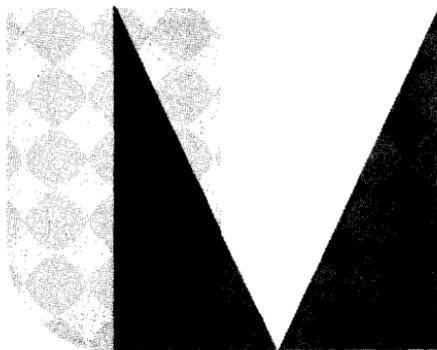


UNIVERSITY
MINNESOTA
BULLETIN



1968-70



COLLEGE OF LIBERAL ARTS

COLLEGE OF LIBERAL ARTS

Abbreviations and Symbols

Abbreviated prefix	3- or 4-letter prefix to course number indicates department's name
Number or letter	Identifies course being offered; course number remains the same no matter which quarter offered
f,w,s	Offered fall (f), winter (w), spring (s)
Number of credits	Listed for EACH quarter in same order as course number(s)
1,2,3	Sequence punctuated by commas may be entered any quarter, subject to listed prerequisites
1-2-3	Sequence punctuated by hyphens must be taken in order listed
†	To receive credit, all courses listed before single dagger must be completed
§	No credit granted if credit has been received for equivalent course listed after section mark
¶	Concurrent registration allowed with course listed after paragraph mark
#	Consent of instructor is required
△	Consent of department or school offering course is required

Examples:

Engl 75f,w,s...4 cr

Interpretation: A 1-quarter English course offered each quarter; grants 4 credits

101f,102w,103s...3,3,3 cr

Interpretation: course sequence may be entered in any quarter (fall, winter, or spring) and in any order; 3 credits granted for each quarter when completed (*Note*—same as hyphenated sequence followed by †: 101f-102w-103s† in *Class Schedule*).

101-102-103...2-3-3 cr

Interpretation: course must be entered in 101 and thereafter taken in sequence; 2 credits granted for 101 if completed, 3 credits each for 102 and 103 if completed.

101-102†-103...2-3†-3 cr

Interpretation: course must be entered in 101 and thereafter taken in sequence; 102 must be completed before credit granted for 101; 5 credits then given for for 101-102; three additional credits granted when 103 completed

Note—For definitions of course levels by numbers, see p. 29.

UNIVERSITY OF MINNESOTA BULLETIN

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The contents of this bulletin and of other University bulletins, publications or announcements are subject to change.

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● DO NOT FAIL TO READ:

Class Schedule (qtrly)

Course hours...days...room numbers...final exam schedules...last-minute changes. For long-range planning, SAVE fall schedule; it alone contains listings for all 3 qtrs

"Official Daily Bulletin"

YOU ARE EXPECTED TO KEEP INFORMED about such changes as course hours, room numbers, and revised regulations listed in *Minnesota Daily*

● YOU MAY NEED TO READ:

Description of LD Courses

Expanded descriptions of Lower Division courses ...available in offices of advisers, divisional offices, and in following libraries: Walter, Wilson, and most dormitories

General Information Bulletin

Calendar...costs...University organization and services

The Moccasin

Handbook for new students...campus activities, services

- KEY TO COURSE NUMBERS—see page 29.

- TO OBTAIN BULLETINS of individual schools and of other colleges:

Call at: Information window, Morrill Hall, Minneapolis Campus

Or write: Office of Admissions and Records, 105 Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455

Note: For Directory of Departments, see p. 258.

College of Liberal Arts

Section I

GENERAL INFORMATION

Legacy

The University of Minnesota has come a long way since 1851, when it first put down roots as a Preparatory Department . . . preparatory to college, that is . . . and when Minnesota was still a territory of less than 10,000 people.

Likewise, the College of Liberal Arts (CLA—often called Arts College) has come a long way since 1868 when the College of Science, Literature, and the Arts put down roots . . . and when a year later William Watts Folwell served as clerk AND registrar AND librarian AND instructor AND errand boy AND first president of the University.

A long, long way!

The University Board of Regents boldly announced in 1870 that it had "secured the approbation of a large number of leading educators of the country and (was) at the present time in operation" . . . whatever that meant?

1. "a large number of leading educators"

Translation: 11 instructors (7 available for Science, Literature, and the Arts, including President Folwell).

2. "in operation"

Translation:

- a. Preparatory Department and "higher departments" of "Science, Literature and The (sic) Arts" and of Agriculture, housed in Old Main (which later burned down); 43 wood-burning stoves heating poorly ventilated rooms.
- b. Dormitory rooms in Old Main, \$3 per term; no extra charge for stove, bedstead, mattress, washstand, table, chairs, and bookcase for volumes borrowed from the University's collection of 2,358 volumes.
- c. Tuition, FREE.
- d. For the College of Science, Literature, and the Arts a year later, an auspicious list of subjects in the basic fields of knowledge: (1) science, including such courses as philosophy and philology, political science, integral calculus, dynamical physics; (2) literature, including English, history of free institutions, French, Greek (instruction also available in such languages as "Sanskrit," Arabic, Spanish, and Norwegian); (3) arts: "aesthetics" or lectures on fine arts.
- e. No classes on Monday "for fear the dilatory might be tempted to violate the Sabbath with attention to secular matters" . . . well!

A BIG event in 1873 was the first graduating class . . . two students. A BIG event today is the 1968 CLA graduating class . . . approximately 1,700 students from an enrollment of more than 16,000.

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Most of today's students have borrowed regularly from 2½ million volumes in the numerous Twin Cities Campus libraries. The vast library system, however, is but one of the much broader range of educational opportunities which CLA lists in this bulletin; all can help you develop a satisfying and useful life.

Goals of the Arts College

The primary goal of the college is to help you obtain a liberal education; to provide the opportunity for you to gain a penetrating understanding of today's world as an outgrowth of yesterday's and a forerunner of tomorrow's; to provide an opportunity for you to develop an informed and constructively critical approach to life and problems of the day.

Your liberal education is directed toward a way of life, one in which you are

- . . . **Inquiring:** Vigorously interested in the world in which you live and understanding of the peoples among whom you live . . . knowledgeable in the fundamentals and the methods of science, the nature and institutions of man, and his creativity.
- . . . **Tolerant:** Open to ideas whether attractive or not . . . trained in the means of gaining more knowledge.
- . . . **Objective:** Able to discriminate between that which is honest and good, and that which is fraudulent and mean . . . able to evaluate and organize.
- . . . **Responsible:** Personally working for the advancement of learning and the improvement of mankind . . . participating intelligently in the solution of economic, political, and social problems.
- . . . **Accomplished:** Able to communicate effectively, to explain or propound those ideas that you have evaluated.
- . . . **Cultured:** Compellingly interested in and appreciative of the arts and other concepts through which men have caught order and beauty from the world.

Toward these ends the Arts College provides the most able and stimulating faculty it can obtain. *Translation:* approximately 600 full-time faculty (with rank of instructor and above) and 800 part-time teaching associates and assistants, who are ready to help you develop an effective educational plan.

● **Reaching Your Goals**—While your goals should be the same as those of the college, they must of necessity be stated in measurable terms, like courses and credits and degrees. It is obvious, therefore, that you and your classmates will move toward these goals by varying routes. All of you, nevertheless, will become acquainted along the way with the same basic fields of knowledge:

- Communication, language, symbolic systems
- The physical and biological sciences
- Man and society
- Artistic expression

As you explore a variety of fields to increase understanding of your cultural heritage and the surrounding world, you will concentrate in a field that you want to explore more deeply. By the time you graduate you should have deepened your understanding and sharpened your abilities so that as an educated person and an enlightened citizen you will

- . . . understand and respect the integrity of the searching, scholarly investigations on which the advancement of knowledge and the widening of man's perspective are based.
- . . . be prepared to continue your study and increase your knowledge, whether through continued formal training or through informal reading and self study.
- . . . be able, if you wish, to acquire additional specialized training toward professional and vocational objectives.

The Arts College provides many guides toward the planning of educational programs to achieve these goals, both the procedural guides outlined in this bulletin and the counsel of skilled advisers. You are urged to use such help freely. You are urged also to take advantage of extracurricular educational opportunities such as lectures, concerts, the theatre, and libraries and museums.

To understand more about these procedural guides and about the services available, be sure to study the remainder of this section. No doubt you will refer to Section I many times.

Organization of the College

Normally, you will not need to consult any of the college administrators listed on p. 1. Instead, you will seek any necessary assistance from a representative of the Scholastic Committee in the appropriate divisional office.

● **Lower and Upper Divisions/Classification of Students**—The Arts College is divided into a Lower Division (for freshmen and sophomores) and an Upper Division (for juniors and seniors), each with several offices (listed on p. 258). Each new student is assigned to one of the Lower Division offices. (Any qualified student may enroll in the Honors Division, which then becomes his college office.) In Lower Division, the student will be encouraged to distribute his work in a number of fields so as to gain breadth of education, at the same time taking courses prerequisite to his major.

If he plans to earn a B.A. degree, he will spend his second 2 years in Upper Division, where he will be reassigned to the office appropriate to his major. He will then specialize in a field of interest while continuing his liberal education.

CLASSIFICATION OF STUDENTS

Freshman	Student with less than 39 cr
Sophomore	Lower Division student with 39 cr or more
Junior	Upper Division student with less than 135 cr (<i>Note: A student is not a junior until he has been ADMITTED to Upper Division</i>)
Senior	Upper Division student with 135 cr or more

See the following pages for more complete explanations of opportunities and requirements.

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Departments—Departments in the Arts College are organized into divisional councils covering general areas of humanities, social sciences, and mathematical, physical, and biological sciences. Courses and requirements of these departments are listed in Section II of this bulletin, and faculty are listed in Section IV.

Also listed in Sections II and IV, respectively, are departments and faculty from other colleges which offer courses in the Arts College.

Student Intermediary Board—Students play a part in the college organization through the Student Intermediary Board, a representative group of 25 students which speaks for the student interest in the college. Through the board, students may offer proposals about new courses, changes in instructional methods, regulations, student services, and other matters affecting their welfare. It also nominates the student members of college committees and coordinates the student membership on student-faculty curricular committees in several departments.

The board sponsors many faculty-student projects, such as Liberal Arts Week. It organizes a Freshman Council, parallel in structure and function to the board, which examines freshman problems. The board makes a biennial evaluation of every department and major in the college and cooperates in producing a course description booklet.

The board's five standing committees deal with problems of student personnel, instruction, curriculum, board administration, and general relations. Arts College students are welcome to assist any of these committees with their projects. Information about board membership, activities, or committee work is available at its office, 101 Johnston Hall.

Honors Student Council—The Honors Student Council represents students in the determination of policy for the development and administration of the honors program. The council works closely with the faculty and administration to implement proposals; it also elects the student members of the Faculty Honors Council.

The council offers many informal and extracurricular opportunities to its members. Several coffee hour programs with guest speakers or panels are held each quarter. Small, informal evening discussion groups meet frequently in members' homes. The council tries to increase friendly contact among honors students and with the faculty.

Any honors student may join the council; there is no limit to the number of members the council may have. For further information on the Honors Student Council or its five committees on curriculum, research and independent study, programs and facilities, publications, and public relations, visit or write the office in 115 Johnston Hall.

Academy: A Journal of the Liberal Arts—*Academy* is published by the Publications Committee of the Honors Council toward the latter half of each academic quarter. *Academy* contains a broad selection of student work in the following areas: essays (scholarly and informal), short fiction, poetry, art, and photography. The aim of the journal is to provide a forum for undergraduate writing of general interest, economy of rhetoric, and freshness of approach. Contributions are accepted from any undergraduate in any college of the University; send typed manuscripts to *Academy*, 115 Johnston Hall.

Advisers—See p. 26 in this section, and also Section IV for listing.

Graduation Requirements

Admission Requirements/see *University's Bulletin of General Information*

NEW Bachelor of Arts, Degree Requirements

OLD Graduation requirements—Qualified students may still seek the B.A. degree under the old requirements (listed on p. 254). To qualify, a student must fit into one of two categories: (1) have been officially admitted to and completed work in CLA before Summer Session 1967, or (2) be an advanced-standing student (39 cr or more), entering through spring quarter 1969.

The following NEW requirements for the B.A. degree apply to students entering CLA as freshmen (fewer than 39 previous college credits) in the first summer term 1967 and thereafter, and to all students entering after spring quarter 1969.

SUMMARY OF NEW B.A. GRADUATION REQUIREMENTS

- A. **Minimum Credits**—180 (75 cr must be in Upper Division courses)
- B. **Distribution Requirements**—Complete freshman English, foreign language, and at least 54 cr from group distribution requirements.
- C. **Residence in Upper Division**—Earn 45 cr after admission to Upper Division, 30 of them in the senior year.
- D. **Major (field of concentration)**—Complete a departmental or interdepartmental major or a combined program with Medical School or School of Dentistry.
- E. **Upper Division Credit Outside Major**—For those with a departmental major, 30 cr in Upper Division courses outside the major department (courses must be listed in this bulletin).
- F. **Quality of Work**—C average in all work presented from the University and *in toto*, a C average in all UD courses, and a C average in all UD courses in the major. In calculating the overall grade point average, the Scholastic Com-

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mittee may, in rare cases, approve the omission of certain quarters of work done in the Lower Division.

G. English Proficiency Test—Meet the Upper Division English proficiency requirement.

DETAILS OF NEW B.A. DISTRIBUTION REQUIREMENTS/ LOWER DIVISION PROGRAMS FOR ENTERING UPPER DIVISION

While your general education should continue into the Upper Division, and indeed throughout life, this phase of development is especially emphasized in the Lower Division. Together with any preprofessional or pre-major work, this will require at least 2 years of study.

● **Requirements**—To assure you a reasonably broad, general education adapted to your particular background and needs, the following requirements have been established. Note that these requirements contribute to the essential objectives of general education listed above just prior to Organization of the College. It is your job, in consultation with a faculty adviser, to determine which specific courses within these requirements will most effectively round out your education. You have a special responsibility to attempt to correlate your college work with your high school background, avoiding overlap in areas of strength and seeking courses in areas yet untried.

Insofar as possible, you should complete most of these requirements during the 2 years in Lower Division, though such completion is not prerequisite to transfer to Upper Division; the Upper Division years are devoted to fulfilling a major sequence and achieving a still stronger general and liberal education. Requirements for entering professional colleges are listed in Section III of this bulletin.

1. Freshman English

Engl 1-2-3 or Comm 1-2-3 or exemption from requirement. All students are required to have an English placement classification before registration for one of these courses.

2. Foreign Language

Complete the sixth quarter of a foreign language (approximately 25 cr) or pass a validation examination at that level. Background from high school relates to this requirement as follows:

<i>High School Study</i>	<i>Additional in College</i>
4 yrs	5 cr at higher level in same language
3 yrs	10 cr at higher level in same language
2 yrs	15 cr at higher level in same language
1 yr	20 cr at higher level in same language
None	25 cr in one language

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.

3. Group Distribution Requirements**—at least 54 cr in six areas of four groups

- a. 9 cr from one area in Group A
- b. 9 cr from one area in Group B
- c. 9 cr from one area in Group D
- d. 18 cr from Group C, 9 cr in each of two areas
- e. 9 cr from one of the remaining areas in any of the groups, subject to restrictions in footnotes below.**

While the distribution requirements usually are viewed as Lower Division requirements, the following list does include specific Upper Division courses which may be used to satisfy the requirements. The list changes from time to time. Current lists are available in every CLA college office.

Group A: Communication, Language, Symbolic Systems (min. 9 cr)

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

- Clas 48, 48T, 68, 68A, 68T
- CIPh 73G
- East and South Asian Languages: Skt 55, 56, 57, Ben 75, Guj 75, Hindi 75, Mar 75
- English: Comp 27-28, Engl 60
- Ger 57-58-59; 61-62-63; 64-65-66; 80
- Jour 1
- Linguistics: any course numbered below 100
- Middle Eastern Languages: Arab 54-55-56; 61-62-63; Heb 51-52-53
- Phil 1, 2, 10, 70
- Romance Languages: Fren 54, 55, 56; 57, 58; Span 54, 55, 56; 57-58; Port 55
- Scandinavian: Dan 50; Fin 50; Nor 50; Swed 50
- Slavic and East European Languages: Russ 56-57-58; 61-62-63
- Spch 2, 5, 5H, 6, 9, 50, 51, 55, 56, 61, 67, 97

Area 2: Mathematics, Statistics

- Math T through 44; Quantitative Analysis 5, 52-53-54
- Soc 45
- Stat 41

Group B: Physical and Biological Sciences (min. 9 cr)

Note: If only one of these areas is elected it must be with laboratory**; if both of these areas are elected, only one need be with laboratory.

