 or #) Henrikson
Historical and contemporary types of surgical intervention. Relation between types of surgery and development of speech. Methods of initiating and developing communication. Use of artificial larynx. Cooperation with other rehabilitation agencies and personnel.
- 5-512 (150). SPEECH DEVELOPMENT AND RETARDATION.** (3 cr; prereq 3-101) Siegel
Theory and experimental research dealing with speech development as related to delayed or retarded speech.
- 5-701 (170). HEARING DISORDERS.** (3 cr; prereq 3-101, 5-301 and 5-302, or #) Lassman, Chaiklin
Basic orientation to audiology. Symptomatology and pathology of hearing disorders, their medical and surgical treatment. Clinical and educational management. Psychological effects of hearing impairment.
- 5-702 (171). AUDIOMETRY I.** (4 cr; prereq 5-301, 5-302, 5-701 or #) Chaiklin, Hoel
Pure tone air and bone conduction audiometry; narrow and broadband masking theory; relations among audiometric results, otopathology and communication disorders; calibration standards, care of audiometers, screening audiometry. Supervised practicum in addition to class meetings.
- 5-703 (172). COMMUNICATION PROBLEMS OF THE HEARING-IMPAIRED.** (3 cr; prereq 5-701 or #)
Effects of impaired hearing on speech and language development. Development of speech and language for hearing impaired individuals through speech, speed-reading, auditory training and other special methods and philosophies.
- 5-704 (177). NOISE AND HEARING.** (3 cr; prereq 5-702 or #) Ward

Course Offerings and Major Sequences

Temporary and permanent effects of steady, intermittent, and impulse noises on hearing. Noise measurement, reduction, and control; ear defenders and their limitations. Hearing conservation programs; pre-employment testing and monitoring audiometry.

- 5-705 (180). AUDITORY TRAINING.** (3 cr; prereq 5-702 or #)
Problems of auditory discrimination and of hearing aid usage in persons with impaired hearing. Methods of developing skills in listening with and without acoustic amplification. Supervised practice with auditorily handicapped children and adults.
- 5-706 (181). SPEECH FOR THE HEARING-IMPAIRED.** (3 cr; prereq 5-701 or #)
Speech problems resulting from impaired hearing. Survey of approaches of developing and teaching speech to the hearing impaired individual.
- 5-707 (182). LIPREADING AND LIPREADING METHODS.** (3 cr; prereq 5-701 or #)
Theory, principles, and methods of teaching lipreading. Considerations of visual perception and learning. Supervised practice in teaching lipreading to hard-of-hearing persons.
- 5-708 (183). LANGUAGE FOR THE HEARING-IMPAIRED.** (3 cr; prereq 5-701 or #)
Moore's
Language problems resulting from impaired hearing. Survey of approaches of developing and teaching language to the hearing impaired individual.
- 5-970 (101, 102, 103). DIRECTED READINGS.** (Cr or [may be repeated]; prereq #) Staff

STATISTICS (Stat)

Required Background Courses—Math 1-441, 1-442/1-443/1-444

- **Major Sequence for B.A.**—Calculus through Math 5-602 or 5-613, 5-282 or 5-211, and 21 cr in Upper Division courses including Stat 5-131/5-132/5-133.

LOWER DIVISION COURSES

- 1-051 (41). INTRODUCTION TO IDEAS OF STATISTICS.** (3 cr; prereq Math 1-111 or #)
Presentation and analysis of data. Probabilistic models for inference. Types of inference and decision procedures. Emphasis on concepts rather than computation.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Courses listed below which are offered in other colleges may be taken for credit in the Arts College by students majoring or minoring in statistics.

- 3-091 (90). INTRODUCTION TO PROBABILITY AND STATISTICS.** (4 cr, §§5-121, §5-131; prereq differential and integral calculus)
Elementary probability and probability distributions; sampling and elements of statistical inference.
- 5-101 (101). INTRODUCTION TO DECISION THEORY.** (3 cr, §5-132; prereq Econ 5-111, or Math 1-142, or Math 1-442, or #)
Elements of probability; basic concepts in statistical decision theory; relationship to game theory and other types of decision problems; prediction and inference.
- 5-121/5-122/5-123 (121-122-123). THEORY OF STATISTICS.** (3-3-3 cr, §§5-131/5-132/5-133; prereq Math 1-443 or equiv)
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.
- 5-131/5-132/5-133 (131-132-133). THEORY OF STATISTICS.** (3-3-3 cr; prereq ¶Math 3-445 for 5-131...Math 5-601/5-602 for 5-132/5-133, or equiv)
5-131: Probability models, univariate and bivariate distributions, independence, basic limit theorems. 5-132/5-133: Statistical decision theory, sampling, estimation, testing hypotheses, parametric and nonparametric procedures for one-sample and two-sample problems, regression, analysis of variance.
- QA 5-171 (171). STATISTICAL METHODS FOR SAMPLE SURVEYS.** (3 cr; prereq 3-054 or equiv)
Introduction to commonly used sampling methods, including stratified sampling, multi-stage sampling and cluster sampling, methods of estimation, including ratio and re-

gression estimates; design of surveys taking into account various costs; statistical measurement and control of nonsampling errors.

QA 5-181 (181). QUALITY CONTROL AND INDUSTRIAL STATISTICS. (3 cr; prereq 3-054 or equiv)

Acceptance sampling by attributes and variables; construction of single, double, and multiple acceptance sampling plans; statistical control charts and their operations; effectiveness of control charges; modification of control charts for special problems.

5-211/5-212 (144-145). THEORY OF SAMPLE SURVEYS. (3-3 cr; prereq 5-123 or 5-133)

Mathematical treatment of survey sampling, including stratified and multistage sampling, models for nonsampling errors.

PubH 5-450/5-452/5-454 (110A-110B-110C). STATISTICAL METHODS (BIOMETRY). (3-3-3 cr; prereq familiarity with basic concepts of calculus desirable and ¶5-451)

See Biometry listings.

PubH 5-451/5-453/5-455 (111A-111B-111C). STATISTICAL METHODS LABORATORY (BIOMETRY). (2-2-2 cr; prereq ¶PubH 5-450/5-452/5-454)

See Biometry listings.

IE 5-510 (171). QUALITY CONTROL. (3 cr; prereq Stat 3-091 or Stat 5-131 or #)

Quality standards, application of statistical methods and sampling theory, interpretation of results and corrective action.

IE 5-530 (177). INDUSTRIAL SAMPLING TECHNIQUES. (3 cr; prereq IE 5-510)

Selection and operation of attributes sampling plans; operating characteristic curves; sampling techniques for continuous production; variables sampling plans; administrative and economic comparisons.

IE 5-540 (198). DESIGN AND ANALYSIS OF EXPERIMENTS I. (3 cr; prereq ME 3-720 or equiv or #)

Design of factorial experiments, analysis of variance, regression, orthogonal contracts, incomplete block designs.

IE 5-541 (199). DESIGN AND ANALYSIS OF EXPERIMENTS II. (3 cr; prereq 5-540 or #)

Crossed, nested and mixed classification designs; quantitative and qualitative factors; block confounding; fractional factorial experiments; response surfaces.

Math 5-661/5-662 (133B-134B). PROBABILITY WITH TECHNOLOGICAL APPLICATIONS. (3-3 cr; prereq Stat 5-131 and #)

Spectral analysis of stationary processes, linear and nonlinear transformations, recurrent events, random walk and diffusion, Markov chains, Poisson processes.

Math 5-681/5-682/5-683 (178A-B-C). INTRODUCTION TO PROBABILITY. (3-3-3 cr; prereq Math 5-602 or Stat 5-133 or #)

Probability theory and its applications; emphasis on logical development.

5-900 (182). TUTORIAL COURSE. (Cr ar; prereq #)

Students whose needs are not met by current offerings may obtain content of regular courses or special areas by directed study.

5-911/5-912/5-913 (181A,B,C). TOPICS IN STATISTICS. (3-3-3 cr; prereq 5-123 or 5-133 and #)

Topics vary according to needs and available staff; may be repeated for credit.

STUDIO ARTS

See Art, Studio Arts

SWEDISH

See Scandinavian Languages

THEOLOGICAL TRAINING, PREPARATION FOR

The pre-theology interdepartmental major is not the only way to prepare for study at a seminary; departmental majors (e.g., history, sociology, classics, Hebrew, philosophy) may serve the same purpose and are approved by nearly all seminaries (see the *Statement on Pre-Seminary Studies*, published by the American Association of Theological Schools, available from any of the advisers in the program). The student interested in religious studies, but not necessarily entering

Course Offerings and Major Sequences

a seminary, should not elect this program, but should consult the statement on religious studies in this bulletin. Even if students planning to enter seminary do not elect the pre-theology major, it is recommended they discuss their plans with a member of the CLA panel of advisers on Preparation for Theological Training in addition to their major advisers. A list of the names of current members of this panel is available in 106 Johnston.

Students preparing to enter a particular seminary (or graduate department of theology) should contact that seminary or department (or the Theological Education office of their own denomination) to learn any specific requirements or recommendations which apply to them, and to request a seminary catalogue. Visits to nearby seminary campuses or interviews with visiting seminary representatives can also be arranged through the advisers.

For the College Group Distribution Requirements see page 9. The following are specific recommendations and requirements for the pre-theology major.

Major Program for B.A./Lower Division—

- A. Greek (or Hebrew) is the language strongly recommended, particularly if a student is beginning language study.
- B. The following courses are required of pre-theology majors:
 - Phil 1-001 or 1-002 (Group A, Area 1)
 - Psy 1-001 and 1-002 (Group C, Area 1)
 - Hist 1-051, 1-052, 1-053, or 3-051, 3-052, 3-053 (Group C, Area 3)

Major Program for B.A./Upper Division—

The following are specific requirements, not all of which need be met by Upper Division courses. However, at least 60 Upper Division credits must be earned in the major area.

- A. *Fine Arts*:
9 cr minimum selected from art, art history, music, or theatre arts
- B. *History*:
18 cr minimum in medieval and modern history (at least 9 cr in modern history)
- C. *Language and Literature*:
9 cr minimum in English (above freshman English); 9 cr minimum in Greek, Hebrew, Latin, or a modern foreign language; or in a foreign literature in translation; or humanities courses involving literature
- D. *Philosophy*:
21 cr minimum, including history of philosophy (Phil 3-002, 3-003, 3-004)
- E. *Social Sciences*:
12 cr minimum in anthropology, economics, geography, political science, sociology, speech, or psychology

TIBETAN

See East Asian Languages

UNIVERSITY COLLEGE (UC)

(University College)

UPPER DIVISION COURSES

3-075. INDEPENDENT STUDY. (3-15 cr; prereq Δ)

Students enrolled in any college of the University desiring to undertake independent undergraduate study outside the confines of formal course work may submit a proposal to the University College Committee to receive credit for such

study. The proposal should be developed in sufficient detail to show the student's undergraduate program to date; an outline of the balance of the program; the objectives of the student; the way in which the proposed independent study would fit into, supplement, build upon, or otherwise enrich his degree program; an outline of the proposed independent study; the nature and organization of the work or other experience to be involved; the proposed time framework for such independent study; the availability, if any, of outside supervision, assistance or monitoring of the experience; the nature of the proposed product—e.g., research paper, evaluative report of the experience involved, preparation of research model, instructional materials, and so on; the credit requested for such projects; the faculty member or members prepared to monitor such independent study and to decide upon the amount of credit to be awarded for it; the consent of his regular academic adviser; and the deadline for submission of the proposed product.

URBAN STUDIES, INTERDEPARTMENTAL MAJOR IN

Students may graduate with an interdepartmental major in Urban Studies by completing course offerings in a number of departments focusing on the city as the central problem area of intellectual concern. This major can be useful to the student seeking either a base for post-baccalaureate work in planning, or one of the disciplines concerned with the city, or as a generalizing intellectual experience.

The major program consists of at least 75 Upper Division credits, including at least 36 from the list of urban studies core courses. These courses include:

Econ 5-661—Economics of Location

Geog 5-371—Urban Geography

Geog 5-375,5-376—American Cities—Location and Geographic Design

Geog 5-732—American Cities—Field Course

Hist 5-354,5-355,5-356—American Urban History

Pol 5-316—Introduction to Community Politics

Pol 5-317—Community Power Structures

Pol 5-318—Metropolitan Government and Politics

Soc 5-601—Urban Sociology

SSci 3-503—Urban Crisis

Consult one of the following advisers for information concerning this major: Professors Theodore Anderson, Sociology; Hyman Berman, History, Social Science Program; John R. Borchert, Geography; Gene Burd, Journalism; David Cooperman, Sociology; Daniel Gerlaugh, Civil Engineering (Urban Transportation); Hosni Iskander, Architecture (Urban Planning); John Modell, History; Herbert Mohring, Economics; Thomas Scott, Political Science.

ZOOLOGY (Zool)

(College of Biological Sciences)

A departmental major leading to the B.S. degree is offered in the College of Biological Sciences.

See also listings under Biology.

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

Course Offerings and Major Sequences

- 3-980f,w,s (98). **UNDERGRADUATE SEMINAR.** (1 cr per qtr; prereq sr, major in biological sciences, #) Staff
A discussion of biological topics of current interest.
- 3-990f,w,s (99). **INDIVIDUAL WORK IN SOME SPECIAL DISCIPLINE.** (Cr ar; prereq Biol 1-002 or 3-011 and #) Staff
- 5-052f (52). **GENERAL AND COMPARATIVE EMBRYOLOGY.** (5 cr; prereq Biol 1-002 or 3-011) Spratt
Embryological development of vertebrate and invertebrate forms.
- 5-066f,s (65). **HISTOLOGY.** (5 cr; not open to regular 3-yr premed or predent students; prereq Biol 1-002 or 3-011) Olson
Microscopic structures of tissues and organs.
- 5-071s (71). **PRINCIPLES OF INVERTEBRATE BIOLOGY.** (5 cr; prereq Biol 1-002 or 3-011)
Basic characteristics of invertebrates (exclusive of insects); emphasis on functional, adaptive, and evolutionary principles. Laboratory will include original research.
- 5-076w/5-077s (75-76). **INTRODUCTORY ORNITHOLOGY.** (3-3 cr; prereq Biol 1-002 or 3-011) Warner
Laboratory and field course in structure, classification, distribution, migration, habits, habitats, and identification of birds. Distinguishing characteristics and life histories of various mammal groups, particularly those represented in the state.
- 5-093f (93). **INTRODUCTION TO ANIMAL PARASITOLOGY.** (5 cr; prereq Biol 1-002 or 3-011) Wallace
Elementary course dealing with parasitic protozoa, worms, and arthropods, and their relation to diseases of man and animals.
- 5-096f (96). **ORGANIC EVOLUTION.** (3 cr; prereq Biol 1-002 or 3-011) Merrell
Survey of evidence for and causes of evolution.
- 5-104f (105). **COMPARATIVE ANIMAL PHYSIOLOGY.** (5 cr; prereq Biol 1-002 or 3-011, Chem 3-302 or #) Schmid
Introduction to animal physiology, emphasizing functional aspects of organ systems from comparative viewpoint.
- 5-107f (107). **PROTOZOOLOGY.** (4 cr; prereq #; offered 1971-72 and alt yrs) Kerr
Introduction to taxonomy, morphology, physiology, development and genetics of free-living protozoa.
- 5-112w (112). **ADVANCED GENERAL PHYSIOLOGY.** (3 cr; prereq Biol 5-051 or Zool 5-104 or equiv and #) Schmid, Sheridan
Topics of current interest in physiology.
- 5-114f (114). **SENSORY PHYSIOLOGY.** (3 cr; prereq Biol 5-051 or Zool 5-104; offered 1970-71 and alt yrs) Sheridan
Survey of general properties of receptor organs with an emphasis on visual, auditory, and mechano-receptor units.
- 5-116w (116). **POPULATION DYNAMICS.** (2 cr; prereq Biol 3-041 or #...Math 1-444 recommended; offered 1971-72 and alt yrs)
Seminars and lectures on verbal mathematical population theories; emphasis on relationship to laboratory and field data.
- 5-117w (117). **THEORETICAL BIOLOGY.** (3 cr; prereq #; offered 1970-71 and alt yrs)
Role of semantic and mathematical theory in biology, including philosophical foundations and methodology. Detailed examples from various fields of biology.
- 5-121s (121). **ICHTHYOLOGY.** (3 cr; prereq 15 cr including Biol 1-002 or 3-011) Underhill
Taxonomy and habits of North American fishes, especially those of upper Mississippi drainage.
- 5-124f (122). **VERTEBRATE BIOLOGY.** (3 cr; prereq Biol 1-002 or 3-011 and #) Underhill
Survey of vertebrates. Their biology, taxonomy, and distribution.
- 5-125f (123). **VERTEBRATE FAUNA LABORATORY.** (2 cr; prereq 5-124 or equiv and #) Underhill
Survey of vertebrate groups native to Minnesota and neighboring states.
- 5-126w (124). **VERTEBRATE ANATOMY LABORATORY.** (3 cr; prereq 5-124 or equiv and #) Underhill
Comparative study of vertebrate systems.
- 5-134w (140). **GENERAL AND COMPARATIVE ENDOCRINOLOGY.** (3 cr; prereq Biol 3-011, 3-021, Chem 3-302 or #; offered 1971-72 and alt yrs) Herman
Survey of structure and function of invertebrate and vertebrate endocrine systems.

- 5-135s (141). **GENERAL AND COMPARATIVE ENDOCRINOLOGY LABORATORY.** (2 cr; limited to 10-15 students; prereq 5-134, #; offered 1970-71 and alt yrs) Herman
Individual laboratory investigations of selected problems of endocrinology. Topics arranged by consultation with instructor.
- 5-136 (148). **ADVANCED GENERAL AND COMPARATIVE ENDOCRINOLOGY.** (2 cr; prereq 5-134 and 5-135, or #; offered 1971 and alt yrs) Herman
Lectures on several specific areas of current endocrinologic interest. Topics will vary, but will normally include such subjects as the endocrinology of special taxonomic groups, neurosecretion, hormone action, pheromones, hormonelike substances, plant hormones, hormone chemistry, etc.
- 5-144w (145). **PARASITIC PROTOZOA.** (3 cr; prereq 15 cr incl Biol 1-002 or 3-011 and #)
Wallace
Structure, life histories, and economic relations of protozoal parasites of man and animals; laboratory diagnosis.
- 5-146s (146). **EXPERIMENTAL PARASITOLOGY.** (3 cr; prereq 5-093 or #) Gilbertson
Discussion sessions and laboratory investigations designed to illustrate the relationships between metazoan parasites and their hosts.
- 5-164s (164). **FINE STRUCTURE OF ANIMAL CELLS.** (3 cr; prereq Biol 5-601 or equiv and #) Johnson
Cell structure and function on an organelle basis, emphasizing ultrastructural research. Topics will include macromolecular synthesis, bioenergetics, cell movement and cell division.
- 5-165s (165). **ADVANCED CYTOLOGY LABORATORY.** (2 cr; prereq 5-164 or ¶) Johnson
Microscopy, cell cultures, and radioisotope applications will be introduced. Emphasis on individual projects. For example, these may include autoradiography, cell fractionation or electron microscopy.
- 5-170s (170). **PHYSIOLOGICAL ECOLOGY.** (4 cr; prereq Biol 5-051 or Zool 5-104 and Biol 3-041...statistics recommended, #) Schmid
Current problems of distribution and abundance of animals in the natural environment.
- 5-171w (171). **GENETICS AND SPECIATION.** (3 cr; prereq 15 cr in biology incl GCB 3-025)
Merrell
Application of genetic principles to problems of speciation and evolution.

Itasca Biology Session Courses

- 5-814su (115). **NATURAL HISTORY OF INVERTEBRATES.** (5 cr; prereq 15 cr in Zoology; offered at Itasca Biology Session)
Taxonomic and ecological survey of local fauna, detailed and independent ecological study of several taxonomic groups.
- 5-819su (119). **NATURAL HISTORY OF THE VERTEBRATES.** (5 cr; prereq 15 cr in zoology; offered at Itasca Biology Session)
Taxonomic and biological survey of the local fauna, detailed and independent study of the vertebrate classes, exclusive of the birds.
- 5-834su (135). **FIELD ORNITHOLOGY.** (5 cr; prereq 15 cr in Zoology; offered in Itasca Biology Session)
Field and laboratory studies of ecology and life histories of the birds in the Itasca Park region.
- 5-843su (143). **ANIMAL PARASITES.** (5 cr; prereq 15 cr incl Biol 1-002 or Biol 3-011; offered in Itasca Biology Session)
Parasites of local fauna with special reference to helminths.

Related Courses Recommended from Other Colleges

- AnSc 5-314w (150)—Behavioral Physiology
Ent 3-175s (74)—Introductory Entomology
Ent 5-025f (125)—Insect Morphology
Ent 5-026w (126)—Embryology and Development of Insects
Ent 5-027s (127)—Insect Metabolism and Coordination
Ent 5-150f (130)—Principles of Systematic Entomology
Ent 5-275f (144)—Medical Entomology
FW 3-277w (77)—Mammalogy
VAna 5-120w (120)—Essentials of Vertebrate Development and Structure
VPP 5-310s (109)—General Endocrinology
VPP 5-311f (111)—Reproductive Physiology
VPP 5-313w (134)—Avian Physiology





Spherical Collisions
Sphere Approach
Collision Area Per 1
particle



Collision Cross-Section
 $= \pi \sigma^2$

Volume swept
in 1 sec
 $\sqrt{v} \pi \sigma^2$



Section III

PREPROFESSIONAL CURRICULA IN THE COLLEGE OF LIBERAL ARTS

A. SCHOOL OF ARCHITECTURE AND LANDSCAPE ARCHITECTURE

Two professional courses of study are offered through the School of Architecture and Landscape Architecture: a 6-year program in architecture and a 5-year program in landscape architecture. (Both programs are currently being revised and candidates are urged to consult with an adviser in architecture and landscape architecture at 110 Architecture Building.)

Note—See section II of this catalog or refer to the *Institute of Technology Bulletin* for 1971-73 for admission requirements and/or curriculum alternatives and course descriptions.

B. COLLEGE OF BIOLOGICAL SCIENCES

The College of Biological Sciences offers the bachelor of science degree with majors in biology, biochemistry, botany, microbiology, or zoology. (One may also get a major in CLA in biology or microbiology. See Section II.) Irrespective of the major, however, each student must complete the same core sequence of courses in biology, the physical sciences, and mathematics.

The core sequence was designed in recognition of the following facts: (1) that there is an underlying similarity in the functioning of all biological systems when viewed at the molecular and cellular levels; (2) that to train students for careers as biologists great emphasis must be given to training in the physical sciences and mathematics; and (3) that to maintain student interest core courses must be taught so that they emphasize physical science methodologies in the solution of biologically important problems.

Admission Requirements

Students normally apply for admission to the College of Biological Sciences during the third quarter of their sophomore year. Specific requirements are:

1. Equivalent of 75 quarter credits with at least a 2.00 GPA.
2. Completion of 30 credits in mathematics, physical, and/or biological sciences with at least a 2.50 GPA in biological science courses.

During a student's freshman and sophomore years, he should, as a minimum, complete the Biol 1-002 requirement, Chem 1-004/1-005, 1-006 and begin taking the required courses in mathematics (Math 1-441, 1-442/1-443/1-444) in addition to completing freshman English composition. Many students take Chem 3-301/3-302 and begin to complete courses in the biology core sequence during their sophomore year.

Students should contact the College of Biological Sciences Office in the Zoology Building as soon as they are fairly certain they wish to major in this area so they can be assisted with their program planning.

C. SCHOOL OF BUSINESS ADMINISTRATION

The purpose of the prebusiness curriculum is to combine courses in liberal education with preliminary basic courses in business administration and economics.

Preprofessional Curricula

In recognition of the widening social responsibility of business management, the student is urged to elect courses in several fields outside of business administration and economics in addition to fulfilling the requirements listed below.

To be eligible for admission to the School of Business Administration, the student must present approximately 90 credits, earned in a recognized college or university with a scholarship average of at least C. (Physical education and personal orientation course credits are not counted for credit by the School of Business Administration.)

The School of Business Administration offers courses leading to the degree of bachelor of science in business (regular or accounting program). Students interested in business should obtain, as soon as possible, a prebusiness program planning folder from the School of Business. Students from the Arts College preparing to enter the school must satisfy the following prebusiness requirements.

Lower Division Requirements for Admission to Programs Leading to Degree of Bachelor of Science in Business

1. Communication, Language, Symbolic Systems

- a. Freshman English—9-12 credits (satisfaction of Arts College freshman English requirement)

Engl 1-001/1-002/1-003 (9 cr)

Comm 1-001/1-002/1-003—Communication (12 cr)

Exemption from requirement

- b. Mathematics—10 or more credits

Math 1-141 (or Math 1-441)—College Algebra

Math 1-142—Calculus

Math 0-009, Preparatory Mathematics, may be prerequisite for Math 1-141 or 1-441; Math 1-008 may be a prerequisite for Math 1-410. Students who plan to take course work in mathematics beyond the level of elementary calculus should take Math 1-442 and 1-443 rather than Math 1-142.

2. Physical and Biological Sciences—9 credits

In a single natural science to be selected from botany, chemistry, geology, physics, zoology, or NSci 1-004/1-005†, 1-006 (Physical World). All courses must include laboratory. This requirement can be met only with the following courses (or higher numbered courses):

Biol 1-001/1-002†—General Biology (10 cr)

Chem 1-004/1-005†—General Principles of Chemistry (10 cr)

Phys 1-010/1-020/1-030 and 1-015/1-025/1-035—Introduction to Physical Science (12 cr)

NSci 1-004/1-005†, 1-006—Physical World (12 cr)

Geo 1-001/1-002—Physical Geology, Historical Geology (9 cr)

3. Man and Society—17 credits

Econ 1-001/1-002† (8 cr)

Psy 1-001/1-002† (6 cr)

Soc 1-001 (3 cr)

4. Artistic Expression—9 credits

Students must fulfill the University requirement of 9 credits in artistic expression before entering the School of Business Administration. Courses in the following departments, colleges, and schools within the University can be used for this purpose:

Humanities, rhetoric, classics, English literature, foreign literature, theatre arts, architecture, art, and music.

Not all courses in these departments, colleges, and schools, however, can be used. Students should see a planning folder prepared for use in selecting courses to meet this requirement. This planning folder is available in the prebusiness counseling office, 206 Business Administration Building, and in the College of Liberal Arts Lower Division offices.

5. Business Courses—9 credits

Acct 1-024/1-025/1-026—Principles of Accounting (9 cr)

6. Students planning to enter the B.S.B. accounting program are required to complete Comp 1-027, Advanced Writing (3 cr) in addition to the above.
7. Electives to complete the approximately 90 credits required for admission.

D. SCHOOL OF DENTISTRY

The dentistry program consists of at least 2 years of prescribed liberal arts work, during which the students are registered in the Arts College and are subject to its regulations, plus 4 years in the School of Dentistry, from which they receive the degree of doctor of dental surgery (D.D.S.). At the end of the second year in dentistry, students in good standing are eligible for the bachelor of science (B.S.) degree if they have met the liberal arts distribution requirements described in the *School of Dentistry Bulletin*.

Requirements for Admission

General—A minimum of 90 quarter credits (60 semester hours) from an accredited liberal arts college is preferred, but at least 3 years of liberal arts study is preferred. The minimum scholastic average for consideration is 2.00, but admission is on a competitive basis and an average well above 2.00 is usually necessary.

The required courses and minimum credits accepted are given below. The science courses must include laboratory instruction.

1. English—12 quarter credits. If basic English course is less than 12 quarter credits, additional credits may be completed in composition, literature, etymology, or speech to satisfy minimum requirement of 12 quarter credits.
2. General Biology or General Zoology—10 quarter credits.
3. Physics—12 quarter credits.
4. General Principles of Chemistry—12 quarter credits.
5. Organic Chemistry—8 quarter credits. Course must contain both aliphatic and aromatic series.
6. Mathematics—Background in mathematics at least through college algebra as demonstrated by college validation or credit.

Only under unusual circumstances will P credits on a P-N (pass-no credit) basis be accepted for required courses. It is expected that applicants will not exceed the following number of P credits in elective courses: 6 credits for 2-year students, 15 credits for 3-year students, and 25 credits for 4-year students.

The elective courses should be selected to give the student as broad and liberal an education as possible within the limits of time available. A proper distribution of courses in the following categories of knowledge is recommended: (1) communication, language, symbolic systems; (2) physical and biological sciences; (3) man and society; (4) artistic expression.