Area 1: Physical Universe

- With lab*
- GeCh 4-5†
- Geo 1, 2

** Additional information on Group Distribution Requirements:

1. At least 3 cr must be taken in a department in order to count.
2. Maximum of 12 cr per department may be used for all group distribution requirements, even though courses from some departments may be used in more than one group.
3. Courses from no more than two departments may be used in any one area.
4. Courses used for freshman English and for language requirements may not be used for group distribution requirements.
5. Honors sections may be substituted for regular courses (unless otherwise specified—e.g., Hist 83H-84H).

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NSci 4-5† plus one of the following: NSci 6, Geo 1, Ast 11 or 51
Phys 1-2-3 with 1A-2A-3A; 4-5-6; 7-8-9; or 21-22-23 with 21A and either
22A or 23A

Without lab

Any 9 cr from Ast 11 or 51, 52 and 53

NSci 1-2†

Phys 1-2-3

Phys 21-22-23

Area 2: Biological Universe

With lab

Biol 1-2†

Without lab

Any 9 cr from the following: biology, botany, genetics, microbiology, physiology, zoology

NSci 3

Psy 55

Group C: *Man and Society* (min. 18 cr, 9 in each of 2 areas)

Area 1: Analysis of Human Behavior

Anth 1A, 2A, 42, 68, 80, 85, 90, 99

CD 80, 81

Econ 40, 65, 65T, 66, 66T, 75, 80

FamS 1, 1A, 25

Pol 35

Psy 1-2†, 4-5†**, 10, 75, 90

SSci 1, 51

Soc 1, 1A, 1D, 1H, 10, 53, 118, 120, 123

Area 2: Analysis of Social, Economic, and Political Institutions

Econ B, C, 1-2†, 1T-2T†, 20, 50A-B, 62, 63, 67, 68, 69, 103, 104, 160,
154, 164, 174, 184

Geog 1, 4, 41, 61, 63, 64, 65, 66, 67, 71, 73, 78, 79, 90H, 91H, 92H

Jour 3, 90, 109, 111, 121

Phil 4

Pol A-B, D, E, 1-2, 7, 8, 25, 26, 30, 51, 52, 53, 60, 61, 80, 81

SSci 2, 3, 52, 53

Soc 2, 3, 14, 140, 144

Area 3: Development of Civilization: Historical and Philosophical Studies

AmSt 90-91-92

Clas 1, 2, 3, 4, 5, 6, plus honors sections of these courses

East and South Asian Languages: Indn 1, 2, 3; Ortl 76, 77

Econ 170

Ger 68, 91, 93

Hist 1 through 24, incl 50 through 99, exclusive of 83H, 84H; 103 through
159, exclusive of 100B, 101B, 102B

Hum 1, 2, 3, 4, 1A-2A-3A, 9, 11, 12, 13, 21, 22, 23; 51 through 55, 61,
62, 63, 71, 72, 73, 99, 131, 132, 133

Middle Eastern Languages: Arab 74-75-76; 77-78-79; 91; Heb 77-78;
74, 75

Phil 3, 50, 51, 52, 53 and honors sections of these courses

Pol 40

Romance Languages: Fren 60, 61, 62; Ital 60-61-62; Span 60, 61, 62;
Span 63, 64

Slavic and East European Languages: Russ 75-76-77

** For students electing the course through spring 1969, Psy 4-5† will satisfy the laboratory requirement for the B.A. degree, even though psychology does not count under Group B where the laboratory requirement is usually met.

Group D: Artistic Expression (min. 9 cr)

Area 1: Literature

AmSt 90-91-92

Clas 42, 42A, 46, 80, 81, 82, 91, 92, 93

Engl 21, 22, 23, 37, 38, 39, 52, 53, 54, 55-56, 66-67, 72-73-74, 75, 76, 77, 78, 79

East and South Asian Languages: Chin 110, 111, 112; Jpn 110, 111, 112; Hindi 57

Ger 53, 54, 55

Hum 1, 2, 3, 4, 1A-2A-3A, 11, 12, 13, 51 through 59, 61, 62, 63, 131, 132, 133

Jour 103

Middle Eastern Languages: Arab 81-82-83

Area 2: The Arts

Arch 21, 51, 52, 53, 54, 55, 56

LA 62-63

ArtH 1, 2, 3, 4, 5, 47, 50, 56, 57, 58, 59, 60, 86-87-88

ArtS 10, 11, 20, 23, 24, 25, 26, 32, 33, 40, 41, 42, 45

Mus 1 through 99, exclusive of 96H; 104-105-106; 124-125-126; 130, 131, 132, 147, 148, 149, 190

Spch 4, 65, 66, 68, 69, 70, 81-82, 83

Th 11, 12, 13H, 21, 22, 23, 24, 34, 61-62, 63, 90, 91, 92

CREDITS IN RESIDENCE

Whether transferring from the Lower Division or from another college you must earn a minimum of 45 credits in residence in Upper Division and spend a *minimum* of 2 quarters (30 cr) of the senior year in residence in Upper Division. An average of C must be obtained in all Upper Division courses. If you have only 1 year of residence, it must be your senior year.

● **Senior-Year Balance Sheet**—When you have earned approximately 135 credits, you will receive a statement of your remaining degree requirements.

Before the beginning of your next to final quarter you should check your record with the Upper Division office and apply for graduation at the Office of Admissions and Records.

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 sequence listed below:

1. *Departmental Major*

- a. A major (minimum of 27 cr or more) is offered in nearly 40 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 the UD courses in the major department.
- b. 30 cr hrs must be taken in UD courses outside the major department; the courses used must be listed in this bulletin.
- c. All UD programs require a minimum of 75 UD credits with a C average in all UD courses.

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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 *which comprise the major and in all UD 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. C average is required in the courses specified for the major and in all UD courses.
- c. The requirement of 30 cr outside the major department is not applicable with an interdepartmental major.
- 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 26).

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 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 cr) must be earned in Upper Division residence, and a C average in all UD 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.

● **Prerequisites for Major**—In planning your program, you must take note of the Lower Division courses prerequisite for an Upper Division departmental or interdepartmental major. The requirements for the various majors in the Upper Division are described in Section II of this bulletin. If you have several possible majors in mind, plan your program to cover all the possibilities.

APPLICATION FOR ENTRANCE INTO UPPER DIVISION

If you are a B.A. or B.F.A. degree candidate, it is important that you enter the Upper Division as soon as you are eligible in order that you can plan your further work with a major adviser and can fulfill properly the residence and other requirements of the Upper Division. To encourage this transfer at the proper time, you may be permitted to complete in Upper Division any requirements not yet fulfilled. Usually you will not be permitted to continue in Lower Division after earning 95 credits.

Between the first and sixth weeks of the quarter in which you will complete 84 credits, you should apply to the Upper Division office appropriate to your proposed major (see page 258) for entrance to the Upper Division. No application forms will be issued after the sixth week of any quarter or *during the summer*. You must present two copies of your previous Arts College record as well as any advanced standing records that do not appear on your transcript.

If you wish to graduate with honors, you should apply to the Honors Division office for entrance, rather than to one of the Upper Division offices.

● **Approval of Your Program**—At the time of admission to the Upper Division you will receive a statement of your status. You will also receive the form "Major Adviser's Instructions to Upper Division Office," on which you will be expected to list your proposed program of courses to fulfill the requirements for a B.A. degree. All University of Minnesota students in residence must complete this form before registration in the Upper Division; the period for preparation and approval is from the first to the sixth week of the quarter prior to registration in Upper Division. Students entering Upper Division from Lower Division in a fall quarter must complete the above procedure in the preceding spring quarter because advisers are not available during the summer.

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

In working out your Upper Division program you will have wide freedom to choose courses particularly adapted to your purposes, though basic requirements must be observed (listed below). Be sure that your program will fulfill them.

To Modify a Major Sequence—Except where otherwise indicated under departmental headings, modifications of major sequences are seldom permitted. The student should seek his adviser's approval on an amendment to his program.

Minor Sequence—The college does not offer a minor under the NEW graduation requirements. Students intending to minor in any department under the OLD graduation requirements (see page 257) are invited to consult the appropriate Upper Division office.

QUALITY OF WORK

● **Credits and Quality Required**—For entrance into the Upper Division, you must earn at least 84 credits (most students have 90) with an average of C or better. Admission on probation may be approved in special cases when scholarship average is slightly less than C.

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 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 transcript but may not be used to make up a grade point deficiency at the University.

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. General College credits are transferred without grades attached, except that grades of D are not accepted.

General Extension Division—The General Extension Division offers courses through the Department of Evening Classes, including television courses, and the Department of Independent Study. A student who wishes to count classes toward a Bachelor's degree given by the Arts College must meet admission

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requirements and be admitted to the college; degree requirements for such students are the same as for regular students.

Correspondence courses may be applied toward a degree and may be used in the major with the consent of the major department. Credits earned in correspondence are not regarded as credits in residence. Students must request, at their college window, the posting of extension and correspondence credits.

A student who has been admitted and is planning to qualify for the B.A. degree should observe these procedures:

1. Apply for admission to Upper Division in person or by mail. Majors in social sciences (except psychology) apply to 214 Social Sciences Building; majors in the humanities to 206 Folwell Hall; majors in the sciences, mathematics, journalism, and psychology to 223 Johnston Hall.
2. Attend one of the evening Arts College orientation meetings scheduled each term by the General Extension Division to get program folders and instructions for their use.
3. Complete the form "Major Adviser's Instructions to Upper Division Office" according to directions received with it. (Major advisers usually, though not always, are available during Extension Division class hours.)
4. Register in regular day courses for required work not offered through extension or independent study classes.
5. Complete 45 credits in residence *after* admission to Upper Division. Extension courses in St. Paul, Minneapolis, and Duluth are "in residence"; independent study work is not.

Any credits earned through the General Extension Division by a student who has been dropped from the Arts College are applicable toward an Arts College degree only with explicit approval of the Scholastic Committee.

A student who believes adjustments should be made for him in any of the regulations or procedures should consult the Scholastic Committee, 225 Johnston Hall, 214 Social Sciences Building, or 206 Folwell Hall.

ENGLISH PROFICIENCY TEST

Every candidate for the B.A. or B.F.A. must demonstrate ability to write English satisfactorily. Demonstration consists, in part, of passing the English Proficiency Test, an impromptu essay test offered each quarter. Students should take the test during their junior year; those who fail may repeat it as often as necessary to pass (the first repetition no sooner than 6 months after the failure). A \$5 fee is charged for repeating the test. Students are responsible for taking remedial measures to assure their meeting test requirements.

Bachelor of Fine Arts, Degree Requirements

SUMMARY OF GRADUATION REQUIREMENTS

- A. **Minimum Credits**—180 (at least 90 cr must be in B.F.A. program)
- B. **Residence in Upper Division**—Student must be in residence for last three quarters before graduation
- C. **Distribution Requirements**—
 1. Freshman English—9-15 cr

2. Group Distribution Requirements—36 cr (9 cr 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

1. Grade points for transfer students are calculated on CLA grades separately (as for B.A. candidates)

E. Satisfactory Completion of Projects, Seminars, or Recitals (some departments)

F. CLA English Proficiency Test

Note: For full details, see the B.F.A. booklet (available from the department) or see the department concerned.

Admission Procedures—Admission standards and procedures are basically the same as for any other student entering the College of Liberal Arts. In addition, the applicant must be in his first quarter in CLA, and present to the B.F.A. committee of his intended major department a detailed application for admission. Instructions can be obtained from the departmental office.

Transfers from B.A. to B.F.A.—The departmental B.F.A. Committee may permit qualified B.A. students to transfer to the B.F.A. program. No student shall be admitted to candidacy for the B.F.A. degree unless he has met the curricular requirements for admission to the program or is prepared to delay graduation until he has done so.

Exceptions to the 90-cr requirement may be made upon recommendation of the departmental B.F.A. Committee to the appropriate CLA committee, in the case of a student who is qualified to transfer from the B.A. to the B.F.A. program. In general, entrance into the program should not be later than the end of the freshman year, but in exceptional cases transfer may be made not later than winter quarter of the junior year.

Transfer from Another Institution—The transfer student 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.

Note: See Section II for details.

BACHELOR OF FINE ARTS IN MUSIC

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

The B.F.A. in Music is offered to talented students of marked ability who plan to follow music as a profession. The B.F.A. degree, however, is more

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restrictive than the B.A., and thus the B.F.A. offers fewer alternatives, both during and after pursuit of the degree. The following students ought to seek the B.A. degree rather than the B.F.A.:

1. Student who wishes to pursue advanced degrees in liberal arts.
2. Student with specific interest in music history and criticism, or music administration.
3. Student who desires to withhold specialization until after completing a broader liberal arts education than B.F.A. offers.
4. Student who is uncertain of his areas of special interest within music.
5. Student whose commitment to a career in music is indefinite.
6. Student whose interest in music is avocational.

BACHELOR OF FINE ARTS IN STUDIO ARTS

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

The B.F.A. in Studio Arts is a 4-year professional degree for students who show an early and serious interest in art and who indicate an intent to pursue careers as professional artists, including those who plan to attain the M.F.A. degree.

BACHELOR OF FINE ARTS IN THEATRE ARTS

Speech, Communication, and Theatre Arts B.F.A. Committee Chairman: Professor Theodore Herstand

The B.F.A. 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. The B.F.A. is more restrictive than the B.A., tending to start the student on a route which offers fewer alternative paths than the B.A., both during and after pursuit of the degree.

The following students are encouraged to seek the B.A. degree rather than the B.F.A. degree:

1. Student who wishes to pursue advanced degrees in liberal arts.
2. Student with special interest in playwriting, theatre history and criticism, or theatre administration.
3. Student who desires to withhold specialization until after completing a broader liberal arts education than the B.F.A. offers.
4. Student who is uncertain of his areas of special interest within the theatre.
5. Student whose commitment to a career in theatre is indefinite.
6. Student whose interest in theatre is avocational.

Two-Year Program for Associate in Liberal Arts Degree

Students entering the Arts College before summer 1967 may follow the OLD requirements listed on page 258.

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 are applicable under the NEW graduation distribution, which applies to students entering the Arts College after June 1967. Students who enter with 39 or more credits before June 1969 may elect the OLD distribution plan. Students who may be eligible for graduation under the OLD distribution should refer to p. 258.

Requirements:

1. Earn at least 90 cr with a GPA of at least 2.00.
 2. Earn at least 45 cr in residence. If you enter the Arts College with advanced standing, you must complete the last 45 cr 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 pp. 8 and 9):
 - a. Foreign language through a third-quarter course in college or exemption by examination of high school work; 9 cr 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 cr in Group B (Physical and Biological Sciences), and 15 cr 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 the Office of Admissions and Records.

Adult Special Students

Special facilities are available for students who wish a special and limited program in Arts College courses and who are not candidates for a degree. If you seek admission as an adult special student you should ask for an application blank from the Office of Admissions and Records. The application must receive the approval of the dean of that office and of the Scholastic Committee and must be submitted before the deadline stated in the University calendar.

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Ordinarily, to be accepted you must be 24 years of age or have a Bachelor's degree, and you must be seeking a special and limited course of study in Arts College courses.

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

1. You may take any course listed in this bulletin for which you have the necessary prerequisites. If you wish to carry most of your courses in a college other than the Arts College, you should register in the other college.
2. You may not become a candidate for an undergraduate degree without the approval of the Arts College. After completing 1 full year of work (45 cr) with a C average, you may apply to the dean of admissions and records for regular classification.
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. Your registration each quarter must be approved by a representative of the Scholastic Committee. Undergraduates go to 214 Johnston Hall and graduates to 225 Johnston Hall. *Registration dates are the same as for undergraduates.*
6. Adult specials wishing to make later application for admission to the Graduate School may petition to transfer to their graduate records only their first term's work as adult specials. If you are in this category, your Adult Special registration must be approved by a graduate adviser.
7. Adult Specials must maintain at least a C average.