Students are expected to select the following preferred electives if at all feasible: psychology, speech, comparative anatomy, and a foreign language. Additional electives can be chosen from a least these subjects: analytical chemistry, anthropology, basic drawing, classics, economics, etymology, genetics, history, humanities, logic, political science, and sociology.

A maximum of 5 quarter credits in ROTC courses may be accepted as part of the 90 credits; credits in physical education, human anatomy, physiology, histology, and microbiology are not counted as part of the minimum 90 credits.

Students anticipating graduate study after earning the D.D.S. degree should take additional credits in higher mathematics and the sciences.

At the University of Minnesota, courses satisfying requirements for admission described above are met by several courses. For information, contact the School

Preprofessional Curricula

of Dentistry, or the special predentistry adviser in the Lower Division of the College of Liberal Arts.

Dental Aptitude Test—All applicants are required to take the Dental Aptitude Test. It is given three times a year, usually in October, January, and April. A spring date is strongly discouraged for candidates desiring admission that fall. A good time to take the test is during the first quarter of the sophomore year, or as soon as the courses in biology or zoology and general chemistry have been completed. Although the test generally measures aptitudes rather than special knowledge, some questions are specific and detailed; thus a review of biology and chemistry prior to taking the test is advisable. An application form and a brochure describing the test and listing the testing dates are available from the Office of Admissions and Records, 6 Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455.

Residence Requirements—First choice is given to Minnesota residents, second choice to residents of neighboring states that do not have dental schools, and third choice to other nonresidents who have acceptable reasons for attending the University of Minnesota School of Dentistry. Nonresidents are accepted only if their scholarship has been outstanding and if their other qualifications indicate unusual promise for the study of dentistry and a career in science.

The Committee on Admissions will give preference to those applicants who have high scholastic records in college; who make satisfactory scores on the dental aptitude test; who will have completed all course requirements by the end of the usual academic year previous to the desired date of admission; who, after having been granted a provisional acceptance, maintain an academic record of quality at least as good as the record at the time of the provisional acceptance; and who, in all other respects, give promise of becoming successful students and dentists of high standing.

Application Procedures

Application blanks can be secured from the Office of Admissions and Records, 6 Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455. Applications should be filed between October 1 and April 15 of the academic year prior to the fall quarter the applicant desires to enroll in the School of Dentistry. While the closing date for application is April 15, early filing is encouraged since late application may be to the student's disadvantage. Applicants may be asked to appear for a personal interview at the discretion of the Committee on Admissions. The committee is most willing to grant an interview to any applicant who requests this.

Seven-Year Program in Arts and Dentistry Leading to Degrees of Bachelor of Arts (from Arts College) and Doctor of Dental Surgery (from School of Dentistry)

Students in this combined course must complete all the distribution requirements of the Arts College and must earn 135 credits including the usual pre dental requirements. Of the 135 credits, 45 must be earned in residence in the Arts College Upper Division and a minimum of 30 must be in Upper Division courses.

The Arts College credits must include a minor and 15 Upper Division credits outside the major and minor areas. Since the major area is dentistry, the 15 Upper Division elective credits must be in the humanities and social sciences. An average of C must be maintained in all University of Minnesota courses, in all transfer credits applicable to the B.A. degree, and in courses taken in residence in Upper Division.

During his third year, the student elects work in Upper Division, subject

to the approval of the Scholastic Committee. The course work of the first 2 years in dentistry, when completed according to the standards of the school, is accepted in lieu of the major for the B.A. degree. The D.D.S. degree is earned by 2 more years' work.

E. COLLEGE OF EDUCATION

All students who plan to receive a teacher's certificate from the state of Minnesota upon graduation from the University of Minnesota (Minneapolis and St. Paul) must complete a B.S. degree program in the College of Education. For most curricula, students begin as freshmen in the College of Liberal Arts and transfer to the College of Education after 1 or 2 years of preprofessional general education.

Controlled Growth—In keeping with the University policy of controlled growth, the number of applicants for admission to the college who can be accepted in elementary education and in the secondary academic teaching areas is limited. Not all students completing the preparatory curricula can expect to be admitted to teacher education programs on the Minneapolis Campus, even if they meet minimum requirements. Admission is competitive with overall and major grade averages among the factors to be considered.

Curricula in Which Students Normally Begin Directly in College of Education

Physical Education
Recreation and Park Administration

These curricula are described in the *College of Education Bulletin*. Arts College students who decide on one of the above majors should transfer to the College of Education as soon as possible.

Curricula in Which Students Normally Spend Freshman Year in Arts College

Art Education
Business Education
Distributive Education
Industrial Education
Music Education

Requirements for Transfer to College of Education

1. Students planning to transfer to these majors are expected to complete 45 quarter credits with a 2.00 (C) average. Art education and music education students are also expected to present 2.50 (C+) average on all courses taken in the major. During freshman year, students take CLA courses from the appropriate curriculum described in the *College of Education Bulletin*.
2. Art education students should include in their freshman year a minimum of 15 credits of art with at least one course in each of following five areas: art history, design theory, drawing and painting, sculpture, and design in materials.
3. Industrial education students should include courses in mathematics, physical science, and English in freshman year.
4. Music education students should include courses in the materials and structure of music (9 credits), individual applied music on major instruments (6 credits), and University chorus, band, or orchestra (3 credits), in freshman year.

Application Procedures

1. A student should apply for transfer *early* in quarter in which he will meet above-listed criteria (usually spring quarter of freshman year).

Preprofessional Curricula

2. Student makes application at "Transfer" window, 6 Morrill Hall.
3. Student should complete necessary clearances as outlined on clearance form issued at time of application for transfer.

Curricula in Which Students Normally Spend 2 Years in Arts College Before Transfer

Biological Science	Geography	Political Science
Chemistry	German	Russian
Earth Science	History	Sociology
Economics	Language Arts	Spanish
Elementary Education	Latin	Speech
English	Mathematics	Speech Pathology
French	Physics	

Requirements for Consideration for Transfer to Academic Major in College of Education (speech pathology major see College of Education Bulletin)

1. 90 quarter credits with 2.00 (C) GPA. (English, speech, and social studies areas will give preference to students with an average of 2.30 or higher.)
2. 15 quarter credits in a major field with 2.50 (C+) GPA.
3. 10 quarter credits in a minor field with 2.00 (C) GPA. (For those individuals taking broad field majors, minors may be subdivisions of the broad field major and student should present a minimum of 25 credits in the major.)
4. Freshman English: Comm 1-001/1-002/1-003 or Engl 1-001/1-002/1-003 or 1-311H/1-312H/1-313H or exemption.
5. 48 credits from following categories as indicated. Courses used to meet first and second requirements above may also be included in these 48 credits:
 - a. Communication, Language, or Symbolic Systems (9 cr)—English and foreign language communication skills; linguistics, rhetoric, logic, philosophic analysis; mathematics. Freshman English may not be included.
 - b. Physical and/or Biological Science (12 cr).
 - c. Man and Society—Psy 1-001/1-002†. In addition, 12 credits from at least two of following fields: history, geography, political science, sociology, anthropology, and economics.
 - d. Artistic Expression—9 credits from literature, humanities, art, and music. Freshman English may not be included.
6. PubH 1-003 or 3-001 (3 cr) or equivalent.
7. Nonprofessional physical education courses (3 cr).

A student should plan carefully the Lower Division courses in his intended major which he can include in his pre-education work in the Arts College. He should review specific requirements in the *College of Education Bulletin* for courses to include in a major or minor. If the pre-education student identifies his major (i.e., English Education) when he registers for the sophomore year he will be assigned to an adviser in the College of Education Student Personnel Office for the sophomore year.

Requirements for Consideration for Transfer to Elementary Education Curriculum

Students who complete 2 years of a liberal education with a C (2.00) average, who have Psy 1-001 and 1-002 and who lack not more than 12 credits of the freshman and sophomore requirements are eligible to be considered for admission.

Although other factors will be considered, for admission in 1970-71 preference will be given to those applicants who have GPA's of 2.30 and above; for admission in 1971-72 preference will be given to those applicants who have GPA's of 2.50 and above. The program begins fall and winter quarters, and there will be

no admissions for spring and summer. Course requirements for the freshman and sophomore years are as follows:

1. Freshman English

Comm 1-001/1-002/1-003 or Engl 1-001/1-002/1-003 or 1-311H/1-312H/1-313H or exemption

2. Natural Science

NSci 1-004/1-005† and Biol 1-001/1-002† or NSci 1-001/1-002†/1-003 or other patterns of course work of minimum of 15 credits spread over physical and biological sciences

3. Social Sciences

Geog 1-401 or 1-301

Hist 1-301, 1-302

Soc 1-001 and 1-003, or SSci 3-101, 3-102, 3-103

4. Mathematics

Math 1-005 and 1-006

5. Artistic Expression

Mus 1-001 (or exemption)

Plus minimum of 4 elective credits from among following: English, humanities, literature, theatre, art, or music

6. Speech

Spch 1-101 or 1-102 and 1-106

7. Psychology

Psy 1-001/1-002†

8. Health and Physical Education

PubH 1-003 or 3-001

Nonprofessional physical education courses (3 cr) (inclusion of PE 1-560, 2 credits, recommended toward requirement)

9. Electives toward an academic minor

Possible minors (30 cr) are listed under Elementary Education section in the College of Education Bulletin.

Application Procedures for Elementary and Secondary Academic Majors

1. Apply for admission to College of Education at "Transfer" window (room 6) in Morrill Hall *early* in third quarter of sophomore year and not later than May 1 for consideration for fall admission. This allows sufficient time to schedule psychological tests and speech and health examinations prior to registration for next quarter.
2. Complete clearances as outlined on clearance form that is issued when application for transfer is made.

Students are advised to refer to the paragraph concerning the controlled growth policy on page 247. At any time, students may talk with a staff member in the Student Personnel Office, 206 Burton Hall, about entrance requirements, arrangements for transfer, educational and vocational information, or choice of a career in teaching.

Combined Programs in Arts and Education Leading to Degrees of Bachelor of Arts (from College of Liberal Arts) and Bachelor of Science (from College of Education)

Students who qualify may combine programs of the College of Liberal Arts and of the College of Education and earn both the B.A. and B.S. degrees. The student must complete the requirements of both colleges and must register 3

quarters in the Upper Division of each college. Somewhat more than the normal 4 years for a Bachelor's degree may be needed. For information on eligibility and procedures for application, consult an Upper Division office or the College of Education (206 Burton Hall).

F. LAW SCHOOL

Requirements for Admission and for Degree in Law

The Law School offers the professional degree of juris doctor (J.D.) which qualifies one for bar examinations and admission to practice. The course of study in the Law School consist of 3 academic years.

Admission to the Law School requires the bachelor of arts degree or its equivalent. The degrees bachelor of science and bachelor of business administration with a well-balanced program will be accepted as the equivalent of the B.A. degree.

Applications for admission to the Law School should be submitted by March 1 for the class entering Law School in September each year. Late applications will be considered only if space remains in the entering class.

Details with respect to admission requirements and the Law School program may be found in the *Law School Bulletin*. Attention is directed to the fact that a student's prelaw scholastic record and the results of the Law School Admission Test given by the Educational Testing Service at Princeton, New Jersey, will be considered in determining his admissibility. This test is given in February, April, August, and November of each year at the University of Minnesota as well as at numerous other test centers throughout the world. Students should plan to take the test in November or February of the year in which they make application to the Law School. Information pamphlets and application blanks for the test are obtainable from the office of the dean at the Law School; from the Student Counseling Bureau, 101 Eddy Hall, University of Minnesota, Minneapolis, Minnesota 55455; or from the Educational Testing Service, Princeton, New Jersey.

G. LIBRARY SCHOOL

The basic minimum preparation for a professional career in librarianship is an M.A. degree. The prerequisite for admission to the M.A. program is a B.A. degree with a broad liberal arts background in the humanities, social sciences, and sciences with a strong concentration in at least one subject field. Inquire at the Library School office about preprofessional planning during the junior and senior years.

H. MEDICAL SCHOOL

Students usually become eligible to apply to the Medical School by completing a 4-year B.A. program in CLA and, at the same time, completing the list (below) of required courses. There are, in addition, two 3-year premedical programs of study that may be elected by Arts College students. Both require 3 full years of work in the Arts College (totaling at least 135 credits), and must include the required courses listed below. To elect these programs, students should declare a "premed" major. One 3-year program leads to the degrees of B.S. and M.D.; the other leads to the B.A. and M.D. degrees. Because these programs combine 3 years of premedical work with 4 years of work in the Medical School, they are 7-year programs.

Program Planning—Prudent planning is especially important for students seeking Medical School admission. All such students are urged to discuss their programs with advisers in the Arts College who specialize in premedical advising.

Because of the large number of applicants to the Medical School—and the consequently high number of students failing to be admitted even though they meet and exceed the minimum entrance requirements—all students are urgently advised to plan their early years of premedical work in such a way that, in case they are not admitted to the Medical School, they may still proceed toward a 4-year B.A. degree without undue loss of time. They should consider this possibility from the first quarter of their CLA registration.

Choosing a Curriculum—Most students planning to apply for Medical School admission should, from the outset, plan to complete a 4-year B.A. program. Although the two 3-year premedical programs allow students to complete the minimum requirements for admission, considerably more than these minimal standards is usually needed for acceptance. Acceptance into the Medical School on the basis of these 3-year programs is granted only in exceptional cases to students with truly outstanding records.

Another consideration in choosing a curriculum, and in quarter-by-quarter planning, is the importance of a general educational background. The Medical School urges prospective applicants to acquire a sound liberal education.

CLA students who plan to apply for admission to the Medical School have a wide range of curricular alternatives. The required courses listed below must be taken by all who seek admission to the Medical School, but there is no single major sequence for premedical students. Since the required courses may be incorporated into virtually any 4-year B.A. degree program, every CLA major sequence may be used as a “premedical” curriculum.

Required Courses—The Admissions Committee will accept courses or course sequences which the offering department determines is equivalent to the courses listed below:

English

Engl 1-001/1-002/1-003 or 1-004; or Comm 1-001/1-002/1-003; or exemption from Freshman English requirement

Biology

Biol 1-001/1-002†

Chemistry

Chem 1-004/1-005†; Chem 3-100/3-101; Chem 3-301/3-302

Mathematics

Higher algebra through at least first-quarter calculus. Some students may need to take Math 0-009 and/or Math 1-008 to prepare them for: Math 1-141, 1-142; or Math 1-441, 1-442.