Registration, College Regulations, Special Opportunities

Registration

Note: For more extensive descriptions of freshman-sophomore courses see *Description of Lower Division Courses*, which is available in advisers' offices, divisional offices, Walter and Wilson libraries, and most dormitories.

HOW TO REGISTER

Registration is enrollment in the particular courses you will take for the coming quarter. Such action encourages you to reexamine educational goals in light of your activities both in and outside the classroom.

Orientation Programs—Preliminary to registration, the Arts College joins with other divisions of the University in helping new students, both freshmen and those with advanced standing, to learn about the college program. Usually this involves 2 days of testing, counseling, registration, and group activities.

A new student receives his admission certificate through the mail from the Office of Admissions and Records, and is sent an orientation-registration date by the Arts College. Students transferring within the University should obtain from the Change of College Window (Room 6C, Morrill Hall) an authorization to transfer. Previously registered students, returning after an absence, should seek a registration permit from the Recorder, window 10 or 14 in room 105, Morrill Hall. Continuing students obtain their permits from designated distribution points, usually in or near their divisional offices.

All students receive printed instructions with their registration materials. Careful compliance with the instructions will help avoid difficulties and inconveniences.

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

● **Registration Dates**—Registration for students on campus begins several weeks before the opening of the quarter and is announced in the Official Daily Bulletin of the *Minnesota Daily*. Service at the Class Reservations Office is controlled alphabetically according to the student's last name; the alphabet rotates each quarter to give every student an equal opportunity to register early. Registration is not complete until registration material has been turned into the Office of Admissions and Records.

The expiration date for registration appears in the University Calendar section of the *Class Schedule* and in the University's *General Information Bulletin*. Only in exceptional circumstances may you register after that date; in this case you must obtain approval from the Scholastic Committee and pay a special privilege fee. If fees are not paid by a designated date, your registration for the subsequent quarter will be delayed.

New students entering in the fall come to the University in small groups for 2 days of orientation and registration throughout August and early September. Those unable to come then and those entering the winter or spring quarters are given a modified 2-day program shortly before classes begin. New students transferring with advanced standing are also given orientation programs. Students are notified of dates by mail.

Change of Registration—Course registration changes may be made in accord with the following procedures, once changes are permitted (usually at end of controlled registration period):

1. *Lower Division Cancellation*—Obtain Change of Registration ("cancel-add") form in college office, seek approval of adviser, clear at Class Reservations office (if course is reserved), and turn in form at window 14 Morrill Hall. Usually it is wise to discuss the proposed cancellation with your instructor; after 6 weeks of the quarter a notation from him (on the form) of your standing in the course is required.
2. *Upper Division Cancellation*—As above, except adviser approval is not required and, after 6 weeks of the quarter, Scholastic Committee review is required. The Upper Division window in Morrill Hall is 10.
3. *Limitation on cancellation* (Scholastic Committee approval required).
 - a. *Cancellation* (other than in first 5 days of quarter when adjustments of registrations may be necessary) is permitted only once each academic year. Students are expected to arrange their programs carefully, take into account necessary outside obligations, and stay with programs for which they register. Only in unusual cases will a second cancellation be approved.
 - b. *Cancellations below 12 cr*—Standards of the college are defined in part by number of credits a student must take; only under extenuating circumstances can the standard be temporarily waived.
 - c. *Cancellation in last week of classes*—Cancellation in the last week is rarely approved; by that time the student has essentially completed the course and his work must stand for a grade.
4. *Attendance in Class Until Cancellation Officially Approved*—Until final official approval of cancellation is obtained, the student is responsible for the work of the course. Informal approval by adviser and instructor is not sufficient.

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5. *Addition*—Permission of Scholastic Committee and instructor is required after 3 days of the quarter. Permission after 5 days is difficult to obtain.
6. *Fee for Changing Registration*—A service fee of \$2 is charged for a change of registration (after the first 5 days) to cover, in part, the expenses involved.

● **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 that 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 concerned and of the Arts College Scholastic Committee. Such credits may not be used to satisfy the B.A. requirement of 15 Upper Division credits outside the major and minor (under old distribution requirements).

Courses in General Extension Division—(see page 13). 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.

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 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 the student 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.

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 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 the Scholastic Committee about the possibility of being assigned to a college course that repeats what you had in high school. If this repetition is approved by the Scholastic Committee, the amount of credit, if any, will be determined by the committee; full credit is seldom permitted. No approval is necessary if you must repeat high school trigonometry.

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.

Canceling Out of College—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 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.

Petition for Exemption from College Regulations—The faculty has set up certain regulations to help students achieve a good education and to facilitate operations of the Arts College. If a University regulation seems to conflict with your educational goals, the Scholastic Committee might be able to help. To seek exemption to the regulation, proceed as follows:

1. Pick up a petition form in your college office; complete form and either take or mail it to the Lower or Upper Division office where your records are. Lower Division students who wish to discuss the petition with a Scholastic Committee representative before submitting it should call or stop by for an appointment. Upper Division students usually can see a committee representative without appointment.
2. Pick up your reply in same college office or, if you prefer, leave a self-addressed envelope.
3. If you have questions regarding action taken, you may make an appointment to see a committee representative for explanation.

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Official Daily Bulletin—Students are held responsible for announcements affecting them published in the Official Daily Bulletin in the *Minnesota Daily*.

Regulations

● **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**—(See also *P-N Grading System below*) There are four permanent passing grades, A (highest), B, C, and D (lowest), showing the quality of work in a course. Though D is a passing grade, any D must be balanced by a grade of B or better in order to maintain the C average required for graduation. A grade of F (failure) indicates that the student did not successfully complete the course.

A temporary grade of I (incomplete) is assigned when the instructor has insufficient information to permit a permanent grade. It indicates that some required work is unfinished or that the student, though officially registered, did not appear or left without officially canceling. (If the student drops out or cancels after the sixth week while failing, an F is assigned.) A student receiving an instructor's permission to make up an I must do so by the end of the sixth week in the next quarter of his residence (unless, upon petition, the Scholastic Committee should permit an extension of time). An I that is not made up becomes an F. Instructors or departments may schedule examination make-ups at any time during the 6-week period; students are responsible for learning of make-up dates. An I may be made up while a student is not in residence.

A registration symbol W (withdrawal) indicates that a student has been permitted to cancel officially without grade. It is assigned during the first 6 weeks irrespective of the student's class standing. After that time an F is recorded only if he is doing passing work; if failing, he receives an F.

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.

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

● **P-N Grading System**—The college is currently experimenting 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.

P stands for "pass" and N for "no credit." Neither counts in the grade point average, but credits of P count toward graduation. The dividing line between P and N is approximately the same as that between D and F.

Election of the P-N system must be indicated for a particular course on the registration blank. There are certain restrictions on who may elect P-N, how many and what courses may be elected, and the like. These restrictions are under revision, since the system is experimental, and students should read carefully their registration instructions to be up to date on the procedure. There are basic restrictions that students may not present more than 25 percent of

their work with P grades and may not take work in or specifically prerequisite to their major on P-N.

Regulations concerning incompletes and cancellations, noted above, apply as well to P-N registrations except that N (no grade) should be read wherever F (fail) appears.

Note: For further details see *Class Schedule*.

● **Grade Points**—Quality of work is indicated by *grade points*. Grade points are assigned to course grades as follows: to each credit with a 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, extracurricular 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. In the Lower Division, a student is placed on probation if he is 15 grade points below a C average. After 70 attempted credits, he is put on probation if he is 10 grade points deficient. If a student is *admitted* to either Lower or Upper Division with less than a C average, his admission is probationary. A student already in Upper Division is placed on probation if he falls 9 grade points below a C average, over all, in his major, or in all courses taken while registered in Upper Division (or in Upper Division courses, for students under the NEW graduation requirements), or if *any* deficiency continues beyond 1 quarter, or if he has been on probation previously and falls below a C average in any category.

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 a C average; in Upper Division this rule applies to all three areas noted above.

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Exclusion from Arts College—Students may be excluded from the Arts College under one of the following headings:

1. *Dropped for low scholarship*—A student who fails to meet the terms of his probation may expect to be dropped.
2. *Hold for committee clearance*—Sometimes a student's scholastic difficulty indicates that he should not continue for the time being even though the record hardly requires official drop action. In such cases his later return must be approved by the Scholastic Committee.
3. *Discontinued*—If a student is pursuing an appropriate course but is handicapped by conditions he cannot control (ill health, family emergencies, etc.), he may be required to discontinue his registration until these conditions have improved. When discontinuance takes place at any time other than the end of the quarter, the courses for which he is registered may by action of the Scholastic Committee be recorded as canceled without grade.

Readmission to Arts College—Students excluded from the Arts College are allowed to return only with the permission of the Scholastic Committee.

Students classified as discontinued must present evidence that the conditions which hindered their work have been remedied.

Petitions for readmission are normally considered only after an interval of 1 year. Such petitions must present specific evidence that the student is likely to succeed with college work.

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.

Students who return under the provision of the preceding paragraphs will be registered on strict probation. They may be dropped at any time that their work is unsatisfactory.

● **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, however, 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 if he was doing passing work and an F (or N) if he was not. An I not made up will be changed to an F (or to N for P-N registrations).

Special Opportunities

Examination for Credit—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 students 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 \$5. Usually no grade is assigned. "Student" is defined as being 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.

Examinations to Demonstrate Proficiency in Prerequisite Courses—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 student can find opportunities for independent study in courses from a number of departments. These courses appear in Section II under such titles as "Readings in . . ." A more formal and a more expanded program of independent study, however, is currently under discussion in the college. Any interested student can obtain more details from the Scholastic Committee representative in his divisional office.

Honors Programs—The Arts College offers an extensive program of honors opportunities that provide challenging educational experiences appropriate to superior abilities. 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 entrance 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 intensive 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.

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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.

O. Meredith Wilson Scholar Program—Students who have not only achieved the standard of academic excellence which permits them to enter the Honors Division but also are engaged in activities that significantly contribute to the University community are designated O. Meredith Wilson Scholars. Information about the program can be obtained from the Honors Division.

Scholarships and Awards—In addition to the all-University aids available through the Bureau of Student Loans and Scholarships, 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.

University College—The University College, operating under a University-wide committee, registers students who find they must cross college lines to obtain programs fulfilling their needs. Any student who finds that his specific objectives cannot be satisfied by the program in any one college and who believes that his program meets the requirements of the University College should call at 106 Nicholson Hall for an appointment with the chairman of the committee.

Admission to University College is based on a student's previous record and the program he proposes to complete. The program may contain courses in any college or school of the University but must show definite evidence of contributing to the objectives of the student and be deemed worthy of a degree by faculty members consulted by the student and by the chairman of the committee. The *University College Bulletin* provides full information about the program.

The degree of bachelor of arts or bachelor of science is granted by this unit of the University.

Extension Division—see p. 13.

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 per-

sonal 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 Arts College as a freshman or sophomore, a special 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, 214, or 220 Johnston Hall, 16 Walter Library or 208 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, music, nursing, occupational therapy, and physical therapy.
If you have had previous college work, you will be assigned to a faculty adviser chosen on the basis of your major. You will receive a card in the mail with his name.
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. His name will be sent to you by mail soon after.
3. When you are a third-quarter sophomore and almost ready to enter the Upper Division or a professional school, you should seek counsel from the appropriate Upper Division office or the 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.

Approximately 600 faculty members participate in the Arts College advisory program. Of these, about 120 Upper Division advisers of major students are listed under appropriate departmental headings in Section II of this bulletin. Names of advisers are printed in italics in the faculty listing in Section IV. Note that because this is a 2-year bulletin the list cannot be kept completely current. It is always wise for a student to check with the appropriate department for a list of advisers. The remaining advisers, for Lower Division students, are assigned to advisees on a basis of major interest or student preference. To find the offices of these advisers, see the *Staff Directory* or inquire at the appropriate college or departmental office.

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 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).

This committee is a group of administrative officers 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 coun-

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selors available for consultation often can help work out adjustments. A representative of the Scholastic Committee is available in every Arts College divisional office (see p. 21 for comments on how to petition the committee).

Conduct Committee—The Committee on Student Scholastic Conduct, composed 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.

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 students' major departments and by the College Placement Service, 125 Johnston Hall, directed by Assistant Professor Maxwell E. Alvord. 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):

Financial Help: Bureau of Student Loans and Scholarships, 107 Armory

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

Health Problems: University Health Service Building

Housing: Student Housing Bureau, 209 Eddy Hall; for married students, 180 Westbrook Hall

Legal Problems: Legal Aid Clinic, 214 TNM

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

Personal Problems: Student Counseling Bureau, 101 Eddy Hall

Religious Activities: Religious Activities Coordinator, 211 Eddy Hall

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

Veteran's Benefits: 105 Morrill Hall

Vocational Choice: Student Counseling Bureau, 101 Eddy Hall

Work-Study Jobs: Work-Study Program, 100 Shops Building

Section II

COURSE OFFERINGS AND MAJOR REQUIREMENTS

Explanations of Course Abbreviations and Symbols (see inside front cover)

● Lower Division and Upper Division Courses—

Course numbers

1 through 49	Lower Division courses Primarily for freshmen and sophomores
50 or above	Upper Division courses Primarily for juniors and seniors
50-99	Open to juniors and seniors Also open to sophomores with C averages or better in prerequisites and in all work (unless otherwise indicated)
100-199	Open to juniors, seniors, graduates (unless otherwise indicated) Also open to 3rd-qr sophomores by special permission of Scholastic Committee (usually granted if student has at least C average in prereqs and in all work, provided requirements completed for entering Upper Division or a professional school). Students should channel requests through appropriate Lower Division office.
200 and above	Generally not open to undergraduates (see <i>Graduate School Bulletin</i> for these listings).

Note 1: When a course is offered at both levels, i.e., 1-49 and 50-99, a student should take the level appropriate to his class standing.

Note 2: If nothing appears at the beginning of a list of Upper Division courses in each departmental section to indicate availability, Upper Division courses are not open to Lower Division students. Interested students, however, may wish to consult with the department concerned.

Note 3: For more extensive descriptions of freshman-sophomore courses see *Description of Lower Division Courses*, which is available in offices of advisers and Arts College, Walter and Johnston libraries, and most dormitories.

Accounting/see Business Administration

Aerospace Studies (Air)/Air Force ROTC

Air Force ROTC is a 2-year academic program preceded by a 6-week field training course at an Air Force base. All regularly enrolled male students who can meet the mental, physical, moral, and other requirements may apply for admission.

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The AFROTC program is designed to qualify for commissioning those college men who desire to serve in the United States Air Force. The program permits students with 2 years of college remaining, to participate in this on-campus officer-education program and, upon graduation, to be commissioned in the United States Air Force.

The program presents a high-quality, accredited, educational experience, designed to provide a professional background to future career Air Force officers. The cadet will not specialize in any one military career field, but will be provided an educational background that will develop skills and attitudes vital to the career professional Air Force officer. Upon graduation he will be given the Air Force specialty classification that corresponds to his academic major and he will be assigned to duties commensurate with his college education.

Students who can meet the AFROTC requirements and are accepted in the program receive retainer pay of at least \$50 a month plus all AFROTC textbooks and uniforms free of charge. The uniform is an Air Force officer's uniform. It becomes the cadet's property upon graduation and commissioning. Qualified cadets, who elect to be pilot trainees upon commissioning, will be given flight training at University flight facilities near the campus. Cadets may participate in a base visitation program of flights to Air Force bases throughout the United States.

For further information see the *Army-Navy-Air Force ROTC Bulletin*.

UPPER DIVISION COURSES

Upper Division courses are open to juniors and above.

Growth and Development of Aerospace Power/Aerospace Studies 300

131f Development of Air Power (AS 301)

3 cr; prereq Δ ; Suttie, Lawler

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 development of communication skill. Field trips.