(Note—the 1-441, 1-442 sequence is preferred; if 1-441, 1-442 are taken, students should plan on taking 1-443 and, preferably, 1-444 as well)

Physics

Phys 1-040/1-050/1-060 (the alternative 1-270/1-280/1-290 sequence is recommended)

Elective Courses—The Admissions Committee will show preference for the applicant who has displayed a well-developed interest in, and aptitude for, a special field of knowledge.

Prospective applicants are usually encouraged to concentrate many of their electives in areas of the humanities or social sciences to broaden the base of their liberal arts education, since the required premedical courses provide a concentration in the physical and biological sciences. In Medical School there is additional concentration in science courses and little time for formal pursuit by the medical student of general or special liberal arts subjects. The Medical School, therefore, encourages students to acquire an appreciation and understanding of

social and cultural matters before entering on their medical studies. It is usually undesirable, from this point of view, for the premedical student to select elective courses exclusively in the physical and biological sciences. All prospective applicants are urged to take advantage of a fourth year of college work in pursuit of either general or specialized education before entering Medical School.

A superior premedical student with an outstanding academic record in science and mathematics courses, especially if he may contemplate a career in research or academic medicine, should schedule when possible introductory and advanced courses in these fields at a higher level than the listed minimum requirements. For example, premedical students with strong preparation in and aptitude for mathematics should consider taking Phys 1-270/1-280/1-290 in lieu of Phys 1-040/1-050/1-060. Similarly, Chem 5-501, 5-502, 5-503, Chem 3-303, and Upper Division courses in biology may be appropriately included in the programs of superior students preparing for medicine or for graduate study in a medical science.

Although a reading knowledge of a modern foreign language is not a requirement for admission, it is recommended, especially for students interested in medical research or in graduate medical training.

Admission to Medical School and Application Procedures

Application forms may be obtained from the Office of Admissions and Records after June 1, along with detailed instructions for filing the application. The completed application form must be filed about 12 months before the student plans to enter Medical School, no later than November 1.

The Medical College Admission Test (MCAT) and certain additional tests are required of all applicants. The Medical College Admission Test is given twice each year, in early May and late October, at designated test centers including the University of Minnesota. This test is given under the auspices of the Association of American Medical Colleges by the Psychological Corporation, 304 East 45th Street, New York, New York 10017. Each applicant is required to pay a \$15 fee to the Psychological Corporation. He must register for the test, at least 3 weeks before the examination is to be given, at the Student Counseling Bureau, 101 Eddy Hall, University of Minnesota, or directly with the Psychological Corporation.

A group of special tests, sometimes referred to as the Minnesota Medical Aptitude Test Battery, is required of all applicants to the Medical School at the University of Minnesota and is administered at the Student Counseling Bureau. Alternatively, these tests are administered by arrangement with established test centers of other colleges and universities, after the completed Medical School application form has been returned to the University. A general administration of these special tests is arranged by the Student Counseling Bureau on the Minneapolis Campus of the University annually in early October. The time and place for this testing session is announced early in fall quarter through the Official Daily Bulletin of the *Minnesota Daily*.

Letters of reference are to be solicited by the applicant from persons who have direct knowledge of his personal qualifications for medical study and a career in professional medicine. Appropriate reference forms are enclosed with the application materials. The Medical School will request directly additional reference information from the applicant's undergraduate college faculty advisers and his former high school.

The foregoing statements governing the quality and amount of premedical training required for admission to the Medical School will apply for those who present the minimum amount of work. In cases of mature and superior students, especially those who have taken degrees and have a record of outstanding accomplishment in some special field of study even though it may not have been closely related to medicine, concessions may be made. Such cases will be con-

sidered individually by the Admissions Committee upon petition to the dean of the Medical School.

A broad, general education is considered fundamental to medical study, but no student can pursue the medical course to advantage without adequate knowledge of biology, chemistry, and physics. Therefore, no substantial amount of the credits required in these premedical subjects is likely to be waived by the Admissions Committee.

Information and counseling on premedical programs can be obtained in the Lower Division and Upper Division offices, College of Liberal Arts. Medical School representatives are available for consultation on Medical School admission, application, and policies in the Medical School office, 1342 Mayo Memorial. For additional detailed information and background, premedical students are advised to see the *Medical School Bulletin* and the annual *Admission Requirements* handbook of the Association of American Medical Colleges. This latter useful reference is available in college and medical school advising offices and in most college libraries.

Residence—Preference for admission to the Medical School of this University is given to residents of Minnesota and to residents of neighboring states that do not have 4-year medical schools. Nonresidents from other areas are accepted only if their scholarship has been outstanding and other qualifications indicate that they have unusual promise for studying medicine.

Bachelor of Science Requirements

Students who have completed elsewhere 3 or more years of collegiate or university work, which includes the required subjects specified above and which work is in other respects the full equivalent of 3 years of premedical academic work at the University of Minnesota, also will be awarded the degree of bachelor of science by the Medical School following satisfactory completion of 2 years in the Medical School.

Seven-Year Program in Science and Medicine Leading to Degrees of Bachelor of Science (from Medical School) and Doctor of Medicine (from Medical School)

The minimum requirements to be considered for admission to the Medical School are 3 full years of college work, amounting to 135 credits, with a scholarship average of C. At the present time, because of the large number of qualified applicants, an average considerably above C is necessary for admission.

The premedical work, for which the student is registered in the Arts College, must include as a minimum the above required courses or their equivalent as approved by the Admissions Committee of the Medical School.

Students are not generally encouraged to elect this program because, by not specifically including CLA degree requirements (such as the group distribution and foreign language requirements), it is not a program that can be readily expanded to a 4-year B.A. program by applicants who are not admitted to the Medical School.

Seven-Year Program in Arts and Medicine, Leading to Degrees of Bachelor of Arts (from Arts College) and Doctor of Medicine (from Medical School)

This program requires 3 years of college work and 4 years of Medical School. The first 2 years of college work may be taken in any accredited college, but the third year (45 credits) must be taken in the Upper Division of the Arts College of this University.

Preprofessional Curricula

Students in this combined program must complete the distribution and English proficiency requirements of the Arts College and must earn 135 credits in the Arts College including the usual premedical requirements. (For recommended electives and the restrictions governing them, see Elective Courses above.) Of the 135 credits, 45 must be earned in residence in Upper Division; a minimum of 30 must be in Upper Division courses, and the program must be approved by a premedical adviser. The Arts College credits must include a minor and 15 Upper Division credits outside the major and minor areas. Since the major area is medicine, the 15 Upper Division elective credits must be in humanities and social sciences. An average of C must be maintained in all University of Minnesota courses, in all credits applicable to the B.A. degree (including transfer credits), and in courses taken in residence in Upper Division. The first year of the course in the Medical School, when completed with the standards required by that school, counts as the equivalent of the fourth year (45 credits) of the Arts course.

In this program, procedures and policies for application and admission to Medical School are those outlined above.

Combined Medical-Graduate Programs and Graduate Study in Basic Medical Sciences

A combined medical-graduate study program is available to certain highly qualified students with interest in graduate study in one of the basic medical sciences (anatomy, biochemistry, microbiology, pharmacology, or physiology). Under this program, a student may pursue, over any extended period, both the curriculum leading to the M.D. degree and a graduate study program in one of the stated areas. In some cases, stipend support may be provided for the graduate portion of the program. Students interested in this program or in graduate study in one of the basic medical sciences are encouraged to schedule, following consultation with departmental advisers, higher-level introductory and advanced courses in biology, chemistry, mathematics, and physics than those indicated as minimum requirements for admission to the Medical School. Reading competence in one or more foreign languages is exceedingly important for students in graduate study in medical sciences.

To qualify for the combined medical-graduate program, a student must be accepted for admission to the Medical School and to the Graduate School, and his program of study must be approved by the Committee on Combined Medical-Graduate Programs of the Medical School. Students wishing to explore a combination of graduate study in a basic medical science with the medical curriculum are encouraged to consult the Medical School office of the Medical School, 1342 Mayo Memorial, and a faculty adviser in one of the basic medical science departments.

I. MEDICAL TECHNOLOGY

The program in medical technology is a 4-year course. The degree of bachelor of science is awarded upon completion of the prescribed curriculum.

The first 2 years are spent in the Arts College. After completing 90 credits, including the required courses, with a C average, the student is eligible for admission to medical technology.

The following courses or their equivalents are prerequisites for admission to the junior year:

Engl 1-001/1-002/1-003 (9 cr) or Comm 1-001/1-002/1-003 (12 cr) or exemption from requirement

Chem 1-004/1-005†, 1-006—General Principles of Chemistry (14 cr)

Chem 3-100/3-101—Quantitative Analysis (5 cr)

Chem 3-301/3-302—Elementary Organic Chemistry (10 cr)

- Biol 1-001/1-002†—General Biology (10 cr)
 Anat 1-004—Elementary Human Anatomy (4 cr)
 Math 1-111—College Algebra and Analytic Geometry (5 cr)
 Phys 1-010/1-020/1-030—Introduction to Physical Science (10 cr)
 MicB 3-103—General Microbiology (5 cr)
 MedT 1-010—Orientation in Medical Technology (1 cr)
 MedT 1-030/1-031/1-032—Case Presentations (3 cr)
 Electives—limited to those subjects that satisfy general education group requirements

The *Division of Medical Technology Bulletin*, which may be obtained at the Office of Admissions and Records, contains a suggested program for the first 2 years. For further information the student should consult special advisers in the Medical Technology office, 5307 Powell Hall (telephone 373-9670).

Advisers—All students in this course should consult advisers in the Medical Technology office, 5307 Powell Hall. Registration each quarter must be reviewed by one of these advisers.

J. MORTUARY SCIENCE

The Department of Mortuary Science offers a 4-year curriculum leading to a bachelor of science degree with a major in mortuary science. Students preparing for licensure 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 an official transcript, if they are in good standing and have completed the minimum requirements as set forth by the American Board of Funeral Service Education and the requirements of the state in which they seek licensure.

To be considered for entrance to the Department of Mortuary Science the student must have completed 90 quarter credits with a C (2.00) average in the College of Liberal Arts of the University or any other accredited university, college, or junior college. Because of the sequence of courses, students should plan to enter in the Summer Session or fall quarter.

Freshman and sophomore students in the College of Liberal Arts at the University of Minnesota will be assigned an adviser from the Department of Mortuary Science who will assist them with course selection, registration, and academic advisement. Registration must be approved by a mortuary science adviser each quarter.

While in Lower Division, students should determine a core area of interest and select prerequisite courses in preparation for Upper Division courses in the core area to satisfy the requirement of 15 Upper Division credits outside of the major area.

The *Department of Mortuary Science Bulletin* may be obtained at the Office of Admissions and Records. For further information the student should write to the Department of Mortuary Science or consult departmental advisers in the Mortuary Science office, 114 Vincent Hall (telephone 373-3870).

The minimum 90 quarter-credit requirement for admission to the Department of Mortuary Science must include the following courses or their equivalents:

1. Communications, Language, Symbolic Systems—17 credits
 - a. Freshman composition—Engl 1-001/1-002/1-003 (9 cr)
 - b. Speech—Spch 1-101 (5 cr)
 - c. Electives—foreign language, philosophy, mathematics, statistics, journalism
2. Physical and Biological Sciences—27 credits
 - a. General biology—Biol 1-001/1-002† (10 cr)

Preprofessional Curricula

- b. Inorganic chemistry—Chem 1-004 (5 cr) or GC 1-166 (5 cr)
 - c. Human anatomy—Anat 1-004 (4 cr)
 - d. Microbiology—MicB 1-101 (4 cr)
 - e. Public health—PubH 1-001/1-002 (4 cr)
 - f. Electives—Physics, physiology, astronomy, geology
3. Man and Society—20-21 credits
- a. Psychology—Psy 1-001/1-002† (6 cr)
 - b. Accounting—Acct 1-024 (3 cr) or GC 1-540/1-541 (4)
 - c. Sociology, social science, or anthropology (9 cr)
 - d. Electives—History, political science, economics, geography
4. Artistic Expression—9 credits
- a. Electives—Art, music, humanities, theatre arts, literature

Note—Students who plan to license in a state other than Minnesota should request information concerning specific requirements of that state.

K. NURSING

The curriculum in basic professional nursing leading to the degree of bachelor of science is a 4-year program, 1 year of which may be taken in the College of Liberal Arts of the University or any other accredited university, college, or junior college. This program, open to both men and women, prepares for first-level positions in all fields of professional nursing. To be eligible for admission to the School of Nursing, students must have satisfactorily completed certain requirements in general education, and must give evidence that they are able to pursue advanced study. Students interested in qualifying for admission are urged to seek current information by writing to the School of Nursing or making an appointment to discuss their program with faculty members of the School of Nursing.

An adviser from the Arts College is assigned to prenursing students enrolled there during the freshman year; she will assist them with course selection, registration, and academic advisement.

For information regarding the first-year requirements, see page 20 of the *School of Nursing Bulletin*.

Because of the sequence of courses in the School of Nursing, students may enter only in the fall quarter of the academic year. Those who wish to enroll in another college or university for the first year are urged to contact the School of Nursing before beginning their program elsewhere.

After admission as a sophomore to the School of Nursing, the student continues to take general education courses and starts courses in the nursing major. In the total program, there is an approximate half-and-half balance of general education courses and courses in nursing or related areas. For further information about this portion of the program and for information about graduate programs, see the *School of Nursing Bulletin*.

L. COLLEGE OF PHARMACY

The College of Pharmacy offers the professional degree of bachelor of science in pharmacy (B.S. in Pharm.) which is one of the qualifications for examination for licensure as a registered pharmacist.

The first year of the 5-year curriculum (prepharmacy year), offered to students enrolled in the Arts College, is required for admission to a 4-year program of professional study in the College of Pharmacy. The prepharmacy year must include specified courses and elective credits as follows:

- Chem 1-004/1-005†—General Principles of Chemistry (10 cr)
Chem 1-006—Principles of Solution Chemistry (4 cr)
Math 1-111—College Algebra and Analytic Geometry (5 cr)
Math 1-008—Trigonometry (3 cr)
Comm 1-001/1-002/1-003—Communication (12 cr)**
Electives (8 cr)

Students enrolled in the Arts College for the prepharmacy year usually take, in addition to the above courses, Phar 5-201 (2 cr).

Students who have completed 2 or more years in the Arts College may be eligible for admission to a 3-year program of professional study in the College of Pharmacy provided they have also taken the following courses required in the pharmacy curriculum:

- Biol 1-001/1-002†—General Biology (10 cr)
Phys 1-010/1-020/1-030—Introductory Physics (9 cr)
Phys 1-015/1-025/1-035—Introductory Physics Laboratory (3 cr)
Chem 3-301/3-302/3-303—Elementary Organic Chemistry (13 cr)
Econ 1-001/1-002†—Principles of Economics (6 cr)
Electives (not less than 8 cr)

Admission to the College of Pharmacy is based upon the earned grade point average in the prepharmacy studies. A grade point average of 2.50 (C+) or above assures admission. Applicants with grade point averages below 2.50 will be considered individually. Application forms are available at the Office of Admissions and Records or at 115 Appleby Hall, and should be addressed to the Office of Admissions and Records.

An overall C average in courses taken while enrolled in the College of Pharmacy is required for graduation.

M. PHYSICAL THERAPY

The Course in Physical Therapy is a 4-year curriculum leading to a bachelor of science degree in physical therapy. The first 2 years are spent in the College of Liberal Arts. To be considered for entrance to the professional program in the junior year, a student must complete 90 quarter credits, including certain required courses or their equivalents, with a C+ average in the basic sciences. The last 2 years are spent in the Department of Physical Medicine and Rehabilitation. The student must complete a minimum of 600 hours of supervised clinical practice in physical therapy departments of various affiliated hospitals.

For information regarding admission to the junior year of the Course in Physical Therapy, a student should contact the Physical Therapy office, 282 Children's Rehabilitation Center.

Advisers—All prospective physical therapy majors should consult advisers in the physical therapy office (373-9024). Registration must be approved by a physical therapy adviser each quarter. For more detailed information see the *Occupational and Physical Therapy Bulletin*.

N. OCCUPATIONAL THERAPY

The Course in Occupational Therapy is a program of 4½ years, including summer sessions. The degree of bachelor of science is awarded upon completion of the prescribed curriculum.

The first 2 years are spent in the Arts College. After completing 90 credits and the required courses of the first 2 years with a high C average, the student is

**Freshman English is acceptable.

Preprofessional Curricula

eligible for admission to the Course in Occupational Therapy. During the senior year, 8 months are spent in clinical education in various types of hospitals and institutions for the sick and handicapped.

For information regarding the specified curriculum and the prerequisites for admission to the Course in Occupational Therapy a student must contact the Occupational Therapy office, 860 Mayo Memorial Building.

Advisers—All students in this course should consult a special adviser in the Occupational Therapy office and have their programs reviewed each quarter. This applies to students who are still in the Arts College.

For more detailed information, see the *Occupational and Physical Therapy Bulletin*.

O. PUBLIC ADMINISTRATION

Professional study in the School of Public Affairs, which is a part of the Arts College, is at the graduate level and is designed to prepare public policy analysts, decision makers, and administrators for high level positions in public service. The program of study consists of required core courses in the policy process, program analysis, and quantitative methods, the offering of two substantive concentrations, and an arranged internship in the area of interest of the student. The program normally covers 2 academic years and 1 summer. For further information see the *Graduate School Bulletin*.

P. SOCIAL WORK

Professional study in the School of Social Work, which is a part of the Arts College, is at the graduate level. The recommended preprofessional program is described in Section II, Social Work, of this bulletin. Admission is not limited, however, to those who complete the recommended B.A. in social work. For entrance requirements see the *Graduate School Bulletin* and the *School of Social Work Bulletin*.

Section IV

OLD GRADUATION REQUIREMENTS FOR B.A. DEGREE

The following graduation requirements apply to students who entered the College of Liberal Arts before Summer Session 1967, and to transfer students with 39 or more credits who officially entered the college before summer 1969. Other candidates for the B.A. degree follow the requirements on page 8.

Returning Students—Generally speaking, Lower Division students who return to CLA after an absence must complete the requirements of the NEW group distribution plan. If they had previously met the foreign language requirement as defined by the old distribution plan, however, they need not meet that requirement as defined by new graduation standards. Lower Division students absent less than 2 years (6 quarters, not including summer terms) may complete the distribution requirements applicable to them at the time of prior residence, but all other current graduation requirements apply.

Upper Division students who return after an absence complete whatever distribution and graduation requirements applied to them when they left.

Any student in doubt about his eligibility under OLD requirements should ask in his college office. *Note that the old course numbering system has been used in this section.*

● Summary of Graduation Requirements

1. **Minimum Credits**—180
2. **Residence in Upper Division**—Earn 45 credits after admission to Upper Division, 30 of them in the senior year. If you have only 1 year of residence, it must be your senior year.
3. **Lower Division Distribution**—Complete the distribution requirements, preferably before entering Upper Division.
4. **Major (field of concentration) and Minors**—Complete a departmental major and minor (or two half-minors) or an interdepartmental major or a combination course with a professional school.
5. **Upper Division Credits Outside Major and Minor**—For those with a departmental major, 15 credits in Upper Division courses required outside the major and minor departments. These must be in Upper Division courses listed in this bulletin.
6. **Quality of Work**—C average in all work presented from the University and in toto, a C average while in Upper Division, and a C average in the major (Upper Division courses). In calculating the overall grade point average, the Scholastic Committee may, in rare cases, approve the omission of certain quarters of work done in the Lower Division.

● Lower Division Distribution Requirements for B.A. Degree

A. Freshman English

Engl 1-2-3 or Engl A-B-C or Comp 1-2-3 or Comm 1-2-3 or exemption from requirement.

B. Foreign Language. From 0 to 15 credits according to the following schedule:

Amount Presented from High School

None	<i>Additional Amount Required in College</i> 15 credits in one language
1 year	(a) 10 college credits at a higher level in same language, or (b) 15 college credits in a different language
2 years in one language	(a) 5 college credits at a higher level in same language, or (b) 10 college credits in a different language

Old Requirements; Faculty

Amount Presented from High School

3 or more years in one language

2 years in each of two languages

Additional Amount Required in College

No college requirement if high school work is validated by the appropriate college department

No college requirement if one language is validated at the 2-year level by the appropriate college department

While experience shows the above high school equivalents to be reasonable for most students, anyone who believes his preparation fits him for entering language courses at either a higher or a lower level may petition the Committee on Student Scholastic Standing for permission to change his assignment. A petition is necessary to receive credit.

C. Social Science

At least 15 credits from two or more of the following departments. At least 5 credits must be completed in a department before work in that department may be used to meet distribution requirements.

- | | |
|--|--|
| 1. Anthropology | 5. Political science |
| 2. Economics and business administration | 6. Psychology |
| 3. Geography | 7. Sociology |
| 4. History | 8. Social science (interdisciplinary programs) |

(Note—Act 24-25-26 may not be used to satisfy the social science requirements.)

D. Natural Science

At least 15 credits (of which a minimum of 8 must be in courses that include laboratory) from two or more of the following four groups. At least 5 credits must be completed in any one department to count.

1. Biological sciences: botany, psychology, zoology, general biology
2. Physical sciences: astronomy, chemistry, geology, geophysics, physics, Physical World (NSci 4-5-6)
3. Mathematics (except Math 5A)
4. Orientation in the Natural Sciences (NSci 1-2-3)
(A student presenting credit in NSci 1-2 only must take his additional work in a group other than D2)

Introductory natural science courses that count toward the laboratory portion of the requirement are: GeCh 4-5, 24-25; Biol 1-2; Geo 1, 2 beginning fall 1963 (1 with A and 2 with B before fall 1963), 11, 22; NSci 4-5-6; Phys 1-2-3 with 1A-2A-3A, 4-5-6, 7-8-9, 21-22; Psy 1-2 with 4-5. Nonlaboratory courses include Ast 11; Biol 1A-2A; Bot 10, 12, 14; Geo 1, 2 before fall 1963; NSci 1-2-3; Phys 1-2-3; Psy 1-2.

E. Humanities

At least 15 credits from two or more of the following categories. At least 5 credits must be offered in any one department to count.

- | | |
|---|--|
| 1. Art | 6. Humanities |
| 2. English literature (including literature portions of freshman English courses) | 7. Mathematics (except Math 5A, T, 20) |
| 3. Classics | 8. Music |
| 4. Foreign literature | 9. Philosophy |
| 5. History | 10. Speech and theatre arts (except Spch 6, 6A, 9) |

Notes—

1. If courses from the Departments of History or Psychology or the School of Mathematics are used to satisfy the requirements in one area, courses from the same department may not be used to satisfy the requirement in a second area.

2. Courses of an interdepartmental character (humanities, natural science, social science) may be used to satisfy distribution requirements in only two of the three areas, C, D, and E.

3. A student may gain exemption from any requirement or part of a requirement by examination and thereby move more quickly into advanced and more specialized courses or begin more quickly to concentrate in areas of his choice. Students with outstanding high school records should be able to gain exemption from one or more requirements.

4. Transfer of $4\frac{1}{2}$ quarter credits in a department satisfies the "5 credits in a department to count" criterion, but only as $4\frac{1}{2}$ toward the required 15 credits.

● Upper Division Requirements for B.A. Degree

Major Sequence—While in the Upper Division, you will be expected to concentrate a portion of your efforts in some field of special interest. Your purpose may be vocational or avocational; the field may be departmental or interdepartmental.

This field of concentration, known as a major sequence, must be composed of Upper Division courses in one of the three types of sequences listed below:

1. *Departmental Major and Minor Sequence*

- a. A major (minimum of 27 Upper Division credits or more) is offered in more than 30 departments of the college. The description of each major and its specific requirements is published for each department in Section II of this bulletin. You must maintain a C average in Upper Division courses in the major.
- b. A minor sequence (15 credits) or two half-minors (9 credits each) must be taken in some department or departments other than that chosen for your major. These minor credits must be in Upper Division courses listed in this bulletin.
- c. Fifteen credit hours in Upper Division courses must be taken outside the major and minor departments, and they also must be in Upper Division courses listed in this bulletin.
- d. If you complete two majors, you also need to complete 15 Upper Division credits outside your major department.

2. *Interdepartmental Major*

- a. If your special interest cannot be satisfied in a single department, you may have a major tailor-made for your particular needs. In applying for a major of this type you must submit a statement of your reasons for choosing this major, and a plan of courses, to 225 Johnston Hall. An interdepartmental program must include 75 or more Upper Division credits. The courses must be planned to meet a central purpose, usually through a concentration in four or more departments. An unsystematic and aimless scattering of courses will not be approved. You must maintain a C average in Upper Division courses.
- b. A number of interdepartmental programs have become standard. Among these are those in International Relations and Area Studies, Preprofessional Curriculum for Social Work, Preparation for Theological Training, American Studies, and Humanities, described in Section II of this bulletin. A minimum of 60 Upper Division credits, with a C average, is required.
- c. An interdepartmental major satisfies the requirements of a minor and the 15 Upper Division credits outside the major and minor.
- d. If you wish a program requiring a substantial number of courses outside the Arts College, you may wish to apply for a degree program in the University College (see page 28).

3. *Major in a Combined Program*

- a. A third type of concentration is a combined program with medicine or dentistry, in which work in the professional school is used to satisfy the major requirement. Other requirements for the B.A. degree must be satisfied in the usual way. At least 1 year (45 credits) must be earned in Upper Division residence and a C average must be maintained. The programs require 7 years and lead to B.A. and M.D. degrees (the latter from Medical School) and B.A. and D.D.S. degrees (the latter from School of Dentistry). Details are listed in Section III.

OLD GRADUATION REQUIREMENTS FOR 2-YEAR PROGRAM FOR A.L.A. DEGREE

Degree requirements are as follows:

1. Earn at least 90 credits. While grade point average is not a factor in this degree, satisfactory progress is, while in the Arts College.
2. Earn the degree in not more than 7 quarters of University residence. If you enter the Arts College with advanced standing, you must spend the last 3 quarters in residence before graduation, and must earn at least 45 of the required credits in residence.
3. Meet the requirement in English (A) and at least three of the other four distribution requirements: foreign language (B); social science (C); natural science (D); humanities (E) as outlined in Distribution Requirements, page 259-260.

1970-1972

TENTATIVE ORDER OF REGISTRATION, CLA RESERVATION OFFICE

In order to permit students to make their registration plans on a long-term basis, the following *tentative* order of registration at the CLA Reservations Office through Spring 1972 is listed here. Further breakdown by hour will be necessary for Winter and Spring. *Note*—This schedule does not apply to new students (freshmen and advanced standing) participating in an orientation-registration program.

<i>Day</i>	<i>Fall 1970</i>	<i>Winter 1971</i>	<i>Spring 1971</i>	<i>Fall 1971</i>	<i>Winter 1972</i>	<i>Spring 1972</i>
1st	Q-S1	C-Dn	La-McD	Tia-Bac	Ham-Jog	Rau-She
2nd	Sm-Wa	Do-F	McE-Norm	Bad-Cos	Joh-Kuz	Sbf-Thom
3rd	Wb-Z, A-Ba	G-Han	Norn-Po	Cot-Gar	Kv-Mas	Thon-Wil
4th	Bb-Cok	Hao-Jd	Pp-Schl	Gas-Hoq	Mat-Nei	Wim-Bars
5th	Col-Fn	Je-Km	Schm-Std	Hor-Kra	Nej-Pec	Bart-Btz
6th	Fo-Hd	Kn-Ln	Ste-Uz	Krb-McK	Ped-Robf	Bu-Dau
7th	He-Ken	Lo-Mh	Va-Won	McL-Olz	Robg-Sha	Dav-Fak
8th	Keo-L	Mi-Nt	Woo-Bam	Om-Rip	Shb-Stz	Fal-Gol
9th	M-Nel	Nu-Pe	Ban-Bp	Riq-Sim	Su-Vm	Gom-Hec
10th	Nem-P	Pf-Rop	Bq-Cog	Sin-Thz	Vn-Wo	Hed-Jenk
11th	•	Roq-Sha	Coh-Dra	•	Wp-Bac	Jenl-Kid
12th		Sbb-Stn	Drb-Fir		Bad-Bn	Kie-Larr
13th		Sto-Tr	Fis-Glo		Boa-Cap	Lars-Lz
14th		Ts-Whh	Glp-Hann		Caq-Crz	Ma-Md
15th		Whi-Z	Hano-Hof		Cs-Dun	Me-Mui
16th		A-Bar	Hog-Johnson, B.		Duo-Fise	Muj-Od
17th		Bas-Bos	Johnson, C.-Kenj		Fisf-Gilf	Oe-Perr
18th		Bot-Bz	Kenj-Kz		Gilg-Hal	Pers-Rat
		••	••		••	••

*Registration continues for 6 weeks.