132w Aerospace Today (AS 302)

3 cr; prereq Δ ; Suttie, Lawler

Analysis of mission and organization of Defense Establishment; aerospace concepts, doctrine, and use in relation to a nation's resources. Importance of United States space

program. Seminars developing individual skills in research and oral reporting. Field trips to selected Air Force bases.

133s Astronautics and Space Operations (AS 303)

3 cr; prereq Δ ; Suttie, Lawler

Intensive examination of space vehicle systems and ground support equipments; space exploration; orbits and trajectories; spatial environment, and future development of astronautics and space operations. Seminars stressing research skills and communication techniques. Field trips to aerospace industries.

The Professional Officer/Aerospace Studies 400

141f Leadership (AS 401)

3 cr; prereq Δ ; Gill, Martinson

Meaning of professionalism, foundations of military professionalism and its ethical characteristics and responsibilities, meaning and functions of human relations. Case studies in military discipline and cases in military law. Field trips.

142w Leadership (AS 402)

3 cr; prereq Δ ; Gill, Martinson

Philosophy and scope of leadership. Interaction of individuals and groups in large-scale organizations. Role playing, conference and discussion methods, communication and problem solving. Field trips.

143s Military Executive Management (AS 403)

3 cr; prereq Δ; Gill, Martinson

Includes functions of military executive: planning, organizing, directing, coordinating, and controlling. Surveys application of management functions to the organization. Explores determining management tools, practices, controls, and techniques to assure successful mission achievement. Field trips.

144f,w,s Flight Instruction Program (AS 404)

3 cr; prereq Δ; Gill, University Flight Facilities staff

Ground school in conjunction with flight training of 36:30 hours leading to FAA certification as 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. Field trips.

American Studies (AmSt)

● Major Sequence in Arts College—

Prerequisite:

Hum 21, 22, 23 or 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).

Requirements:

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
- B. 9 cr in AmSt 90-91-92

Special Provision for Nonmajors—Although 9 cr in the humanities courses listed below are prerequisite for a major program in American studies, there is no such fixed prerequisite for the American Studies Proseminar. Seniors who have a basic knowledge of such fields as American history and literature to build on, may enroll in AmSt 90-91-92 on consultation with the instructor.

LOWER DIVISION COURSES

Hum 21f, 22w, 23s** American Life

3,3,3 cr; Hage, Turpie

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.

** A student may take any combination of Hum 21,22,23, 71,72,73 up to a maximum of 9 cr. Upper Division students are urged to take the Hum 71,72,73 sequence if possible.

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UPPER DIVISION COURSES

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

Hum 71f, 72w, 73s Humanities in United States**

3,3,3 cr; Cooperman, Hage

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. Such figures as Jefferson, Hamilton, Thoreau, Mark Twain,

Frank Lloyd Wright, and William Faulkner are studied.

90f-91w-92s Proseminar: American Studies

3-3-3 cr; prereq sr and #; Griffin

Proseminar and individual conferences. Each quarter organized around problem presented by some representative theme, figure, or period (for example, the city and American thought, Frank Lloyd Wright, 1920's). Variety of subjects offered from year to year.

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.

Anatomy (Anat)/College of Medical Sciences

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

Students in the Arts College may elect courses in human anatomy other than Anat 3 or 4 only by arrangement with the head of the Department of Anatomy and the Arts College Scholastic Committee.

LOWER DIVISION COURSES

3f Elementary Anatomy

4 cr; prereq 3-yr nurses in Extension Division, dental hygienists; mortuary science students; others take Anat 4 unless granted Δ

4s Elementary Anatomy

5 cr; primarily for 4-yr nurses and medical technicians; prereq Biol 2A

Anthropology (Anth)

● Major Sequence in Arts College—

Prerequisites:

Anth 1A and 2A or 100 and 101

Requirements:

A. Anth 80, 90, 164, 173 (or 170 and 171), and 85

** A student may take any combination of Hum 21, 22, 23, 71, 72, 73 up to a maximum of 9 cr. Upper Division students are urged to take the Hum 71, 72, 73 sequence if possible.

- B. Minimum of 6 additional cr in Ethnology (Group I), 3 cr of which must be in Old World Ethnology (i.e., courses numbered 120 to 129)
- C. Minimum of 3 additional cr in Cultural Anthropology (Group III)
- D. Six additional elective credits to make a minimum of 30 cr of Upper Division courses in anthropology

(Anth 100 and 101 cannot be counted toward credit for a major.)

Students planning to take graduate work in anthropology should immediately consult with Professor R. F. Spencer 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 (1A, 2A) are recommended for general educational background.

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

LOWER DIVISION COURSES

1A1,s Introduction to Anthropology: Pre-historic Man and Culture

5 cr; Adams, Johnson, Hoebel, Murrill
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.

Varieties and range of 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 deeper and broader understanding of human capacities and purposes.

2A,w,s Introduction to Anthropology: Cultural Anthropology

5 cr; Hoebel, Spencer, Pelto, Gerlach

42 Introduction to World Ethnography

4 cr; prereq 2A; Spencer, Bender
Survey of major tribal and folk cultures of world.

UPPER DIVISION COURSES

Anth 80, 85, and 90 are open to sophomores who have a grade of at least C in Anth 2A. Other Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

95H Honors Seminar

3 cr; prereq admission to anthropology honors program or 4; Adams
Problems of theory and method in various branches of anthropology.

100 Principles of Cultural Anthropology

3 cr, §2A; may be taken in lieu of 2A; Gerlach, Miller
Intensive introduction to elements of cultural anthropology. Analysis of range and variability of human behavior. Principles of cultural dynamics.

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.

101 Principles of Biocultural Evolution

3 cr, §1A; may be taken in lieu of 1A; Adams, Johnson, Murrill
Intensive survey; human biological and cultural origins and evolution. Emphasis is on interpretation of paleontological and archaeological record.

34 / Course Offerings and Major Requirements

190-191-192 Directed Research

Cr ar; prereq sr, Δ

193-194-195 Topics in Anthropology

Cr ar; offered by visiting professors when available; whenever offered, topic will be listed in *Class Schedule* and prerequisites stated at that time

Special courses in all branches of anthropology.

196 Proseminar: East and South Asia (same as Geog 196, Pol 196, Ortl 196, and Hist 196)

3 cr; prereq sr

Integrating course for students majoring in East and South Asia Area Studies program.

Attention of students is called to Ortl 75, 76, 77, *Asian Civilizations* (see *East and South Asian Languages*).

Group I—Ethnology

80 Indians of North America

3 cr; prereq 2A or 100; Johnson, Spencer

Survey; aboriginal cultures of North America. Effects of culture contact. Contemporary problems of Indian reservations and communities.

110 Indian Culture Sphere

3 cr; prereq 2A or 100 or Δ ; Spencer

Survey of tribes, caste society, and culture history of South Asia. Cultural influences from India in Southeast Asia.

111 Modern India: The Village Community

3 cr; prereq 2A or 100 or Δ ; Rowe

Examination of socio-cultural process in contemporary Indian village; emphasis on impact of selected technological and social change upon the individual, caste, and community.

112 Modern India: Towns and Cities

3 cr; prereq 2A or 100 or Δ ; Rowe

Development of Indian towns and cities from anthropological perspective; emphasis on social and cultural processes of urban life, city growth, and urban migration.

115 Indians of the Great Plains

3 cr; prereq 2A or 100 or Δ ; Hoebel

Prehistoric origins of tribes. Cultures of Missouri River tribes and nomads of the Plains.

117 Indians of South America

3 cr; prereq 2A or 100; Hermitte

Ethnographic survey. Prehistory of various areas. Spanish and Portuguese contact and

adjustment of various tribes to modern conditions.

119 Peoples and Cultures of Middle America

3 cr; prereq 2A or 100; waived for majors in Latin-American Area Studies; Adams, Hermitte

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.

120 Peoples and Cultures of Africa

3 cr; prereq 2A or 100; Gerlach, Bender

Survey: races, languages, and cultures of Africa, south of Sahara. Peoples representative of each culture area studied with special attention to social organization, economic and political systems, and adjustment to modern conditions.

121, 122, 123 Ethnology of Oceania

3,3,3 cr; prereq 2A or 100; Kiste, Ogan

Survey of South Pacific race, language, prehistory and culture. Emphasis on comparative ethnology of Polynesia (121), Micronesia (122) and Melanesia (123). Impact of western culture on island societies; significance of oceanic ethnology to anthropological theory.

124 Culture and Society in China and Japan

3 cr; prereq 2A or 100 or Δ ; 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.

126 Peoples and Cultures of Southeast Asia and Indonesia

3 cr; prereq 2A or 100 or Δ ; 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.

127 Islamic Culture Sphere

3 cr; prereq 2A or 100 or Δ ; Gerlach
Mohammed and founding of Islam. Development and spread of Islamic religion, law, government, and other institutions in Middle East, Africa, and Asia. Culture and society in contemporary Middle East.

Group II—Archaeology

90 Archaeology of North America

3 cr; prereq 1A or 101; Adams, Johnson
Survey of prehistoric archaeology of North America north of Mexico. Emphasis on analysis of techniques, methods, and goals of prehistoric archaeology.

130 Method and Theory of American Archaeology

3 cr; prereq 90; Adams, Johnson
Examination of field methods, systems of data recording, analytical methods, and their conceptual bases. Abstract theory is closely integrated with specific case material. Some laboratory exercises in application of artifact analysis.

134 Archaeology of Middle America

3 cr; prereq 90; Adams
Developmental stage survey of major features of prehistoric cultures of Mexico and Central America.

135 Archaeology of South America

3 cr; prereq 90; Adams
Developmental stage survey of major features of prehistoric cultures of South America. All major ecological zones will be covered.

136 Paleolithic and Mesolithic Archaeology of Old World

3 cr; prereq 90; Johnson
Survey of archaeological record of human cultural origins and developments in Pleistocene and early recent periods in Africa, Europe, and Asia.

137 Old World Prehistory: Europe, Near East, and Africa

3 cr; prereq 90; Adams
Recent period prehistory stressing origins, development, and dispersion of systems of food production; origins of urbanism.

138 Old World Prehistory: East and South Asia

3 cr; prereq 90; Johnson
Origins and developments of major Asian cultural traditions.

140su Field Research in Archaeology

6-12 cr; may be taken for cr only once; prereq 90 and Δ ; 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 III—Cultural Anthropology

68 Religion and Culture

3 cr; prereq 2A or 100; no cr for majors; Kiste
Introduction to comparative study of religion in its cultural context.

150 Cultural Change and Development

3 cr; prereq 2A or 100; Miller, Kiste
Processes of cultural change; invention, diffusion, and acculturation. Effects of colonialism, urbanization, and modernization. Analysis of developing societies.

151 Applied Anthropology

3 cr; prereq sr, 150 or Δ ; offered when feasible; Gerlach, Kiste
Application of methods and techniques 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.

154 Ethnological Field Techniques

3 cr; prereq sr, grad, Δ ; Miller, Peltó
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.

160 Anthropology of Law

3 cr; prereq 2A or 100; 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.

161 Anthropology of Religion

3 cr, \$68; prereq 2A or 100 and 6 UD anthropology cr or Δ ; Spencer, Kiste
Varieties and range of religious beliefs and practices. Relation of religion to other aspects of culture.

162 Comparative Technology

3 cr; prereq 2A or 100; offered when feasible; Adams, Peltó
Analysis of inventions men have developed in adapting to varied environments of world. 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.

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163 Economic Anthropology

3 cr; prereq 2A or 100; waived for majors in economics and business administration; Gerlach

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. Social and cultural aspects of economic development.

164 Social Anthropology

3 cr; prereq 2A or 100; Pelto, Ogan

Structure of nonliterate and folk societies; systems of kinship and marriage and their relationship to economic, religious, and political institutions; functional and structural approaches in cultural anthropology.

165f,w,s Culture and Personality

3 cr; prereq sr, 2A or 100 or Δ ; waived for majors in public health, nursing, psychology, sociology, and social work; Hoebel, Pelto, Spencer

Role of culture in formation of personality. Problems of individual adjustments to demands of culture. Psychological approach to culture.

166 Primitive Art

3 cr; prereq 2A or 100 or Δ ; waived for art majors

Technique, style, and symbolism. Art and artist in relation to primitive culture and society.

169 Comprehensive Survey

3 cr; prereq sr, Δ ; Gerlach

Integrated review of major anthropological concepts, methodologies, and theories.

Group IV—Physical Anthropology

170 Primate and Human Evolution

3 cr; prereq 1A, 101, or Δ ; Murrill

Origins and relationships of extinct forms of nonhuman primates and man.

171 Human Races

3 cr; prereq 170 or Δ

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

172 Basic Principles of Blood Genetics (same as LMed 172)

3 cr; prereq 1A, 101, or Δ ; Yunis

History of blood groups; blood groups and human genetics, ABO, MNS, P, Rh, Lutheran, Kell, Lewis, Duffy, Kidd, Diego, hapto-globines, transferrines, gammaglobulines,

Gc system, hemoglobins; blood groups and disease; blood groups and linkage.

173 Human Biology

3 cr; prereq 1A, 101, or Δ ; Murrill

Evolutionary processes in differential development of races. Physical characteristics, distribution, and relationships of living races of mankind. Human genetics, particularly of blood types in racial analysis. Influence of various environments on man.

175 Human Physical Growth and Development

3 cr; prereq 1A, 101, or \S ; 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.

176 Growth and Development in Adolescents

3 cr; prereq 175 or \S

Physical growth at adolescence, sex differences in physique, concept of physiological changes, endocrinology of adolescence, changes in mentality and behavior at adolescence.

177-178-179 Physical Anthropology

4-4-4 cr; prereq 1A or 101; 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 skeleton. Anthropometry—measurement of the living. Body size, proportions, and statistical analysis. Age, sex, and racial differences in body composition. Anthropometrical, roentgenographic, biophysical and biochemical estimations of body compartments.

Group V—Linguistics

85 Language and Culture

3 cr; prereq 2A or 100 or Δ ; Spencer, Saries

Relation of language to behavior; languages as systems of thought, logic, and orientation and their impacts on cultures. Semantics and symbols in linguistic structures across world; analysis of selected linguistic and cultural systems. Glottochronology.

180-181† Method and Theory in Anthropological Linguistics

3-3† cr; prereq 2A or 100, and 184, plus 173, or any other course in sequence numbered 180

180: Linguistic theory and practice as tool in anthropological fieldwork; analysis of

phonological, morphological, and syntactic problems in world languages.

181: 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.

182 Field Methods in Anthropological Linguistics

3 cr; prereq 181

Problems in phonologic, morphophonologic, morphologic, and syntactic structures of one or two languages outside Indo-European speech family.

186 Dynamics of Human Communication

3 cr; prereq 181 or equiv; Sarles

Introduction to principles and concepts of kinesics: dynamic study of human communication.

Arabic/see Middle Eastern Languages

Architecture and Landscape Architecture/ Institute of Technology

Architecture (Arch)

- Major Sequence in Arts College—Arch 51-52-53, 81-82-83, 91-92-93.

Prerequisites:

A. Phys 1-2-3 and 1A-2A-3A

B. Math 15, 42-43

C. ArtS 23A-24A-25A

D. Approval by School of Architecture after formal application has been made

Obtain application forms at the School of Architecture or the Office of Admissions and Records. Forms must be submitted not later than June 1 preceding the beginning of the academic year for which admission is sought. Admission to beginning architectural design (Arch 81) is permitted only in the fall quarter.

Approval of admission will be based on a consideration of (a) the student's scholastic standing in high school and on previous college work, (b) his maturity and experience, (c) his professional aptitude and objectives, and (d) the workspace and instructional facilities of the School of Architecture. Prospective students are urged to consult advisers in the School of Architecture, 110 Architecture Building.

This sequence is intended for:

1. Students preparing for future careers in architecture, urban design, landscape architecture, and interior or industrial design.
2. Students who want a certain degree of specialization for cultural or vocational reasons.

A special modification of this sequence is available for students taking the 6-year combined course (see page 234) in architecture leading to both

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the liberal arts and professional architectural degrees, B.A. and B.Arch. Such students should include in addition to the course listed above, MM 92, 93 and ArtS 60A-61A-62A. Also desirable are CE 78-79-80 and Arch 71-72-73, although neither sequence carries credit toward the B.A. degree.