••Registration continues for 2 weeks.

DEPARTMENTAL AND FACULTY INDEX

AEROSPACE STUDIES

3 Armory

Head: Colonel Frederick J. Adelman

Captain James W. Nichter

Major David J. Martinson

Major Francis T. Sullivan

AFRO-AMERICAN STUDIES

374 Social Sciences Building

Chairman: George D. King

Assistant Chairman and Associate Professor: Lillian D. Anthony

Josie Johnson

Geneva H. Southall

John P. Ward

Milton Williams

AMERICAN INDIAN STUDIES

1314 Social Sciences Building (WB)

Chairman: Edward P. Dozier

George Morrison

Roger Buffalohead

Timothy Dunnigan

AMERICAN STUDIES

225 Engineering

Chairman: Mary C. Turpie

ANATOMY (Medical Sciences)

262 Jackson Hall

Head: Arnold Lazarow

ANTHROPOLOGY

200 Ford Hall

Chairman: Frank C. Miller

Director of Undergraduate Studies: Dennis Puleston

Richard Adams

Richard Currier

Neil Eddington

Luther Gerlach

Stephen Gudeman

E. Adamson Hoebel

John Ingham

Elden Johnson

Robert Kiste

Rupert Murrill

Eugene Ogan

Akos Ostor

Martin Peterson

Dennis Puleston

William Rowe

Alan Rew

Harvey Sarles

Robert Spencer

ARCHITECTURE AND LANDSCAPE ARCHITECTURE (Institute of Technology)

110 Architecture Building

Head: Ralph Rapson

Director of Undergraduate Studies in Architecture: John S. Myers

Director of Undergraduate Studies in Landscape Architecture: Roger Martin

ART HISTORY

108 Jones Hall

Chairman: Carl D. Sheppard

Director of Undergraduate Studies: Norman W. Canedy

Acting Director, University Gallery: Allen J. Davis

Frederick Asher

James Marrow

Sheila McNally

Robert Poor

Sidney Simon

M. Alison Stones

Michael Stoughton

Donald Torbert

Dimitri Tselos

Melvin Waldfogel

ART, STUDIO ARTS

208 Art Building (WB)

Chairman: Allen Downs

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Karl E. Bethke
Peter Busa
Thomas Egerman
Lynn A. Gray
Raymond Hendler
Curtis Hoard
Alan E. Kraning
Jerome Liebling

Warren D. MacKenzie
Elaine Mayes
Malcolm H. Myers
Katherine Nash
Wayne Potratz
Zigmunds Priede
David Routon
Herman Rowan
Herman Somberg

BIOLOGICAL SCIENCES (College of Biological Sciences)

Dean: Richard S. Caldecott, 123 Snyder Hall (StP)

Associate Dean: Norman S. Kerr, 307 Zoology Building

Assistant to the Dean: Jeanne T. Lupton, 123 Snyder Hall (StP)

Biochemistry

140 Gortner Lab (StP)

Head: L. M. Henderson

John S. Anderson
Victor Bloomfield
Peter J. Chapman
Stanley Dagley
John E. Gander
Robert L. Glass
H. Orin Halvorson
LaVell M. Henderson

Robert Jenness
Samuel Kirkwood
Dolph Klein
Irvin E. Liener
Rex E. Lovrien
Kenneth Mann
Max O. Schultze
Huber Warner

Biology

307 Zoology Building

Associate Dean: Norman S. Kerr

Botany

8 Botany Building

Head: Eville Gorham

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Edward J. Cushing
Albert W. Frenkel
Eville Gorham
John W. Hall
Herbert Jonas
Willard Koukkari
Donald B. Lawrence

David McLaughlin
Thomas Morley
Gerald B. Ownbey
Douglas Pratt
Terry Shiningier
Thomas K. Soulen
Clifford Wetmore

Ecology and Behavioral Biology

339 Bell Museum of Natural History

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Director of Graduate Studies: John R. Tester

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Alan J. Brook
Robert K. Maxwell
D. Frank McKinney
Robert O. Megard
David F. Parmelee

Joseph Shapiro
Donald B. Siniff
John R. Tester
Harrison B. Tordoff
Herbert E. Wright, Jr.

Genetics and Cell Biology

227 Snyder Hall (StP)

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Ralph E. Comstock
William P. Cunningham

Frank Enfield
David Fan
Frederick Forro, Jr.

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Robert K. Herman
Vivian S. Hiatt
Alan B. Hooper
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Murray D. Rosenberg
Irvin Rubenstein
D. Peter Snustad
Leon A. Snyder
Val W. Woodward

Museum of Natural History

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Robert C. Bright
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Harrison B. Tordoff
Dwain W. Warner

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108 Zoology Building
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Norman S. Kerr
Robert G. McKinnell

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Magnus Olson
William D. Schmid
Judson D. Sheridan
Nelson T. Spratt
James C. Underhill
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1226 Mayo Memorial Building
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Jacob E. Bearman
Dorothy Jeffries

Eugene Johnson
Marcus O. Kjelsberg

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225 Business Administration Building
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Director of Undergraduate Studies: (to be appointed), 147 Chemistry Building

CHILD PSYCHOLOGY (College of Education)

151 Child Development Building
Director: Harold W. Stevenson, 196 Child Development Building
Director of Undergraduate Studies: John C. Masters, 206C Child Development Building

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116 Klaeber Court
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D. V. Bryan

Old Requirements; Faculty

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330 Burton Hall

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207 Main Engineering

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108 Pillsbury Hall

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286 Ford Hall
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142 Klaeber Court
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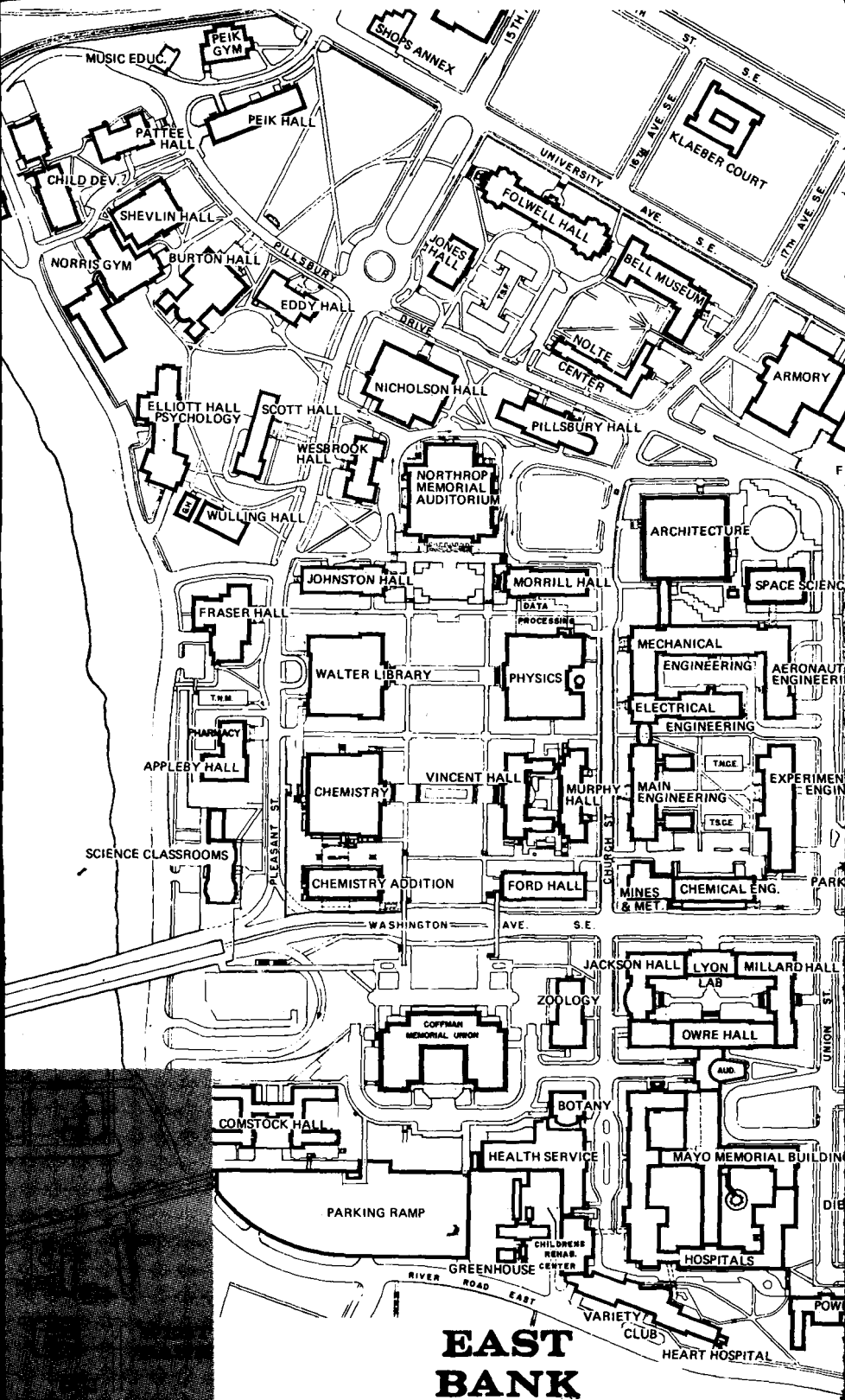
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**EAST
BANK**

NEW COURSE NUMBERING SYSTEM

Courses in this bulletin are identified under a new numbering system, which will be in effect throughout the University beginning Fall Quarter 1970. If one spends a few minutes learning its general rationale, it should present few difficulties for returning students, and none for new students. In the course description section of this bulletin, the old course number for that course appears in parentheses. A master conversion guide will also be available.

To avoid re-registering for a course already taken, returning students should fill out a complete schedule of work they have completed, using the new numbers.

A unique feature of the new numbering system is that course numbers ending in zero identify courses which may be repeated for credit. Thus, a student registering for a second quarter of a course whose number ends in zero writes that same course number on his registration when registering for it the second time. These courses will usually be of a less structured nature, such as field work, independent research, directed teaching, directed study, practicums, and seminars whose content changes each quarter.

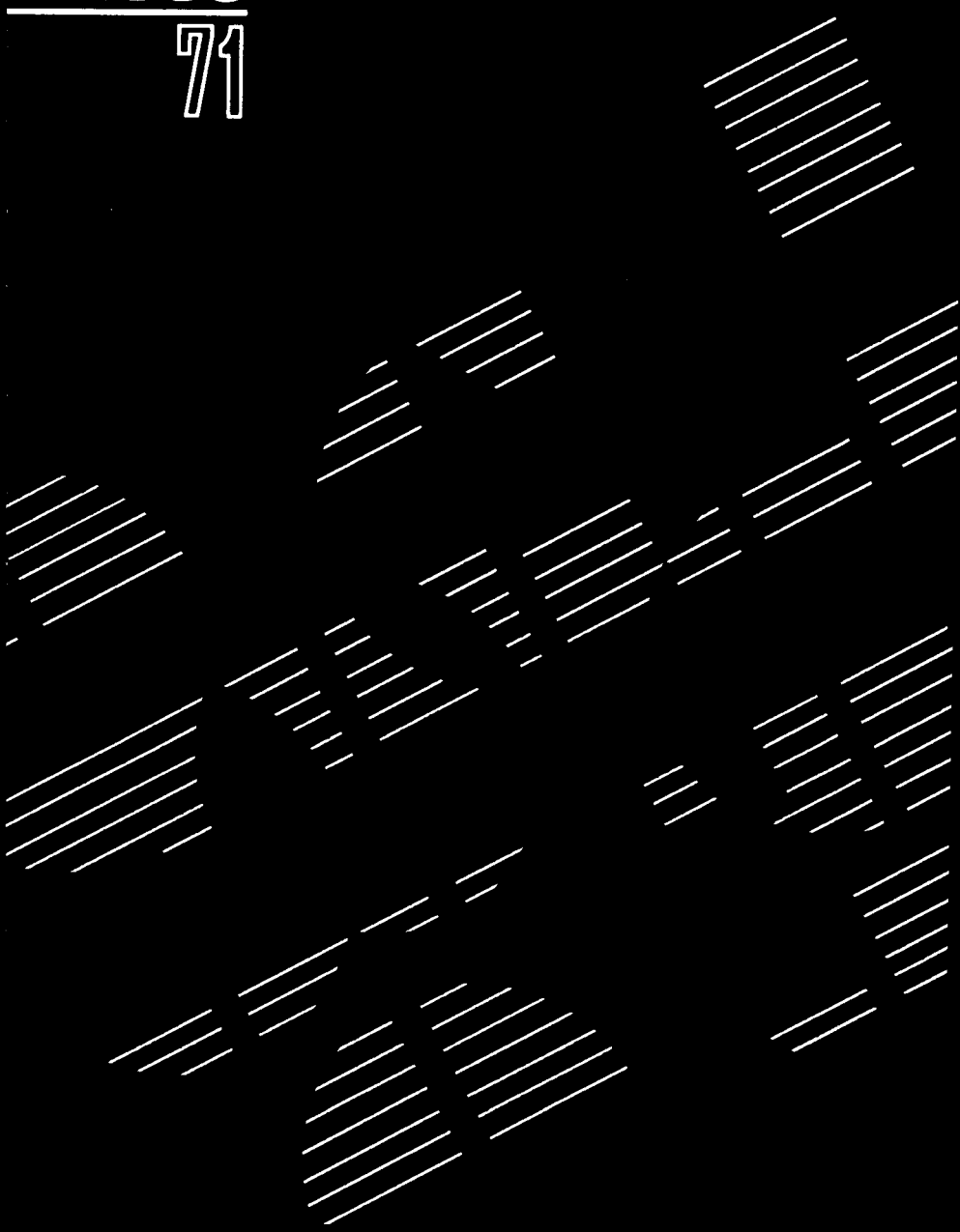
Note—Some courses listed in this bulletin may not be repeated for credit, even if their numbers end in zero. Such courses will be those offered by the Departments of Biochemistry, Botany, Chemistry, Naval Science, Physics, Public Health/Biometry, and Zoology. Courses offered for CLA students by the Schools of Business Administration and Home Economics are also exceptions to the general rule that courses with numbers ending in zero may be repeated for credit.