Note—See *Institute of Technology Bulletin* for specific course sequence leading to the B.Arch. degree.

LOWER DIVISION COURSES

21 Architectural Theory and History

3 cr; 3 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

51 Ancient Architecture

3 cr; prereq 21; 3 lect hrs per wk
History of architecture in ancient Mesopotamia, Egypt, Crete, Greece, and Rome through Augustan Age.

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 quarter only

52 Late Roman and Medieval Architecture

3 cr; prereq 21; 3 lect hrs per wk
History of architecture from time of Augustus through Romanesque period.

Basic exercises in composition of line, form, proportion, color, and texture. Elements of architectural design. Architectural drawing. Model making.

53 Gothic and Early Renaissance Architecture

3 cr; prereq 21; 3 lect hrs per wk
History of architecture from late 12th century through the 14th century.

91-92-93† Architectural Design

6-6-6† cr; prereq 83; 18 lab hrs per wk
Architectural problems; emphasis on development of structures as integral part of design; site planning.

54 Renaissance and Baroque Architecture

3 cr; prereq 21; 3 lect hrs per wk
History of architecture from time of Brunelleschi until French Revolution.

101-102-103 Tutorial Work in History of Architecture

2-2-2 cr; prereq 56 or ‡; 1 conf and 5 res hrs per wk

55 American Architecture and 19th Century

3 cr; prereq 21; 3 lect hrs per wk
History of pre-Columbian and colonial architecture in America and of European architecture through early 19th century. Research paper.

Reading and written reports on special historical problems.

56 Modern Architecture

3 cr; prereq 21; 3 lect hrs per wk
History of architecture in America and Europe from late 19th century until present time.

104 Seminar: European Architecture

3 cr; prereq 56 or ‡; 3 seminar hrs per wk
Contemporary architecture from beginning of modern movement until present time.

71-72-73 Building Technology

4-4-4 cr; prereq 2nd yr; 4 lect hrs per wk
Principles, techniques, materials, and equipment involved in building.

105 Seminar: Scandinavian Architecture

3 cr; prereq 56 or ‡; 3 seminar hrs per wk
Survey of Scandinavian architectural history; emphasis upon development of modern architecture in Denmark, Finland, Norway, and Sweden.

74-75-76 Building Technology

4-4-4 cr; prereq 73; 4 lect hrs per wk
Principles, techniques, materials, and equipment involved in building.

106 Seminar: American Architecture

3 cr; prereq 56 or ‡; 3 seminar hrs per wk
Contemporary architecture in United States from period of Henry Hobson Richardson until present time. Field trip.

111-112-113† Architectural Design

7-7-7† cr; two summers, or 800 hrs, or practical experience are prereq for enrollment in Arch 123; prereq 93 and MM 93; 21 lab hrs per wk

Advanced architectural problems of complex requirements, involving thorough study and detailed solution; electrical and mechanical equipment as well as structure as an integral part of design; research techniques. Individual effort and group collaboration.

115-116 Structure and Form in Architecture

3-3 cr; prereq MM 92; 2 lect and 3 lab hrs per wk

Structural materials and systems, and their application; particular emphasis on logical structure as a form generator.

117 Structure and Form in Architecture

3 cr; prereq MM 92, Arch 115 or 116, and #; 2 lect and 3 lab hrs per wk

Structural materials and systems, and their application; particular emphasis on logical structure as a form generator.

121-122† Architectural Design

9-9† cr; two summers, or 800 hrs, or practical experience are prereq for enrollment in Arch 123; prereq 113 and CE 41; 27 lab hrs per wk

Building design and development in urban context. Individual and collaborative effort; survey and analysis of urban problems, reporting and preparation of large-scale proposals.

123 Architectural Thesis

12 cr; prereq 122 and two summers, or 800 hrs, or practical experience; 36 lab hrs per wk

Individual choice, study, and solution of architectural problem to demonstrate proficiency in all phases of design.

126 Professional Relations

3 cr; prereq 4th yr; two 2-hr seminars per wk

Relations of architect to clients, contractors, and fellow practitioners; procedures of architectural practice.

131 Planning

3 cr; 3 lect hrs per wk

History and theory of planning.

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.

133 Planning

3 cr

Community facilities and housing.

134 Planning

3 cr; prereq 133 or #

Tutorial work in community facilities and housing.

150 Institutional Planning

2 cr; prereq 113 and #

151-152-153 Theory of Architecture

2-2-2 cr; prereq #

170 Cityscape

3 cr; prereq 93

City and its components as aesthetic elements.

171-172 Urban Form

3-3 cr; prereq 113 and 133

Principles and techniques involved in city design.

Landscape Architecture (LA)

● Major Sequence in Arts College—

Prerequisites:

Phys 1, 1A

Math 15, 42

Biol 1-2†

Geog 1

Geo 1

ArtH 1

ArtS 23A-24A-25A

Arch 21

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Requirements:

Arch 81-82-83†
LA 91-92-93
LA 62-63
LA 115

Goals and Concerns of the Profession—The problems of relating man and land, each with their complex needs, is the general focus of the professional design field of landscape architecture. Within this focus 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. This focus on quality does not merely imply a concern for the ornamental aspects of environment, but rather the total visual-functional inter-relationship of experiencing our exterior environment. 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 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.

The landscape architect focuses his efforts on the design of exterior use areas for a wide range of projects: land used for working, living, and recreation; commercial, institutional, and industrial development; transportation systems and multiple use areas in the regional landscape. His projects vary in scale from the single family environment to regional open space systems. In this regard the professional provides a wide range of design services which include land use feasibility studies, site selection studies, preliminary site layout proposals, detail grading, and construction drawings and planting plans.

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.

Objectives of the Curriculum—The course of study in general is designed to provide the student with a broad educational background together with technical studies essential for the professional practice of landscape architecture.

Technical studies include training in the applied land sciences: courses in geology, soils, climatology, ecology, civil engineering, and horticulture. Liberal arts studies in psychology, sociology, geography, and history allow the exploration of how man relates to his environment. Students in the program are stimulated to become critical observers in terms of the quality of experience in the exterior environment; to develop systematic problem solving techniques, and to develop techniques for portraying concepts with graphically clear communicative skill.

This training in general is aimed at providing the student with thought capacity, leadership ability, flexibility, and an understanding of the techniques and possibilities of his own profession and its relation to other disciplines. In this respect, the professional degree is excellent background for further studies in city and regional planning as well as landscape architecture.

Curriculum Alternatives—Three alternative curriculums are available for degree studies in landscape architecture. A 5-year technical degree given through the Institute of Technology, a 4-year nonprofessional degree given through the College of Liberal Arts, and a 6-year professional degree given through both colleges. Inquire at the School of Architecture office for information on both the 4-year nonprofessional and the 6-year professional degrees.

Admission Procedures—Upon completion of the prerequisite requirements, application shall be made to officially enter the School of Architecture. This should be done by completing form AR 110 available at the School of Architecture or from the Office of Admissions and Records. These should be submitted not later than June 1 of the year during which the student wishes to begin course work within the school. Admission to beginning design (Arch 81) is permitted only in the fall quarter. Prerequisite requirements are met by completing the first year of the 5-year degree program.

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 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 COURSE

21 Introduction to Landscape Architecture
3 cr (cr not allowed toward major degree); 3 lect hrs per wk
Analysis of design potential of landscape materials; exercises in critical assessment

of land developments and detail landscapes; exploration of role of landscape architect in shaping natural and cultural environment; brief historical review of site developments.

UPPER DIVISION COURSES

62-63 History and Theory 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.

Lectures, exercises, and projects: investigation of landscape construction materials; design of simple structures and soil retention devices; development of working drawings as extension of a design project; design for construction and maintenance efficiency; preparation of specifications and maintenance programs; landscape field practice in site surveys; calculating grading operations; site layout and supervision.

71-72-73 Landscape Technology I
4-4-4 cr; prereq CE 61A; 1 lect and 9 lab hrs per wk

Lectures, exercises, and projects: ground form manipulation, earthwork computation, and drainage techniques; technical potentials of slopes and soils; layout of circulation systems; climatic factors, watershed analysis, and landscape utility systems; exterior illumination criteria.

91-92-93 Landscape Architectural Design
6-6-6 cr; prereq Arch 83; 1 lect and 15 lab hrs per wk

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.

74-75-76 Landscape Technology II
4-4-4 cr; prereq 73; 1 lect and 9 lab hrs per wk

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111-112-113 Landscape Architectural Design

6-6-6 cr; prereq 93; 1 lect and 15 lab hrs per wk

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

115-116 Landscape Form and Structure

3-3 cr; prereq 91; 3 lect hrs per wk
Lectures, discussions, and exercises: 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.

121-122 Landscape Architectural Design

6-6 cr; prereq 113; 1 lect and 15 lab hrs per wk
Research, analysis, and design of large-scale land development problems. Urban design and regional design collaboratives

with fellow design professions and technical disciplines.

123 Thesis

12 cr; prereq terminal qtr; 36 lab hrs per wk

Definition of a landscape problem; research and analysis of design potentials; projection of solution to problem to demonstrate proficiency in all phases of landscape architecture. Problem area to be selected in consultation with instructor.

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.

126 Professional Relations

3 cr; prereq terminal yr
Professional ethics, responsibility and relations in business. Office management, preparation of professional communications, estimates, specifications, and contracts. Lectures, written exercises, and office visits.

Art History (ArtH)

The principal objective of the Department of Art History is to contribute to the student's general education. With this end in view, all courses in history stress the problems and needs of the student interested in acquiring some knowledge of the theory and practice of art within the framework of a liberal education.

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

Prerequisites:

- A. ArtH 1 or 6 cr from one of the following groups: 2, 3, 4, 5; 50, 56, 57, 58, 60
- B. One of the following: ArtS 20, ArtS 40

Requirements: total—30 cr

- A. 3 cr from each of following 5 groups (total 15 cr):
Oriental 110, 111, 112

- Classical 100, 101, 102
- Medieval 103, 104, 105
- Renaissance and baroque 106, 107, 108; 113, 114, 115; 116, 117, 118; 126, 127, 128
- 19th and 20th Century 136, 137, 138; 146, 147, 148; 155, 156, 157, 158; 176, 177, 178

B. ArtH 199

C. 12 cr from courses numbered above 100

● **Minor Sequence in Arts College**—Students intending to minor in art history under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

LOWER DIVISION COURSES

1f,w,s Principles of Art

5 cr, \$50; prereq fr and soph only; 2 recitation hrs

Lecture and laboratory: basic problems of art. Examples from painting, sculpture, and architecture illustrate cultural factors that influence art, problems of design, and technique. Discussion sessions introduce practical problems of visual arts.

2f Survey: History of Art

3 cr, \$56

Expression of Western civilization in architecture, sculpture, and painting; from pre-history including Egypt, Mesopotamia, Crete, Persia, Greece, and Rome.

3w Survey: History of Art

3 cr, \$57

Medieval architecture, sculpture, and painting, including early Christian, Byzantine, Romanesque, and Gothic periods.

4s Survey: History of Art

3 cr, \$58

From 15th to 18th century, including Renaissance, 16th century, baroque and rococo periods.

5 Survey: History of Art

3 cr, \$60

Modern architecture, sculpture and painting, 19th and 20th centuries.

47 Introduction to Far Eastern Art

3 cr; Poor

Selected major themes within broad context of Indian and Far Eastern art. Introduction to arts of Eastern world but not an inclusive historical survey.

UPPER DIVISION COURSES

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

50f,w,s Introduction to Visual Arts

3 cr, \$1

Similar to ArtH 1 in organization and basic content. Expanded program of reading and more extensive contact with works of art.

56f Survey: History of Art

3 cr, \$2

Similar to ArtH 2 in organization and basic content. Expanded program of reading and contact with works of art.

57w Survey: History of Art

3 cr, \$3

Similar to ArtH 3 in organization and basic content. Expanded program of reading and contact with works of art.

58s Survey: History of Art

3 cr, \$4

Similar to ArtH 4 in organization and content. Expanded program of reading and contact with works of art.

59su Summer Travel Course in European Art

6 cr; prereq #; about June 28 to August 12, approx 6 wks in Europe; may be taken as 159su; 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.

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60 Survey: History of Art

3 cr, §5

Similar to Arth 5 in organization and content. Expanded program of reading and contact with works of art.

86f-87w-88s 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.

100 Early Greek Art

3 cr; prereq 2, §; McNally, Tselos

Survey of Bronze Age; concentration on architecture, sculpture, and painting beginning with Iron Age and continuing to classical period.

101 Later Greek Art

3 cr; prereq 2, §; McNally, Tselos

Architecture, sculpture, and painting of Greece in classical and Hellenistic periods.

102 Roman Art

3 cr; prereq 2, §; McNally, Tselos

Architecture, sculpture, painting, and minor arts of Roman Republic and Empire.

103f Medieval Art

3 cr; prereq sr, grad or §; Sheppard, Tselos

Early Christian and Byzantine architecture, sculpture, painting, and selected minor arts; including Russia and other Orthodox Christian countries to fall of Constantinople in 1453.

104w Medieval Art

3 cr; prereq sr, grad or §; Sheppard, Tselos

Survey of architecture, sculpture, painting, and selected minor arts of western Europe from Dark Ages to Romanesque period.

105 Medieval Art

3 cr; prereq sr, grad or §; Sheppard, Tselos

Gothic architecture, sculpture, and painting from 12th to 14th centuries.

106 Italian Art of 14th Century

3 cr; prereq sr, grad or §; Canedy

Survey of painting from primitives through International Style, including painting after Black Death. Special emphasis on Giotto, Duccio, the Lorenzetti and Simone Martini.

107 Early 15th-Century Art in Italy and Northern Europe

3 cr; prereq sr, grad or §; Canedy

Early Italian Renaissance architecture, sculpture, and painting. Emphasis on Bru-

nelleschi, Ghiberti, Donatello and Masaccio. Early Netherlandish painting: Robert Campin, Jan van Eyck, and Rogier van der Weyden.

108 Late 15th Century Art in Italy and Northern Europe

3 cr; prereq sr, grad or §; Canedy

Survey of painting, sculpture, and architecture in central and northern Italy. Emphasis on painting including Piero della Francesca, Botticelli, Ghirlandaio, Mantegna, Antonello da Messina, and Giovanni Bellini. North European painting including Hugo van der Goes and Bosch.

110 Art of India

3 cr; Poor

Development of architecture, painting, sculpture, and minor arts.

111 Art of China

3 cr; Poor

Development of painting, sculpture, and minor arts from earliest times to present.

112 Art of Japan

3 cr; Poor

Development of painting, sculpture, and minor arts from earliest times to present.

113 High Renaissance Painting in Italy and Northern Europe

3 cr; prereq sr, grad or §; Canedy

Leonardo, Raphael, Michelangelo, Giorgione, and Titian. Grünewald, Holbein, and Dürer.

114 Sixteenth-Century Sculpture and Architecture

3 cr; prereq sr, grad or §; Canedy

High Renaissance, mannerism, and other trends in Italy and northern Europe.

115 Later 16th-Century Painting

3 cr; prereq sr, grad or §; Canedy

Mannerism and other trends in Italy and northern Europe.

116 Baroque Art in Italy and Spain

3 cr; prereq sr, grad or §; Thomas

Early baroque painting. Bernini and high baroque fusion of architecture, sculpture, and painting. Classical tendencies in later 17th-century Roman art. Architecture, sculpture, and painting in Naples, Bologna: Venice and Piedmont region. Baroque painting in Spain: El Greco, Valesquez, Zurbaran, Murillo.

117 Baroque Art in France and England

3 cr; prereq sr, grad or §; Thomas

Classicizing baroque art in France: Louis XIV, Versailles, and academic art. Baroque in French provinces. New tendencies in later 17th century. Late Renaissance and baroque architecture in England: Inigo Jones and Palladianism; Vanbrugh, Wren and high baroque. English portrait.

118 Baroque Art in Flanders and Holland
3 cr; prereq sr, grad or #; Thomas

Architecture, sculpture, and painting. Rubens; Van Dyck; Flemish genre painting. Dutch baroque painting: Hals, Vermeer, De Hooch, Ruisdael, Cuypp, and minor specialists. Rembrandt and his school.

125 Venetian Painting, 1400-1800
3 cr; prereq #; Thomas

Painting in the Veneto from late Gothic through the Renaissance and baroque periods to the rococo including such artists as Vivarini, the Bellini, Titian, Tintoretto and Tiepolo.

126 Eighteenth-Century Art in Italy
3 cr; prereq sr, grad or #; Thomas

Late baroque and classicizing trends in architecture. Neoclassic architecture. Roman, Neapolitan, and north Italian sculpture. Canova. Painting in Rome, Naples, Bologna, Genoa, and Venice. Prints.

127 Eighteenth-Century Art in France
3 cr; prereq sr, grad or #; Thomas

Urban architecture; the town house. Provincial centers. Neoclassic architecture. Rococo and neoclassic sculpture. French painting: Watteau, Boucher, Fragonard, Chardin, David; lesser masters. Prints.

128 Eighteenth-Century Art in Germany and Austria
3 cr; prereq sr, grad or #; Thomas

Late baroque architecture in Austria: rococo art in Bavaria, Franconia, and Prussia. Rococo sculpture and painting. Rococo decorative arts. Beginning neoclassic trends.

129 History of Graphic Arts

3 cr; prereq sr, grad or #; Thomas
Renaissance and baroque master etchers and engravers. Mantegna, Raimondi, Schongauer, Dürer, Holbein, Lucas van Leyden, Callot, Rembrandt. Reproductive and portrait engraving of 17th and 18th centuries. Printmaking in 20th century.

130 Master Drawings

3 cr; prereq sr, grad, or #; Thomas
Historical survey of great drawings from Gothic period to present; covers work of such artists as Pisanello, Leonardo da Vinci, Dürer, Holbein, Raphael, Rembrandt, Rubens, Watteau, Tiepolo, Goya, Géricault, Daumier, Van Gogh, Matisse, Picasso.

136 Art in United States

3 cr; prereq sr, grad or #; Torbert, Tselos
Painting and sculpture from origins to mid-19th century. Copley, Stuart, West. Rise of landscape painting. Analysis of means of expression common to visual arts.

137 Art in United States

3 cr; prereq sr, grad or #; Torbert, Tselos
Romanticism and realistic genre in painting and sculpture. Homer, Eakins, Ryder, and their influence. Impressionism; relations with Europe after Civil War.

138 Art in United States

3 cr; prereq sr, grad or #; Torbert, Tselos
Contemporary movement in painting and sculpture. Armory Show, development of modern realism, expressionism, and abstractionism.

139 Decorative Arts in England: 1700-1900

3 cr; prereq Upper Division or grad only; Waldfogel
Major furniture styles in England from rococo to *art nouveau*. Some considerations given to porcelain, silver, and other decorative arts.

140 Scandinavian Architecture

3 cr; prereq sr, grad or #; Nelson
Development of native tradition in architecture from medieval stave churches, through folk architecture, to modern style. Contributions of important architectural monuments.

141 Scandinavian Painting

3 cr; prereq sr, grad or #; Nelson
Three areas of concentration: medieval wall and panel painting; folk painting and tapestry weaving; easel and mural painting from 17th century to present day.

142 Scandinavian Sculpture and Minor Arts

3 cr; prereq sr, grad or #; Nelson
Emphasis in sculpture on medieval, neoclassic, and modern periods. Emphasis in minor arts, primarily on development of contemporary Scandinavian design.

143 Pre-Christian Art of Northern Europe

3 cr; prereq sr, grad or #; Nelson
Art north of Alps—from neolithic ceramics and stone carving through art of Viking Age. Includes Bronze Age, Celtic, and migration metal work. Concentration on Scandinavia.

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.

147 Modern American and European Architecture

3 cr; prereq sr, grad or #; Torbert, Tselos

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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.

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.

155 English Painting from 1750 to 1850

3 cr; prereq sr, grad or #; Tselos, Wald-fogel

Landscape painting from topographers to Turner. Other artists and movements. Blake and Fuseli, Haydon, Ety, pre-Raphaelites and Victorian narrative painters.

156 Nineteenth-Century French Painting, Romanticism and Realism, 1800-1860

3 cr; prereq sr, grad or #; Tselos, Wald-fogel

David and his followers; romantic figure style culminating in Delacroix; Corot, and the Barbizon landscape painters; resurgence of neoclassicism in 1840's; Courbet and his influence.

157 Nineteenth-Century French Painting, Impressionism and Post-Impressionism, 1860-1900

3 cr; prereq sr, grad or #; Tselos, Wald-fogel

Realism of Manet and Degas, impressionist idea and its evolution, multiple styles of postimpressionists, aestheticism, symbolism, and mysticism of 1890's.

158 Nineteenth-Century German Painting

3 cr; prereq sr, grad or #; Tselos, Wald-fogel

Romantic landscape, the Nazarenes, Biedermeier, Menzel and Leibl. Eclecticism of 1870's and 1880's, realism and impressionism at end of century.

161 Roman Archaeology

3 cr, §Clas 161; McNally

Methods of gathering and interpreting archaeological data: survey of major technologies and artistic media of Romans, and consideration of selected sites.

165 Early Chinese Art

3 cr; prereq 111 or #; Poor

Development of ancient ceramics and ritual bronzes, early Buddhist sculpture and early Chinese painting.

166 Chinese Painting

3 cr; prereq 111 or #; Poor

Survey: major works from 4th to 17th centuries. Primary emphasis: development of landscape tradition and literary genre of later Chinese painting.

167 Japanese Painting

3 cr; prereq 112 or #; Poor

Survey: Japanese pictorial arts from earliest to modern times. Focus on those works that best exemplify development of indigenous traditions.

168 Modern Sculpture from Houdon to Maillol: 1775-1940

3 cr; prereq sr, grad, or #; Torbert, Tselos

Academic-realistic trend in 18th century neoclassical, romantic, realistic, impressionistic, and expressionistic movements of 19th and 20th centuries—highlighted by work of Houdon, Canova, Rude, Carpeaux, Dalou, Rodin, Beardselle, Maillol, Barlach, Lehm-bruch, etc.

169 Modern Sculpture from Brancusi to Stankiewicz

3 cr; prereq sr, grad, or #; Torbert, Tselos

Academic trend in late 18th century, classical revival, romantic, realistic, impressionist, and expressionistic movements of 19th century—highlighted by work of Houdon, Canova, Rude, Carpeaux, Dalou, and Rodin—to beginning of 20th century.

171 Greek Painting

3 cr; prereq sr, grad or #; offered alt yrs; McNally

Place of painting in Greek art; particular emphasis on development of figure style.

173, 174, 175 Proseminar: Problems in Art History

3,3,3 cr; prereq #

176 Twentieth-Century Painting

3 cr; prereq sr, grad or #; Simon, Tselos
Art nouveau, Fauvism, cubism, futurism, Orphism. Matisse, Picasso, Braque, Gris, Léger, Boccioni, Rousseau, de Chirico, Duchamp.

177 Twentieth-Century Painting

3 cr; prereq sr, grad or #; Simon, Tselos
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.

178 Twentieth-Century Painting

3 cr; prereq sr, grad or #; Simon, Tselos
Surrealism, abstract expressionism, hard edge, new realism, and pop art; Ernst, Dali, Miro, Hofmann, de Kooning, Pollock, de Stael, Dubuffet, Johns, Buschenberg.

186-187-188 Art of the Film

3-3-3 cr, 187 §87, 188 §88; not applicable to grad major or minor in art history

Aesthetics of film medium. Evaluation and analysis of motion picture as an art form. Discussions of editing, montage, sound, and use of camera, etc. Illustrated with feature-length films and short subjects.

189 Art of Late Antique Period

3 cr; prereq 102 or §; McNally

Architecture, sculpture, and painting of 3rd, 4th, and 5th centuries.

196-197-198 Readings in Art History and Criticism

3-3-3 cr; prereq sr, §

199 Methodology of History of Art

3 cr; prereq art history major or grad, §
Analysis of types of art history and tools of research, of bibliography, style, and iconography; methodology of teaching and teaching materials.

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.

In addition to our commitment to the general student we offer training on a more intensive basis to the professionally oriented student in the visual arts.

The programs lead to the following degrees: B.A., B.F.A. (see p. 16), and M.F.A.

● **Major Sequence in Arts College—**

Prerequisites:

- A. Three of following courses: ArtH 2, 3, 4 or 47 or ArtS 20 or 40
- B. 9 cr from following: ArtS 10, 23, 24, 32, 41, 45

Requirements:

- A. 27 cr in studio courses numbered 50 or above
- B. 6 Upper Division cr in Art History.

● **Minor Sequence in Arts College—**Students wishing to minor in Studio Arts should note that Upper Division sequences in studio work sometimes have one or more prerequisites at the Lower Division level, and are invited to consult one of the departmental advisers.

LOWER DIVISION COURSES

10f,w,s Photography

3 cr; Downs, Liebling, Wilcox

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.

10 or practical experience and §; Downs, Liebling, Wilcox

Develops personal photographic perception in student through lectures on photographic history and contemporary trends in photography. Intensive field work.

11f,w,s 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

20 Basic Drawings

3 cr

Introduction to studio work; exploration of contemporary and traditional methods. Work from nature, various drawing mediums.

48 / Course Offerings and Major Requirements

23 Drawing and Painting

3 cr; prereq 20

Work from life and nature; introduction to color and pictorial structure.

23Af-24Aw-25As Drawing and Painting I

2-2-2 cr; for architects only

24 Materials and Techniques

3 cr; prereq 20

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.

25 Drawing and Color

3 cr; prereq 23

Continuing and elaborating upon drawing experiences of 23; serves as bridge between Lower Division drawing courses and Upper Division painting, printmaking, and other courses where color is used.

26s Calligraphy

3 cr; prereq 23

Studies in Roman and cursive script. Exercises in fundamental skills of lettering, experience with pen and brush. Aspects of composition and page layouts.

32f,w,s Elements of Printmaking

3 cr; prereq 20; 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.

33f,w,s Printmaking

3 cr; prereq 32; Bethke

Introduction to various techniques of etching and engraving employed in working on metal plates. Woodcuts and lithography; lectures and demonstrations.

34-35-36 Lithography

3-3-3 cr; prereq 20 or #; Priede

Introduction to methods of lithography-planography.

40 Basic Sculpture

3 cr; Nash, Daly, Kraning

Beginning course. Intensive study of structure with emphasis on form and space. Construction in metal and plaster.

41 Basic Sculpture I

3 cr; prereq 40; Nash, Daly

Integrates basic principles examined in 40. Natural form studied for sculptural concepts. Imaginative approach to form is encouraged.

42 Basic Sculpture I

3 cr; prereq 41; Kraning

Clay modeling from life, and beginning casting techniques.

45f,w,s Ceramic Processes

3 cr; MacKenzie

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.

53-54-55 Drawing

3-3-3 cr; prereq 23; Busa

From model, still life, and nature. Principles of anatomy.

56f-57w-58s Drawing and Design

3-3-3 cr; not open to studio arts majors; 2 studio and 1 lect per wk

Studio work in varied media; lectures and discussions on theory and practice of contemporary art.

60A-61A-62Af,w,s Drawing and Painting II

2-2-2 cr; for architects; prereq 25A

60B-61B-62Bf,w,s Water Color

3-3-3 cr; prereq 20 or equiv, with #; Myers

Introduction to transparent water color; gouache, casein, and tempera. General

to sophomores under conditions ex-

course introducing student to various drawing and painting mediums. Figure, still life, landscape, and abstract design.

65 Commercial Design

3 cr; prereq 20; 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.

66f-67w-68s Introduction to Art of Film Making

3-3-3 cr; prereq 10

Lectures and practical aspects of making films.

70-71-72f,w,s Oil Painting

3-3-3 cr; prereq 25 and 55 or #; Busa

Introduction to medium of oil; individual projects and instruction.

70B-71B-72Bf,w,s Oil Painting

2-2-2 cr, §70-71-72 (no cr for art majors); for general students; prereq 20 or 23 or equiv, with #

73f-74w-75s Presentation Techniques

3-3-3 cr; prereq 24 (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.

80A,B,Cf,w,s Sculpture II

80A Direct Metal Sculpture

3 cr; prereq 42; Nash
Attention given to 20th-century tools and equipment.

80B Direct Carving in Stone and Wood

3 cr; prereq 42; Kraning
Some work in combinations of materials.

80C Metal Casting of Sculpture

3 cr; prereq 42; Daly
Lost wax and sand casting techniques are employed.

81ABCf,w,s, 82ABCf,w,s Sculpture III

81A Direct Metal Problems of Sculptural Expression and Organization
3 cr; prereq 80ABC; Nash

81B Carving, Modeling, Plastics, and Assemblage of Sculpture

3 cr; prereq 80ABC; Kraning

81C Problems Concerned with Cast Metal Sculpture

3 cr; prereq 80ABC; Daly

82A Experimental Work in Direct Metal

3 cr; prereq 81A; Nash
Assigned class problems.

82B Experimental Work in Plastics and Assemblage

3 cr; prereq 81B; Kraning
Assigned class problems.

82C Experimental Work in Cast Metals

3 cr; prereq 81C; Daly
Assigned class problems.

83f-84w-85s Photography II

3-3-3 cr; prereq 11 or Jour 6 or #; Downs, Liebling

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.

88Hf Interdisciplinary Honors Seminar: Music, Studio Arts, Theatre

2-4 cr, §Mus 88H, Th 88H; prereq jr, sr honors candidate, #; Nash

89Hw Interdisciplinary Honors Seminar: Music, Studio Arts, Theatre

2-4 cr, §Mus 89H, Th 89H; prereq jr, sr honors candidate, #; Nash

90-91-92f,w,s Printmaking, Intaglio Processes

3-3-3 cr; prereq 32 or #; Bethke

93-94-95f,w,s Ceramic Design

3-3-3 cr; prereq 45 or #; MacKenzie
Continuation of 45. Greater emphasis on wheel throwing. Advanced design problems and introduction to glaze and clay experimentation. Emphasis on development of personal expression in ceramic medium.

101Hf,w,s Honors Thesis

Cr ar; prereq #

102Hf,w,s Honors Thesis

Cr ar; prereq #

120-121-122f,w,s Advanced Drawing

3-3-3 cr; primarily for painting majors; prereq 55 or equiv; Busa
Drawing in all mediums from life and from imagination. Studies of history of drawing.

123f-124w-125s Film Workshop

3-3-3 cr; prereq art or humanities or music or theatre major and #; Downs, Liebling
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.

133-134-135 Advanced Lithography

3-3-3 cr; prereq 34; Priede
Specialized work in color printing and planographic techniques.

140-141-142 Basic Sculpture

3-3-3 cr; prereq #; Nash

145 Ceramics

3 cr; prereq #; MacKenzie

150-151-152f,w,s Problems in Painting

3-3-3 cr; prereq 72 and #; Busa

160, 161, 162 Advanced Problems: Studio Photography

3 cr; prereq #

50 / Course Offerings and Major Requirements

- 163, 164, 165 Advanced Problems: Studio Film**
3 cr; prereq ‡
- 180ABC-181ABC, 182ABCf,w,s Sculpture IV**
3-3,3 cr; prereq 9 cr above 80A for 180ABC, 180ABC for 182ABC; Nash, Daly, Kraning
Advanced work in wood, stone, plaster, metal, plastics, and other materials of sculpture. Students work individually on projects.
- 183 Proseminar: 20th-Century Art Theories in Painting**
3 cr; prereq sr, 152, and ‡; Myers, Busa
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.
- 184 Proseminar: Photography**
3 cr; prereq 125 and ‡; Downs, Liebling
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.
- 185 Proseminar: 20th-Century Art Theories in Sculpture**
3 cr; prereq 183 and ‡; Nash
- 186 Proseminar: 20th-Century Art Theories in Printmaking**
3 cr; prereq 190 and ‡; Myers
- 187 Proseminar: 20th-Century Art Theories**
3 cr; prereq ‡
- 190-191-192f,w,s Advanced Printmaking—Intaglio Processes**
3-3-3 cr; prereq 92 or ‡; Myers, Bethke
- 193f,w,s-194f,w,s-195f,w,s Advanced Problems in Studio**
3-3-3 cr; prereq ‡
Individual projects and guidance.
- 196, 197, 198 Glass Working**
3 cr; prereq ‡
Introduces techniques involved in forming glass from its molten state. Primary concern is creative expression with technical understanding.