NEW NUMBERING SYSTEM KEY

<i>First digit (level designator)</i>	<i>Meaning</i>
0-xxx	No degree credit
1-xxx	Lower Division course, primarily for freshmen and sophomores
3-xxx	Upper Division course, primarily for juniors and seniors. Also open to sophomores with at least C averages overall and in all prerequisite work
5-xxx	Open to juniors, seniors, and graduates; also open to 3rd-qtr sophomores by special permission of the Scholastic Committee; 3rd-qtr sophomores should submit a petition in their college office
8-xxx	Graduate courses; generally not open to undergraduates (see <i>Graduate School Bulletin</i> for these listings)
<i>Other digits and numbers</i>	<i>Meaning</i>
3-970 or 5-970	Directed Studies or Directed Readings courses
3-980 or 5-980	Directed Instruction courses
3-990 or 5-990	Directed Research courses
Final digit of zero	May be repeated for credit

1969

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SCHOOL OF SOCIAL WORK

(909 Social Sciences Building)

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Field Work Agencies

Anoka State Hospital	Jewish Community Center (St. Paul)
Amherst Wilder Child Guidance Clinic	Jewish Family and Children's Service (Minneapolis)
Big Sisters Association	Jewish Family Service (St. Paul)
Cambridge State Hospital	Kenny Rehabilitation Institute
Capitol Community Center	Lutheran Social Service
Catholic Social Service	Merrick Community Center
Children's Service, Inc.	Minneapolis Public Schools
Community Health and Welfare Council (Hennepin)	Minneapolis Rehabilitation Center
Community Health and Welfare Planning Council (St. Paul)	Minnesota Department of Corrections
Council House for Senior Citizens	Minnesota Department of Public Welfare
East Side Community Service	Pillsbury Citizens Services
Family and Children's Service (Minneapolis)	Ramsey County Welfare Board
Family Service, Inc. (St. Paul)	Robbinsdale Public Schools
Hennepin County Court Services	St. Paul Board of Education
Hennepin County General Hospital	University of Minnesota Hospitals
Hennepin County Mental Health Center	Urban League
Hennepin County Welfare Board	Veterans Administration Hospital
Home of the Good Shepherd	Veterans Administration Regional Center
Jewish Community Center of Minneapolis	Washburn Memorial Clinic
	Young Women's Christian Association

School of Social Work

GENERAL INFORMATION

Education for Social Work

The profession of social work is one of the principal service professions. In a rapidly changing world where individuals, groups of individuals, and communities are confronted with complex personal and social problems the expert services of social work professionals are essential. Social work services touch all sorts and conditions of people, including children needing protection, guidance, or placement; families in trouble; persons in need of social, economic, medical, or psychiatric help; and groups in need of socializing, therapeutic, informal educational, or recreational experiences. Communities as well as individuals suffer from changing conditions requiring community welfare planning and social policy changes. The importance of skilled professional social work leadership in these broad responsibilities is well recognized.

The American community has been establishing new agencies and new or expanded services in social welfare. The job opportunities in the field are good, especially for those with the M.S.W. degree, but also for those with the Bachelor's degree in social welfare. Furthermore, the variety of kinds of positions available provides a broad choice for those who secure the requisite education. Generally, salary levels compare favorably with most other human service professions and occupations. The short supply of qualified social workers enhances career opportunities.

Those who wish to prepare themselves for the profession of social work need very broad understanding, sound judgment, and thorough professional education. The University of Minnesota provides rich offerings giving opportunity for a qualified student to acquire the education essential to entry into the profession of social work. The School of Social Work, accredited by the Commission on Accrediting of the Council on Social Work Education, is recognized as a leading school. Many of its graduates hold a wide range of responsible social work positions in this country and in other countries of the world. The school began as one of the first schools of social work to be established within University auspices. Throughout a half century it has provided leadership through its graduates and its faculty to the development of social work and social work education in America. Today, with a well-qualified faculty and well-developed field work resources in the social agencies of the Twin Cities area, the School of Social Work offers a modern program of professional education for social work.

On the pages which follow, additional information is summarized about education for social work at (a) the undergraduate social welfare level, (b) the graduate professional level consisting of 2 years of study, research, and field work leading to the basic professional degree of master of social work, and (c) the advanced program of study and research leading to the Ph.D. degree.

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Undergraduate Curriculum

The undergraduate course of study is recommended but not required as the only way to qualify for entrance into graduate professional study in the School of Social Work. (See admission requirements for entry into the master of social work program outlined on succeeding pages.) The organization of the 4-year course aims to give the undergraduate the fundamentals of a broad, modern, liberal education, and leads to the B.A. in social welfare degree.

More specifically, the 4-year program is designed to (a) prepare the student for graduate professional education in social work, (b) prepare the student for entry into social welfare positions where the Bachelor's degree is the minimum requirement, (c) provide sufficient knowledge about social welfare programs and social work activities so that the student is enabled to think critically about problems, issues, and approaches to social welfare in his community as a responsible citizen, and (d) contribute to the preparation of students who may wish to seek employment in one of the other human service occupations.

The B.A. in social welfare is subject to the requirements for the degree of bachelor of arts as set forth in the *College of Liberal Arts Bulletin*. Among others, the requirements include Lower Division social science prerequisites (including an introductory course in statistics with laboratory — Soc 45 recommended), courses in each of anthropology, economics, geography, history, political science, psychology, child psychology, and sociology, with not less than 12 Upper Division credits in each of two of these social science fields, plus not less than 12 Upper Division credits in social work — all within the CLA requirement of not less than 75 Upper Division credits for the B.A. degree.

Further details concerning the program requirements for the B.A. in social welfare can be secured from the office of the College of Liberal Arts or the office of the School of Social Work.

Professional Social Work Study

Professional social work study is carried on in the School of Social Work at the graduate level. The student must be eligible for admission to the Graduate School of the University of Minnesota.

Master of Social Work Program

The course of study which leads to the degree of master of social work has as its purpose the following:

Social work is a profession which, together with other professions, contributes to the social, psychological, and physical growth and well-being of individuals, groups, and communities. Social work education is education for the profession, that is, education for practice in a defined area of service. By virtue of its professional nature, social work education purposefully aims at developing in the student a conscious philosophy and a set of attitudes, and aims at imparting a body of knowledge and a set of identifiable skills, which are based on scientific method and are basic and distinctive to the social work profession. The following are basic to social work practice:

1. A substantial body of knowledge about:
 - a. Human behavior in dynamic interaction with the physical environment, the social and political structure of society, as well as human behavior involving interpersonal relationships and individual capacities, needs, and aspirations.
 - b. Social policy, especially those parts of it from which social welfare programs and social work services derive.
 - c. Social work methods of practice.
2. Some degree of competence in:
 - a. The use of social work methods to help persons, individually or in groups, to utilize better their own powers or social opportunities to the end of solving social difficulties, to realize better their potentials for effective community living or to protect persons who lack the power to make constructive use of their social situations.
 - b. The use of scientific method and skills in participating in and interpretation of social work research.
 - c. Participating in community organization process which equates welfare services to community needs.
 - d. Participating in those aspects of the administrative process appropriate to a given position so as to identify and carry out responsibilities in transforming policy into services and in contributing to improvement of policy and service.
3. Attitudes which are appropriate to the social work profession, including:
 - a. Dedication to the responsibility for furthering human welfare.
 - b. Pride and satisfaction in belonging to the social work profession and in exercising its responsibilities and privileges.
 - c. Readiness to modify or relinquish unsuitable attitudes and acquire new attitudes based on new experiences and knowledge.
 - d. Willingness to give preference to professional goals over personal goals.
 - e. A spirit of scientific inquiry with responsibility to contribute to advancement of professional knowledge and method.
4. A philosophy which recognizes individual human welfare as the purpose and test of social policy and the means used by the profession.

THE M.S.W. PROGRAM

Each student must complete courses in the several sequences of field instruction, human growth, social policy, and social work practice, including research. Not less than 90 graduate-level credits—including at least 75 credits in social work (not more than 30 in field work)—must be offered for the M.S.W. degree. Certain courses and field work credits are required of all students. But with the approval of an adviser, there is considerable opportunity for selection resulting in acceptable concentrations aimed at preparing the student for the particular career within social work of his choice.

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REQUIREMENTS FOR THE M.S.W. DEGREE

The degree of master of social work requiring 2 years of graduate study will be awarded to students who fulfill the following requirements:

1. Ninety credits, not less than 60 of which must be exclusive of field work credits, must be presented with an average grade of B or better. No credit is allowed for course work of D quality.
2. Complete not less than 35 credits in a concentration approved by the adviser after completing the basic seminars and courses, involving knowledge and values, research, and administration offered in the first graduate year.
3. Complete research requirements involving knowledge of theory, method (including statistics), design, and production of an acceptable paper.
4. Not less than 45 credit hours must be earned in residence at the University of Minnesota with an average of B or better.
5. Not more than 45 credit hours will be accepted by transfer and then only if earned in an accredited school of social work. Credits accepted for transfer shall be an average of B or better quality. Credits of D or lower will not be accepted.
6. Credits earned in extension courses will not be applicable on degree requirements unless the student is admitted to the Graduate School before taking the course. Not more than 9 credit hours earned in extension will be accepted in any case.
7. The candidate must successfully pass a written examination and/or an oral examination conducted by a committee of three or more members of the graduate faculty.
8. All credits offered for the degree must have been earned within 7 years preceding the quarter in which the degree was conferred.
9. Following the completion of 40 graduate credits not less than 15 of which must have been earned at the University of Minnesota and not later than the opening of the quarter preceding the quarter in which the degree is to be conferred, the student shall submit, through his major adviser, a program of all credits presented for the degree upon the appropriate degree program form.

Advanced standing not to exceed 45 quarter credits may be granted for work done in other schools of social work accredited by the Council on Social Work Education, limited by the above regulations.

Normally, students are not admitted for part-time work at this school. An exception is made for employed social welfare workers in the Twin Cities area who are admitted under certain conditions to an organized part-time study program. (Further particulars can be secured on request.)

ADMISSION TO THE M.S.W. PROGRAM

Professional social work education is graduate study in the School of Social Work which is within and under the standards of the Graduate School. Admission is based on evidence that the applicant has personal and academic qualifications which meet Graduate School standards and give promise of success in graduate education and practice in the profession of social work.

General Information

Personal qualifications include a liking for people, an interest and aptitude for working with them, good health, emotional stability, concern for people and social problems, and willingness as well as capacity for growth.

Academic requirements include a Bachelor's degree granted by a recognized college or university with a satisfactory scholastic record of sufficient quality as to assure creditable performance on the graduate level. A liberal arts background with social science emphasis is the preferred foundation for graduate social work education. Applicants are expected to present the equivalent of 39 quarter or 26 semester credits in the social sciences (i.e., sociology, political science, economics, psychology, anthropology, history) including one or more courses in at least three of these social sciences and a course in introductory statistics. At the time of admission, the applicant will be notified of any deficiencies which must be completed before enrolling. Knowledge of a foreign language is not required for the master of social work degree.

Applicants from Foreign Countries — Applicants from Canada are considered on the same basis as residents of the United States. Generally, applicants from other countries are expected to have completed social work training offered in their own country and to have had several years of work experience in social welfare programs there. Exceptions may be made where no social welfare training is offered, or when a student has completed undergraduate study in this country. Only students with a Master's degree from an accredited school in the United States or Canada may be admitted to the doctoral program here. Students whose mother language is not English are required to pass University of Minnesota English proficiency examinations before they may register for classes. Fluency in the English language is of utmost importance for social work education because of class and field work requirements. Applicants from non-English speaking countries should designate on the application form the name and address of at least one reference who has knowledge of the applicant's ability to use the English language. It is also suggested that students from other countries plan for extra clothing suitable to the cold winter and the warm summer which characterizes Minnesota climate. Western dress is required for field work.

Admission Procedures — Application materials and admission instructions should be obtained from the School of Social Work, 909 Social Sciences Building, University of Minnesota, Minneapolis, Minnesota 55455. Applications must be filed with the School of Social Work well in advance of registration date, preferably 6 to 8 months before the opening of fall term. Beginning graduate students are admitted to begin fall-term-only each year, a practice common to most schools of social work. Persons with previous graduate social work education may be admitted at the term that makes progression from their previous training feasible. Candidates are admitted to the school by the dean of the Graduate School on recommendation of a faculty committee on admissions. The recommendation is based on consideration of the applicant's academic transcripts of credit, personal statement of interests and qualifications, letters of reference, selected objective tests, and, when indicated, a personal interview. As soon as notification of admission is received, the student should promptly inform the School of Social Work of his intention to attend. This is essential in order to complete arrangements for the field work placement. The school will then notify the student about registration dates and program plan-

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ning. Students are not admitted to any class after the first week of the term without special permission.

Summer Offerings — Summer Session courses are generally offered as a service to employed social workers, students majoring in other departments of the University, or for transferring or returning social work students in preparation for a second-year study.

Evening Course Offerings — An organized sequence of evening courses is offered through the University General Extension Division to which persons employed in the social welfare field are admitted.

Doctor of Philosophy Degree in Social Work

The School of Social Work offers an advanced program of study leading to the doctor of philosophy degree (Ph.D.). Only one Doctor's degree, subject to the requirements and standards set forth by the Graduate School, is conferred by the University of Minnesota. The program of advanced study in the School of Social Work operates within these requirements and standards. It has as its objective the preparation of scholars and leaders in the field of social work. The major emphasis is upon research and administration in order to prepare graduates to add new knowledge, to improve methods of practice, to evaluate programs and processes, and to relate knowledge from the behavioral sciences to the social work field.

The number of students admitted each year is limited. Those considered for admission must hold the Master's degree from this school or the Master's degree in social work from a school accredited by the Council on Social Work Education, have subsequently acquired at least 3 years of progressively successful social work practice experience, possess personal qualifications appropriate for leadership roles in the field, and possess intellectual and scholarly qualifications appropriate for advanced study.

The doctoral program involves completing at this school a core of social work courses and seminars totaling not less than 25 quarter credits beyond the Master's program plus completion of a chosen minor field, usually involving not less than 24 quarter credits. (Minor fields available for choice include public health; social sciences, such as sociology; political science; child development; psychology; economics; education; and others.)

The doctor of philosophy degree requires a minimum of 2 years of full-time study beyond the Master's degree. At least 1 of these years must be spent in full-time study in residence beginning in June (under some special circumstances a September beginning is possible). The student is urged to review elementary statistics prior to entering full-time study. Upon completion of major and minor requirements the student is required to pass written comprehensive examinations in social work. (He may also be required to pass written examinations in his minor field.) In addition, he must pass an oral examination covering both major and minor fields. At this point he is admitted to candidacy and is ready to proceed with the completion of his dissertation which must be defended in a final oral examination.