Astronomy/see Physics and Astronomy

Avadhi/see East and South Asian Languages

Behavioral Biology/see Ecology

Bengali/see East and South Asian Languages

Bulgarian/see Slavic and East European 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 curriculums.

UPPER DIVISION COURSES

- 51w-52s Introduction to Biochemistry**
4-4 cr; prereq OrCh 62 or ‡; students with grade of A or B in Biol 60-61
may be exempted from 51; 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.

Biol 60f,s Biochemistry (see Biology listings)

Biol 61f,s Biochemistry Laboratory (see Biology listings)

98f,w,s Undergraduate Seminar

1 cr per qtr; prereq sr in biochemistry
Discussions and reports.

99f,w,s Undergraduate Research

1-3 cr per qtr; prereq sr in biochemistry
Research problems for B.S. thesis (optional).

119f Physical Biochemistry

3 cr; prereq PCh 101 or equiv, ‡; Lovrien
Hydrodynamic, optical and thermodynamic methods for study of macromolecular structure in solution, particularly proteins. Quantitative aspects of conformation changes. Lectures and assigned reading.

141-142-143 General Biochemistry (same as MdBc 141-142-143)

3-3-3 cr; prereq ¶145, 146 except with Δ, 1 yr organic chemistry and cr in

physical chemistry or ¶PCh 101, 107, or 90 and ‡

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.

145f, 146w General Biochemistry Laboratory

3,3 cr; prereq ¶141-142, 4 cr in analytical chemistry and ‡; Glass, Lovrien, Gander

Laboratory work paralleling and required of all who are registered in BioC 141-142-143 and MdBc 141-142-143 except with permission of department heads.

148 General Biochemistry Laboratory

2 cr; prereq 142, 4 cr in analytical chemistry and ‡

For students in chemistry and chemical engineering.

151w-152s Introduction to Biochemistry

4-4 cr; prereq OrCh 62 and ‡; Henderson, Schultze

Same as 51-52 except that a term paper is required.

Biology (Biol)/College of Biological Sciences

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

● Major Sequence in Arts College—

Prerequisites:

- A. Math through 21 or 44
- B. GeCh 4-5† or equivalent
- C. OrCh 61-62
- D. Phys 4-5-6 or 7-8-9

Requirements:

- A. Biol 2 or 49, 50, 51, 52, 60, 70, 80, 82, 110, 120
- B. 4-6 additional laboratory cr in three biology courses, either core or elective

For the specialized curricula in biology, see the *College of Biological Sciences Bulletin*.

52 / Course Offerings and Major Requirements

Honors Program—Biology Majors: Information may be obtained in the College of Biological Sciences office.

General Education—Nonscience or nonbiology majors should note particularly the availability of Biol 1-2†, because course usually closes early during registration.

LOWER DIVISION COURSES

1-2† Biology

5-5† cr; prereq none, high school chemistry recommended; 3 lectures on CCTV, 1 quiz-discussion, 3 lab hours per wk
Study of plants, animals, and microbes. Includes introduction to ecology, physiology, classification, cytology, energetics, genetics, development, and evolution.

2Hf,w,s Honors Course

5 cr; prereq grade of A or B in Biol 1

49f,s Principles of Biology

3 cr, §Biol 2; prereq GeCh 5 or 25
Introduction to biology, including cell theory, energy relations, reproduction, inheritance, and evolution.

UPPER DIVISION COURSES

50 Animal Biology

5 cr; prereq 49 or 2 and GeCh 6 or equiv; W Herman
Survey of types of animals; emphasis on varied ways in which different animals have solved similar problems.

51 Plant Biology

5 cr; prereq 49 or 2 and GeCh 6 or equiv
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.

52f Microbiology

4 cr, §MicB 153; prereq 49 or 2, OrCh 62; Dworkin
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.

60s Biochemistry

4 cr; prereq 49 or 2, OrCh 62; Dagley
Introduction to biochemistry and biophysics of cells; emphasis on enzyme catalysis, cellular energetics, biosynthesis of cellular constituents, and cellular regulatory mechanisms.

61s Laboratory in Biochemistry

1 cr; prereq 60 or §60; Chapman

70 Genetics

3 cr, §Gen 66; prereq 50, 51, 52, 60; offered 1969-70 and alt yrs; Snyder
Introduction to principles and mechanisms of heredity; emphasis on structure and func-

tioning of genetic material and its relation to breeding behavior, development, and population structure in prokaryotic and eukaryotic organisms.

71 Laboratory in Genetics

2 cr; prereq 70 or Gen 66 or §Gen 66

80f Ecology

3 cr; prereq Math 44 or 23, and Biol 70, 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.

81 Laboratory in Ecology

1 cr; prereq 80 or §80; Wright, Tester

82 Field Biology

1 cr; prereq 50 and 51; Marshall
Field trips stressing local habitat types and instruments used in ecological research.

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 biologist.

110 General Physiology

3 cr; prereq 50, 51, 52, 60, Math 44 or 23, Phys 9 or equiv, §111; Rhea, Benolken

Quantitative approach to study of cell function; emphasis on those cellular properties common to all biological systems.

111 Laboratory in General Physiology

2 cr; prereq §110; Rhea, Benolken

115 Biochemical Evolution

3 cr; prereq 60, 61 or equiv; Kirkwood, Jenness

Lectures and assigned reading on molecular evolution covering prebiotic evolution and the phylogeny of important functional molecules and biochemical systems in living organisms.

120 Developmental Biology

3 cr; prereq 70 and 110; Stetler, Spratt
Developing systems and control mechanisms of development, from molecule to organism.

121 Laboratory in Developmental Biology

2 cr; prereq 120 or ¶120; Spratt

Biometry (PubH)/Public Health, College of Medical Sciences

Biometry interrelates statistics, mathematics, and computer science in the study of quantitative concepts and research procedures of biology and medicine. Biometry has thus a unique role in liberal education.

As a major field, biometry prepares the student for a variety of careers in: (1) medical and biological research; (2) pharmaceutical industry; (3) voluntary and governmental health agencies at the local, state, national and international level, and (4) teaching.

● **Major Sequence in Arts College—**

Prerequisites:

Math 42-43-44

Requirements:

- A. PubH 110ABC, 111ABC, 120A
- B. Stat 131-132-133 (or 121-122-123)
- C. GeCh 4-5†, 6
- D. Phys 7-8-9 (or 4-5-6)
- E. Biol 49 (or 1-2†)

The premedical curriculum, supplemented by Math 42-43-44 and Requirements A and B above, constitutes an acceptable major program in biometry.

CLA requirements for 30 additional Upper Division cr must also be fulfilled. The following courses in mathematics, biology, chemistry and philosophy of science are especially recommended for these purposes:

- A. Math 55, 107-108
- B. OrCh 61, 62
- C. Biol 52, 70, 110
- D. Phil 70, 160

Note that the biometry courses listed below are offered in the School of Public Health (PubH).

54 / Course Offerings and Major Requirements

UPPER DIVISION COURSES

PubH 110Af Biometry I

3 cr; prereq Math 10 or # and ¶111A; Bartsch

Basic concepts in probability; binomial, Poisson, and normal probability models; testing statistical hypotheses and estimation of parameters of probability models.

PubH 111Af Biometry Laboratory I

2 cr; prereq ¶110A; Bartsch

Application of probability concepts to development of probability models for random phenomena in biological and medical sciences.

PubH 110Bw Biometry II

3 cr; prereq 110A and ¶111B; Bartsch

Further consideration of testing statistical hypotheses and interval estimation; regression analysis; correlation; use of ratios; analysis of variance; contrasts and multiple comparison techniques.

PubH 111Bw Biometry Laboratory II

2 cr; prereq ¶110B; Bartsch

Application of concepts of testing and estimation concerning parameters of basic probability models; application of regression to bioassay; examples of use and misuse of ratios; application of analysis of variance to bioassay.

PubH 110Cs Biometry III

3 cr; prereq 110B and ¶111C; Bartsch

Analysis of randomized block, factorial and

split plot designs; χ^2 applied to frequency data.

PubH 111Cs Biometry Laboratory III

2 cr; prereq ¶110C; Bartsch

Designs illustrated with numerous examples from biological sciences; application of χ^2 to goodness of fit and heterogeneity tests.

PubH 120Af-Bw-Cs Biomedical Computing

3-3-3 cr; prereq Math 10; Johnson and others

Introduction to data processing concepts and equipment; information storage and retrieval; statistical analysis packages; dynamic programming; special input/output techniques for biological laboratory experimentation, epidemiology, hospital information systems, and pattern recognition.

PubH 121Af-Bw-Cs Quantitative Mammalian Biology

3-3-3 cr; prereq 1-year sequences in mathematics, physics, chemistry, and biology or #; Evans

A: Diffusion, surface tension, and mechanics of respiration, circulation, digestion, and locomotion.

B: Chemical aspects of blood, respiration, renal function, nutrition, and metabolism.

C: Endocrine, sensory, neuromuscular, and central neural functioning.

Biostatistics/see Public Health

Botany (Bot)/College of Biological Sciences

See also listings under biology.

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

LOWER DIVISION COURSES

10s Minnesota Plant Life

3 cr; suitable for nonmajors; Morley
Nontechnical survey of all plant groups native to Minnesota; special reference to identification and distribution.

12w Plants Useful to Man

4 cr; for majors or nonmajors; Lawrence
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.

Biol 51 Plant Biology (see biology listings)**52f,s Elementary Taxonomy**

3 cr; prereq Biol 2 or 51; 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.

53w Plant Anatomy

5 cr; prereq Biol 2 or 51; Hall
Structure and development of plants with special reference to vascular plants.

55f Morphological Methods

3 or 5 cr; prereq 53 and §; Abbe
Introduction to techniques basic to anatomy, morphology, and cytology.

91f,s Survey of Plant Physiology

3 cr; prereq Biol 2 or 51, GeCh 5 or 25; 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.

91Af,s Plant Physiology Laboratory

2 cr; prereq 91 or §91
Laboratory course to accompany Bot 91.

103f Plant Embryology

3 cr; prereq 104 or §; Abbe
Early stages of somatic development with emphasis on vascular plants.

104f Survey of Plant Kingdom

5 cr; prereq Biol 2 or 51; Abbe
Brief consideration of evolutionary relationships throughout plant kingdom, especially as illustrated by life histories.

PIPa 105 Introduction to Study of Fungi
(see Agriculture bulletin)**106w Survey of Angiosperm Families**

5 cr; prereq 52 or §; offered 1969-70 and alt yrs; Morley
Detailed study of characteristics of orders and families of flowering plants on worldwide basis.

108f Pteridophytes

3 cr; prereq 52 or §; offered 1969-70 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.

110f Gymnosperms

3 cr; prereq 52 or §; offered 1968-69 and alt yrs; Ownbey
Survey of taxonomy and phylogeny of gymnosperms; special emphasis on living representatives.

112su Aquatic Flowering Plants

5 cr; prereq 52 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.

114w Principles of Angiosperm Phylogeny

3 cr; prereq 52 or §; offered 1968-69 and alt yrs; Morley
Evolutionary relationships and various means of judging them within the angiosperms. Laboratory investigation of representative and critical groups.

115s Flora of Minnesota

4 cr; prereq 52 or §; Ownbey
Vascular plants of the state; taxonomic and floristic relationships; geographical distribution and variation; speciation; collection and identification; field trips.

116su Summer Flora of Minnesota

5 cr; prereq 52 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.

118f,s General Cytology

5 cr, §CB 118, Zool 165; prereq 10 cr in biology, botany, or zoology, elementary genetics or §
Introductory analysis of structure and related functions of intact cells and protoplasmic systems. Nature of cytoplasm, nuclei, and cell walls. Relationship of cytological data to life cycles, cytogenetics, cytotoxicology, and cytochemistry.

119s Experimental Cytology

3 or 5 cr; prereq 118 or Zool 165
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*.

121w Developmental Plant Anatomy

5 cr; prereq Biol 2 or 51 or equiv; Abbe
Microscopic structure of vascular plants; particular attention to development in root, stem, and leaf.

56 / Course Offerings and Major Requirements

125f Morphogenesis

5 cr; prereq 10 cr in botany or biology; Abbe

Development of form and structure in ontogeny and phylogeny; phenomena genetic factors involved.

126f Pre-Pleistocene Palynology

3 cr; prereq 165; offered 1968-69 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.

127f Morphology of Vascular Plants

5 cr; prereq 104 or §; Abbe, Hall

Vegetative and reproductive structure of living and fossil vascular plants. Their evolutionary relationships based on phylogenetic principles.

128s Phyletic Paleobotany

3 cr; prereq §; Hall

Morphology, anatomy, and evolution of fossil plants, especially those occurring in late Paleozoic.

129f Floristic Paleobotany

3 cr; prereq §; offered 1969-70 and alt yrs; Hall

Fossil floras from late Paleozoic to present; emphasis on macrofossil remains, especially leaves, and their use in stratigraphy, paleoclimate and paleoecologic interpretations.

PIPa 132—Biology of Fungi (see Agriculture bulletin)

141s Survey of Plant Physiology

3 cr; prereq Biol 2 or 51; 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.

141As Plant Physiology Laboratory

2 cr; prereq 141 or §141

Laboratory course to accompany Bot 141.

150f Introduction to Study of Algae

5 cr; prereq 10 cr in botany or biology or §; offered 1968-69 and alt yrs; Brook
Structure, reproduction, and life histories of major algal divisions.

151f Biology of Algae

5 cr; prereq 150 or §; offered 1969-70 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.

155su Freshwater Algae

5 cr; prereq 10 cr in biology or §; offered in Lake Itasca biology session

Morphology and taxonomy of freshwater algae; collection and identification of local algae.

157su Bryophytes and Pteridophytes

5 cr; prereq 10 cr in biology or §; offered in Lake Itasca biology sessions

Field and laboratory study of mosses and liverworts of Minnesota.

159su Lichens

5 cr; prereq 10 cr in botany or zoology or §; offered in Lake Itasca biology sessions

Taxonomy, ecology, and floristics of lichens of northern Minnesota; identification, sampling methods, microchemistry as taxonomic tool.

Bot 165w Pollen Morphology and Taxonomy

3 cr; prereq 10 cr in botany or biology and §; offered 1968-69 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.

Phcg 165f Basic Application of Radionuclides (see College of Pharmacy Bulletin)

Phcg 166f Basic Laboratory Course in Radionuclide Techniques (see College of Pharmacy Bulletin)

Phcg 167w Advanced Course in Radionuclides (see College of Pharmacy Bulletin)

Phcg 168w Advanced Laboratory Course in Radionuclide Techniques (see College of Pharmacy Bulletin)

PIPa 168f Experimental Protoplasmatology (see Agriculture Bulletin)

Bot 169s Quaternary Phytogeography and Palynology

5 cr; prereq Bot 165 and Biol 80, or §; offered 1968-69 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.

182f Plant Physiology

3 cr; prereq Biol 60 or equiv; Soulen, Olson

Plant cell and its organelles, metabolism, including photosynthesis, and genetic control of physiological processes; emphasis throughout on dynamic aspects of these processes.

183w Plant Physiology

3 cr; prereq Biol 2 or 51; OrCh 42 or 62, physics; Sudia and others

Discussion of membrane phenomena, water relations, mineral metabolism, and translocation in plants.

184s Plant Physiology

3 cr; prereq Biol 2 or 51, OrCh 42 or 62, physics; Brun and others

Growth of higher plants, including regulation by hormones, light, and temperature.

185w Physiology of Photosynthetic Microorganisms

3-5 cr; prereq #; offered 1968-69 and alt yrs; Frenkel

Primarily a laboratory course dealing with application of spectrophotometry, manometry, and other techniques used in elucidation of physiological behavior, chemical makeup, and intermediary metabolism of algae and photosynthetic bacteria.

186w Measurement of Plant-Environment Interactions

1-4 cr; prereq PCh 90, and #; Sucoff and others

Laboratory course dealing with measurements using intact plants, including water balance, plant-radiation interactions, and gas exchange between plants and environment.