For further information and application materials, address request to the director of the School of Social Work. Also refer to the *Graduate School Bulletin*.

Fellowships and Loan Funds

Fellowships

Scholarships and stipends available through or granted on the advice of the School of Social Work are listed below. If you wish to be considered for a scholarship or stipend, you should notify the School of Social Work not later than May 1. Decisions are made by the first of June for the following academic year. Residual funds may permit some later decisions. Early inquiry is advised.

FELLOWSHIPS ADMINISTERED BY THE SCHOOL

(Separate application form not necessary)

STIPENDS FROM FEDERAL SOURCES (U.S. citizenship required)

- U.S. Child Welfare Traineeships* — Training grants of \$1,700 plus tuition for each of the first 2 graduate years, made possible by a grant from the Children's Bureau, are available to students with a child welfare career objective. Doctoral level traineeships of \$3,525 (for 9 months) to \$4,700 (for 12 months), plus a dependency allowance of \$30 per month for each dependent (not exceeding four), plus tuition and fees, are available from this grant for persons admitted to the doctoral program.
- U.S. Public Health Service Mental Hygiene Act Traineeships* — Training grants are available to qualified students interested in the mental health field, including school social work and corrections, through a grant of funds from the National Institute of Mental Health. Amount of traineeships includes tuition costs plus \$1,800 for the first and \$1,950 for the second graduate year in the M.S.W. program, and for doctoral-level students \$3,600 per year plus dependency allowance not to exceed \$500 per dependent.
- U.S. Rehabilitation Services Administration Traineeships* — Training grants of tuition costs plus \$1,800 for the first year and \$2,000 for the second year are available to qualified students who intend to practice social work in rehabilitation settings. These traineeships are made possible through a grant of funds from the U.S. Department of Health, Education and Welfare through its Rehabilitation Services Administration.
- U.S. Veterans Administration Stipends* — Under an arrangement with the school a stipend of \$3,000 for a 9-month year involving a field work placement (requiring 700 clock hours) in a Veterans Administration hospital or clinic may be paid students in the second graduate year of study. Stipends of \$5,000 are available from the Veterans Administration for doctoral students with research specialization if found eligible by the school and by the Veterans Administration.

OTHER STIPENDS

- Donald Abbott Miller Memorial Fellowship* — Tuition scholarship for graduate social group work student.
- Archie D. and Bertha H. Walker Foundation Fellowships* — For graduate social group work students. Amount based on student's need.
- Assistantships* — Teaching assistant appointments at 25 percent to 50 percent of time, involving payment for services rendered from \$1,620 to \$3,240 per academic year, are available in limited number.

FELLOWSHIPS FROM OTHER SOURCES

(Not administered by the school)

In addition to these sources there are various foundations and special funds which are available for scholarship assistance on graduate level not specifically restricted to social work. Candidates for social work education

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may compete with students in other fields for this type of assistance. Persons interested in this possibility should explore these resources with their college scholarship adviser.

Scholarships and stipends granted by local, state, or national agencies, foundations, or associations ordinarily involve arrangement between the agency and the student, including an application directly to the agency. The School of Social Work, however, often serves in an advisory capacity in the matter. In any event, such a scholarship or stipend is conditioned on the admission of the applicant to a school of social work. Also, most scholarships and stipends require U.S. citizenship or permanent residence in this country.

Detailed information on fellowships and scholarships offered under varying conditions by national voluntary agencies, foundations, church groups, and civic organizations is contained in the publication *Social Work Fellowships and Scholarships in the United States and Canada*. This may be ordered for \$1 from the Council on Social Work Education, 345 East 46th Street, New York, N.Y. 10017.

Aid for Students from Other Countries

The University of Minnesota offers a limited number of foreign student scholarships *for tuition only* to qualified foreign graduate and undergraduate students. These are not specifically designated for social work study, hence foreign students in all fields compete for them.

Further information on sources of aid for foreign students may be secured from United States consuls abroad; from the Institute of International Education, 1 East 67th Street, New York, N.Y. 10021; and from the UNESCO publication, *Study Abroad: Scholarships, Fellowships, and Loans*, United Nations, New York, N.Y.

Loan Funds

Student loans are available through the Office of Student Financial Aid in 107 Armory Building.

Housing

Students have a reasonable choice of accommodations, including modern University residence halls for single men and women; University accommodations limited to married couples with children; and various types of University-approved housing. Persons who arrive early normally have a selection of rooms, apartments, or houses, some within walking distance. For information on either dormitory accommodations or the various types of nondormitory accommodations, write to Director of Housing, Housing Office, 201 Eddy Hall, University of Minnesota, Minneapolis, Minnesota 55455.

Equal Opportunity

The University of Minnesota is guided by the principle that there shall be no differences in the treatment of persons because of race, creed, color, sex, or national origin, and that equal opportunity and access to facilities shall be

available to all. This principle is particularly applicable in the admission of students in all colleges, and in their academic pursuits. It is also applicable in University-owned or University-approved housing, in food services, student unions, extracurricular activities, and all other student services. It is a guiding policy in the employment of students either by the University or by outsiders through the University and in the employment of faculty and civil service staff.

Facilities for Study and Professional Contacts

The University Library, with more than 2,000,000 volumes, is well provided with current literature in the social sciences, including periodicals and government publications for this country and abroad. Available to social work students is the Gertrude Vaile Library Shelf which contains books and pamphlets used in many social work courses. A social service collection in the Minneapolis Public Library makes available current materials in the social work field. In St. Paul, the Public Library, the State Historical Library, the James J. Hill Reference Library, and the Library of the State Division of Social Welfare supplement these sources.

Within the University Library system, the Social Welfare History Archives Center — containing original papers and documents from a broadly inclusive range of national associations and organizations, as well as the personal and professional papers of great social welfare leaders of the past — provides the student of social work history with the most significant archival collection on social welfare history in existence.

The Minnesota Welfare Conference, which is outstanding among state conferences, is held each spring in the Twin Cities, and the students are advised to attend. Other professional conferences and organizations meet in the Twin Cities at various times during the year.

The Student Social Workers' Association is an organization made up exclusively of students. Any person registered in social work courses at the University is eligible for membership. Meetings are held throughout the year for the purpose of discussing social work and also student problems.

The Minneapolis Travelers Aid annually presents the Jewett Award to a student who, in faculty opinion, demonstrates outstanding potential for social work.

Graduate social work students are eligible for student membership in the National Association of Social Workers. It is expected that all social work students will avail themselves of membership and will incorporate participation in the association into their program of graduate study.

Expenses

Estimated Expenses (9-month basis)

Living expenses	\$1,800.00
Books	100.00
Student services fee (\$37 per quarter)	111.00
Tuition (resident) (\$150 per quarter)	450.00
Tuition (nonresident) (\$380 per quarter)	1,140.00
Application fee (payable upon application)	15.00
Foreign student health fee (\$5 per quarter)	15.00

All University fees are subject to modification without notice.

COURSES IN SOCIAL WORK

For Graduate Students

Note — The following symbols are used throughout the course descriptions and will not carry any page footnotes:

- ° An asterisk after a course number indicates those courses through which it is possible for graduate students to prepare required Plan B papers.
- ¶ A paragraph mark preceding a course number in the parenthetical statement means "concurrent registration," i.e., the course so indicated is to be taken simultaneously.
- # A sharp mark in the parenthetical statement means that students must obtain the consent of the *instructor* before attempting to register for the course.

Special Topics

5-010f,w,s. **SPECIAL TOPICS IN SOCIAL WORK.** (Cr ar; prereq #)

Field Work

- 8-010f,w,s. **FIELD INSTRUCTION IN SOCIAL WORK.** (Cr ar; prereq ¶265 or ¶275, or equiv)
Field practice in social work process under direct supervision.
- 8-020f,w,s. **FIELD INSTRUCTION IN SOCIAL WORK.** (Cr ar; prereq 8-010)
Field practice in social work process under direct supervision.
- 8-030f,w,s. **FIELD INSTRUCTION IN SOCIAL WORK.** (Cr ar; prereq M.S.W. degree in social work)
Field experience in social work process under direct supervision.
- 8-090f,w,s. **SEMINAR FOR CLINICAL FIELD INSTRUCTORS.** (Cr ar; limited to persons engaged in supervising students in field work)

Social Welfare Services

- 8-100f,w,s.° **GENERAL SEMINAR: SOCIAL SERVICES.** (Cr ar; prereq grad social work students)
- 8-101f, 8-102w, 8-103w, 8-104s.° **SOCIAL POLICY AND PROGRAMS I-II-III-IV.** (Cr ar)
Social policy and social work programs, public and private, in economic security, housing, health, rehabilitation, interpersonal and intergroup relations, education, recreation, corrections and protective functions and occupational and vocational functions indicating the role of the social work profession.
- 8-111.° **INTERNATIONAL SOCIAL WELFARE.** (Cr ar; prereq #)
- 8-120s.° **SEMINAR: SOCIAL WORK AS A PROFESSION.** (Cr ar; prereq #)
- 8-130f. **SEMINAR: THE HISTORY OF SOCIAL WORK.** (Cr ar; designed primarily for doctoral students)
Consideration of the historical backgrounds of the modern social work movement and the evolution of the theory underlying it. Preparation for historical research through individual projects.
- 8-140s. **SEMINAR: SOCIAL WORK EDUCATION.** (Cr ar; prereq M.S.W. degree)

Human Behavior and the Social Environment

- 8-200f,w,s.° **GENERAL SEMINAR: CONCEPTS OF HUMAN BEHAVIOR IN SOCIAL WORK PRACTICE.** (Cr ar; prereq grad social work student)

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- 8-201f. **CONCEPTS OF HUMAN BEHAVIOR I.** (Cr ar; prereq ¶8-010 or #)
Socio-psycho-biological factors associated with individual and group development as applied to social work practice.
- 8-203w. **CONCEPTS OF HUMAN BEHAVIOR II.** (Cr ar; prereq 8-201 or #)
Continuation of SW 8-201.
- 8-205s. **CONCEPTS OF HUMAN BEHAVIOR III.** (Cr ar; prereq #)
Psychological factors associated with individual and group development as applied to social work practice.
- 8-206f, 8-207w. **CONCEPTS OF HUMAN BEHAVIOR IV-V.** (Cr ar; prereq 8-201)
Psychosomatic and psychiatric illness; implications for social work practice.
- 8-208s.° **CONCEPTS OF HUMAN BEHAVIOR VI.** (Cr ar; prereq grad social work student)
Use of concepts in social work practice.

Social Work Practice

- 8-301s.° **ADMINISTRATION IN SOCIAL WORK.** (Cr ar)
Technical study of the process of transforming social policy into social services.
- 8-305f. **COMMUNITY ORGANIZATION.** (Cr ar)
Analysis of the process by which groups and individuals within a community work together to equate social services to community need and establish social policy for the planning and coordination of social services.
- 8-306w. **SOCIAL WORK METHODS FOR WORKING WITH UNIFUNCTIONAL AND LOCAL ORGANIZATIONS.** (Cr ar; prereq 8-301, ¶8-020)
Principles by which practice can be guided in working toward establishing or implementing social purposes through unifunctional and local organizations.
- 8-307s. **METHODS FOR WORKING WITH MULTIFUNCTIONAL AND COMPLEX SOCIAL STRUCTURES.** (Cr ar; prereq 8-306)
Principles to guide the professional worker in policy-making processes, planning, and implementation of purposes in a complex society.
- 8-310f.° **SEMINAR: SOCIAL WORK ADMINISTRATION.** (Cr ar; prereq 8-301 or #)
- 8-320.° **SEMINAR: COMMUNITY ORGANIZATION.** (Cr ar; prereq 8-301)
- 8-321. **SUPERVISION IN SOCIAL CASEWORK.** (Cr ar; prereq #)
Principles of supervision applied to supervisory process in agencies offering casework services.
- 8-322f. **SUPERVISION IN SOCIAL GROUP WORK.** (Cr ar; prereq #)
Principles of supervision and consultation applied to the supervision of volunteers, subprofessionals, and others working in agencies offering group work services and community programs.
- 8-332w. **ADMINISTRATION IN SOCIAL GROUP WORK.** (Cr ar; prereq 3-801 and #)
Principles of administration as applied to implementation of social group work programs and services.
- 8-400f,w,s.° **GENERAL SEMINAR: SOCIAL WORK METHODS.** (Cr ar; prereq #)
- 8-402f,s. **SOCIAL CASEWORK I.** (Cr ar; prereq ¶8-010)
Introduction to the philosophy and processes, methods, and skills of social casework.
- 8-403w, 8-404s. **SOCIAL CASEWORK II-III.** (Cr ar; prereq 8-402 and ¶8-010)
Continuation of SW 8-402 emphasizing a critical analysis of casework process and development of skill.
- 8-405f, 8-406w, 8-407s.° **SOCIAL CASEWORK IV-V-VI.** (Cr ar; prereq 8-404 and ¶8-020)
Advanced casework method focused primarily on treatment methods.
- 8-412f,s. **SOCIAL GROUP WORK I.** (Cr ar; prereq #)
Introduction to the philosophy and processes, methods, and skills of social group work.

Course Descriptions

- 8-413w, 8-414s. SOCIAL GROUP WORK II-III.** (Cr ar; prereq 8-412 or equiv, ¶8-010)
Continuation of SW 8-412 emphasizing critical analysis of group work process and the development of skill.
- 8-415f, 8-416w, 8-417s.° SOCIAL GROUP WORK IV-V-VI.** (Cr ar; prereq ¶8-020)
Advanced group work methods focused on treatment and community action.
- 8-970. READINGS IN SOCIAL WORK.** (Cr ar; prereq #) Staff
Independent study under tutorial guidance.
- 8-980w,s. SEMINAR: RECENT RESEARCH IN SOCIAL WORK.** (Cr ar; primarily for doctoral students; prereq intermediate lab course in statistics)
- 8-990f,w,s.° SPECIAL STUDIES IN SOCIAL WORK.** (Cr ar; fulfills 9-cr requirement for degree project)
- 8-991f, 8-992w, 8-993s. GENERAL SEMINAR: SOCIAL WORK.** (Cr ar; prereq M.S.W. degree in social work and admission to doctoral program)