187 Methods of Plant Analysis

1-6 cr; prereq AnCh 57, 8 cr biochemistry and #; Weiser and others

In-depth experimental laboratory approach to microscopic analysis, sample preparation, fractionation, isolation, and measurement of plant compounds employing modern methods of plant physiology.

188f,w,s 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.

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, page 82).

Students electing a minor in business administration are urged to include Acct 24-25-26.

All business administration courses presume as prerequisite that student has met the qualifications for entering the School of Business Administration (see p. 237).

LOWER DIVISION COURSES

Acct 24f,w,s-25f,w,s-26f,w,s Principles of Accounting

3-3-3 cr, §Acct 55A-B; 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.

Prod 50f,w,s Production Management

3 cr, §Prod 150; prereq QA 53

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.

58 / Course Offerings and Major Requirements

QA 52 Quantitative Methods for Administration I

3 cr; prereq Math 40A or 43 or #
Introduction to quantitative models; measurement and statistical description; probability and probability distributions; sampling and sampling distributions.

QA 53 Quantitative Methods for Administration II

3 cr; prereq 52 and Econ 2 or #
Introduction to decision problems; simple static models; static models dominated by constraints; dynamic models, and simulation.

QA 54 Quantitative Methods for Administration III

3 cr; prereq 53 or #
Statistical estimation and prediction; statistical decision making; introduction to design of experiments; regression and correlation, and time series analysis.

IR 52f,w,s Systems of Industrial Relations: Labor Marketing

3 cr, §Econ 62, IR 152; prereq Econ 2 or equiv
Introduction to current employment relationships; economic approach and analysis. Application and conservation of human resources in employment, related social and economic problems.

Ins 53f,w,s Risk Management and Insurance

3 cr, §153; prereq Econ 2 or equiv
Recognition, measurement, and evaluation of insurable personnel, property, and liability risks of firms and families. Tools of risk management.

Tran 54f,w,s Fundamentals of Transportation

3 cr, §154; prereq Econ 2 or equiv
Organization and economic aspects of transportation system of United States including rail, highway, air, pipeline, and water.

BFin 56f,w,s Corporation Finance

3 cr, §156; prereq Acct 26
Principles governing planning, raising, and control of short- and long-term funds for a business enterprise.

Mktg 57f,w,s Principles of Marketing

3 cr, §157; prereq Econ 2 or equiv; 2 lect, 2 quiz sections per wk
Marketing functions and institutions. Channels of distribution. Retail and wholesale trade.

BLaw 58f,w,s Business Law: Contracts

3 cr, §158; prereq Econ 2 or equiv
Law of contracts. Case method.

IR 142w Settlement of Industrial Relations Disputes

3 cr; prereq 52 or 152
Nature of industrial conflict in employment relations; stresses contributing to conflict and dispute situations.

Mktg 187 Price Policy

3 cr (not available for grad cr); prereq 57
Managerial problems concerning pricing and price policy. Methods used and factors considered in pricing goods and services in industrial markets.

Cell Biology/see Genetics

Chemistry/Institute of Technology

● Major Sequence in Arts College—

Prerequisites:

- A. GeCh 24, 25 or their equiv
- B. Phys 7-8-9 or their equiv
- C. Mathematics through integral calculus (Math 31 or 44)

Requirements:

- A. OrCh 61-62-63, and 65
- B. AnCh 46, 47, 111

C. PCh 101, 102, 103 or 104 with appropriate amount of laboratory in PCh 105A, 106A

D. InCh 103

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. 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, p. 134).

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

Analytical Chemistry (AnCh)

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.

40 Introduction to Analytical Chemistry
4 cr; for physics majors; prereq GeCh 14, 15; 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.

46 Introduction to Analytical Chemistry I
3 cr; prereq GeCh 5 or 25 or ¶GeCh 5 or 25
Lecture. Equilibria involved in analytical processes. Properties and formation of precipitates. Methods of separation. Introduction to electrochemical methods.

46H Honors Course: Introduction to Analytical Chemistry I
3 cr; prereq GeCh 5 or 25 or ¶GeCh 5 or 25, and ‡

47 Introduction to Analytical Chemistry II
5 cr; prereq 46
Lecture and laboratory. Theoretical fundamentals of volumetric processes in general, including an introduction to physical methods of endpoint detection.

47H Honors Course: Introduction to Analytical Chemistry II
5 cr; prereq 46 and ‡

UPPER DIVISION COURSES

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

60 / Course Offerings and Major Requirements

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

57A Quantitative Analysis

3 cr; 57A, 57B†; for nonchemistry majors; prereq GeCh 5
Survey of modern quantitative methods of analysis. Lecture.

57B Quantitative Analysis

2 cr; for nonchemistry majors; prereq 57A or 57A
Survey of modern quantitative methods of analysis including elementary physicochemical procedures. Laboratory.

96, 97, 98 Senior Thesis

Cr ar; prereq 4th yr and #
Written final senior thesis report is required.

103 Qualitative Inorganic Microanalysis

3 cr; prereq 47
Use of microscope. Technique of handling small amounts of materials. Inorganic qualitative analysis by means of crystal reactions and modern spot reactions.

104 Polarizing Microscope

3 cr; limited to 16 students; prereq 47 and Phys 3, 6 or 9, or #
Its use and application to chemistry. Identification of substances.

105 Quantitative Inorganic Microanalysis

3 cr; limited to 16 students; prereq 47
Representative methods of micro- and semi-microanalysis; gravimetric, volumetric, and colorimetric.

106, 107, 108 General Technical Analysis

2 or 3 cr per qtr; prereq 47
Analysis of commercially important materials such as steel, nonferrous alloys, ores, and glass; use of microscope in technical problems, quantitative analysis of heterogeneous mixtures, particle size determinations.

111 Physicochemical Methods of Analysis

3 cr; prereq 47, PCh 101
Lecture. Optical and electrochemical methods and methods of separation.

112 Physicochemical Methods of Analysis

3 cr; prereq 111
Laboratory course. Quantitative application of electrochemical, optical, and other physical techniques.

113 Physicochemical Methods of Analysis

3 cr; prereq 111 and #
Laboratory. More advanced treatment of material in 112.

115 Advanced Analytical Chemistry

2 cr; prereq 47
Condensed review of fundamentals of gravimetric and volumetric analysis.

116 Solution Equilibria

3 cr; prereq 115
Lecture. Systematic treatment of aqueous and nonaqueous equilibria and principles underlying volumetric endpoint detection techniques.

117 Electrochemical Methods of Analysis

4 cr; prereq 111 or 211
Lecture. Potentiometric, coulometric, polarographic, and other electrical methods.

118 Electrochemical Methods of Analysis

3 cr; prereq 117
Laboratory course.

140 Water Analysis

2 cr; prereq 47
Analysis of potable water with interpretation of results.

141, 142, 143 Seminar: Modern Problems in Analytical Chemistry

1 cr; prereq 111

General Chemistry (GeCh)

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.

4-5† General Principles of Chemistry

5-5† cr, §24-25 or 14-15; prereq predicted Math GPA 1.90 on ACT; Math Z 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; Brasted
Introduction to chemistry from 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.

6 Principles of Solution Chemistry

4 cr; prereq 5 or 15 or 25; 3 lect and 4 lab hrs per wk; Brasted

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

24 General Principles of Chemistry

5 cr, §4, 14; prereq 4 yrs high school math, 1 yr high school chemistry, 1 yr high school physics recommended; 3 lect plus two 3-hr labs per wk

Selected topics in chemistry: atomic structure, molecular structure, chemical stoichiometry, kinetic theory.

24H Honors Course: General Principles of Chemistry

5 cr, §4, 14; prereq ‡

25 General Principles of Chemistry

3 cr, §5, 15; prereq 24; 2 lect plus one 3-hr lab per wk

Selected topics in chemistry: gas phase chemical equilibrium, chemical kinetics, electrochemistry.

25H Honors Course: General Principles of Chemistry

3 cr, §5, 15; prereq 24 or 24H and ‡

Inorganic Chemistry (InCh)

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.

96, 97, 98 Senior Thesis

Cr ar; prereq 4th yr and Δ

Written final senior thesis report required.

103 Inorganic Chemistry I

3 cr; prereq PCh 102A

Atomic structure, structure and bonding in covalent molecules and ionic crystals, thermochemistry of chemical bonding. Applications to chemistry of nontransition elements.

104 Inorganic Chemistry II

3 cr; prereq 103 or ‡

Chemistry of transition metal and rare earth compounds: nomenclature and stereo-

chemistry; thermodynamics and kinetics of complex ion reactions; crystal field, ligand field, molecular orbital, and valence bond descriptions of bonding.

122 Inorganic Chemistry Laboratory

2 cr; prereq AnCh 46, 47 and InCh 103

Measurements of equilibrium and kinetics of selected inorganic reactions, and synthetic methods.

134, 135, 136 Seminar: Modern Problems in Inorganic Chemistry

1 cr; prereq 103, Δ

Organic Chemistry (OrCh)

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.

16 Carbon Compounds

4 cr; for students in engineering, except chemical and mining; prereq GeCh 5 or equiv; 4 lect hrs per wk; cannot be substituted for OrCh 61 or 62

Carbon compounds; special emphasis on those compounds useful as engineering ma-

terials, and processes by which such compounds are made.

17 Carbon Compounds Laboratory

1 cr; prereq 16 or ¶16

Laboratory course, to accompany OrCh 16.

62 / Course Offerings and Major Requirements

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.

61 Elementary Organic Chemistry

5 cr; prereq GeCh 5 or 25 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.

62 Elementary Organic Chemistry

5 cr; prereq 61 or 41; 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.

63 Elementary Organic Chemistry

3 cr; prereq 42 or 62; 63 is prerequisite
to all other advanced courses in organic
chemistry; 3 lect per wk

(Continuation of 61-62) Lecture course.

65 (old 64) Elementary Organic Chemistry Laboratory

4 cr; prereq 63 or ¶63; prereq to all
advanced courses in organic chemistry;
8 lab, 1 lect, and 1 conf hrs per wk

96, 97, 98 Senior Thesis

Cr ar; prereq #, 4th yr

Written final senior thesis report is required.

103 Spectral Methods for Organic Qualitative Analysis

4 cr; prereq 65 or 102

Advanced course. Instrumental methods in organic qualitative analysis.

139 Advanced Organic Chemistry Laboratory Work

2-5 cr; prereq 64 or 65; 6-15 hrs lab
work ar

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

142 Chemistry of Natural Products

3 cr; prereq 63; offered 1969-70 and
alt yrs

Including acetogenins, terpenes, alkaloids, biogenesis.

143 Chemistry of Natural Products

3 cr; prereq 63; offered 1968-69 and
alt yrs

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

144 Heterocyclic Compounds

3 cr; prereq 63; offered 1968-69 and
alt yrs

Typical classes of heterocyclic compounds, their chemical and physical properties and uses, synthesis.

165 Organic Qualitative Analysis

4 cr, §65; prereq 63; 8 lab and 2 conf
hrs per wk

Reactions of typical functional groups and introduction to methods of organic qualitative analysis.

Physical Chemistry (PCh)

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.

90 Introduction to Principles of Physical Chemistry

3 cr; prereq Math 10 or equiv and 1 yr

general chemistry and 1 yr college physics

Designed especially for majors in biological sciences who are minoring in biochemistry.

91-92-93 Special Topics in Physical Chemistry

2-2-2 cr; primarily for 3rd and 4th yr chemistry majors; prereq 103 or 104 or 108

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

96-97-98 Senior Thesis

Cr ar; prereq #, 4th yr

Written final senior thesis report is required.

101 Physical Chemistry

4 cr; prereq 1 yr college chemistry, Phys 9 or ¶Phys 9, or 6 with #, Math 31 or 44

Basic thermodynamics.

102 Physical Chemistry

4 cr; prereq 1 yr college chemistry, Phys 9 or ¶Phys 9, or 6 with #, Math 31 or 44

Atomic and molecular structure.

103 Physical Chemistry

4 cr; prereq 101 or 101A; 103 usually taken after 104

Electrolytic solutions, electrochemistry, theory of liquid and solid states.

104 Physical Chemistry

4 cr; prereq 101 or 101A and 102 or 102A; 104 usually taken before 103

Statistical mechanics and reaction kinetics.

105A Laboratory

1-3 cr; prereq 101 or 102 or 101A or 108

106A-B Laboratory

1-3 cr; prereq 105A

107-108 Elementary Physical Chemistry

3-3 cr; prereq 1 yr college chemistry, Phys 9 or ¶Phys 9, or 6 with #, Math 25A or 31 or 44

Brief general survey.

112 Atomic and Molecular Structure

3 cr; prereq minimum of 2 qtrs physical chemistry

Experimental viewpoint.

113 Atomic and Molecular Structure

3 cr; prereq 112 or equiv

Introduction to quantum mechanics; applications to structure and bonding.

114 Physical Chemistry

4 cr; prereq 101 or 101A

Principles of classical thermodynamics.

115 Physical Chemistry

4 cr; prereq 114 or #

Statistical mechanics and kinetic theory.

116 Physical Chemistry

4 cr; prereq 115 or #

Introduction to kinetic theory of gases. Theories of rate processes and their applications.

117 Fundamentals of Reaction Kinetics

3 cr; prereq minimum of 2 qtrs physical chemistry

Empirical analysis of rate measurements, collision theory, transition state theory, chain reactions.

127 Physical Chemistry of High Polymers

3 cr; prereq 104; offered 1967-68 and alt yrs

Molecular weight measurements and molecular weight distributions in macromolecules, thermodynamics of polymer solutions, rubber elasticity, and viscoelastic behavior.

128 Colloid and Surface Chemistry

3 cr; prereq minimum of 2 qtrs physical chemistry

Fundamental principles of colloid chemistry, surface chemistry, electrokinetic phenomena, lyophobic and lyophilic colloids.

140-141-142 Molecular Spectroscopy

2-2-2 cr; prereq 102 or equiv

Examination of various types of molecular spectroscopy from standpoint of how structure information is obtained from spectra.

Child Psychology (CPsy)

● Major Sequence in Arts College—

Prerequisites:

A. Psy 1-2, 4-5

B. Upper Division standing

64 / Course Offerings and Major Requirements

Requirements:

A. CPsy 80, 81, 125 or 126 or 127

B. Minimum of 24 and maximum of 30 cr in child psychology courses (including Psy 70)

Allied field: 9 Upper Division cr in one of the following fields: anthropology, linguistics, psychology, sociology, speech, or zoology. The allied field credits may not be selected from the minor field or from fields represented in the CLA requirement of 15 Upper Division cr outside the major and the minor. If psychology is chosen as the allied field, Psy 70 cannot be counted among the allied field credits.

Minor field: The minor field must be selected from an area other than that chosen to fulfill requirements for the major.

The major in child psychology is designed for students who wish to acquaint themselves in a general way with the scientific literature concerning child psychology. Students who wish to do graduate work in child psychology should plan to take Math 10 and 40, and to acquire a broad background in biological and social sciences.

Honors Program—Those undergraduate majors in child psychology who wish to become candidates for the B.A. degree with honors may apply for admission to the Honors Program.

For a specialized curriculum in nursery school and kindergarten education, see *College of Education Bulletin*.

LOWER DIVISION COURSE

39H Independent Study

Cr ar; prereq #

Independent reading, tutorial, or research.

UPPER DIVISION COURSES

CPsy 80 is open to sophomores who have an average of at least C in Psy 1-2†. Other Upper Division courses are open also to sophomores under conditions explained at the beginning of Section II.

80f,w,s Child Psychology

3 cr; prereq Psy 2; Charlesworth, Hartup, Pick, Wright

Introduction to science of child behavior; emphasis upon critical review of theories and research.

80Hf,w,s Child Psychology: Honors Section

3 cr; prereq Psy 2, and #

81f,w,s Adolescent Psychology

3 cr; prereq Psy 2; Goldin, Flavell, Hill, Malmquist

Social, physical, mental, emotional, and personality development during adolescence.

100 Processes of Socialization

3 cr; prereq 80 or grad; Hartup and others

Consideration of processes of social learning of children. Topics: Identification, imi-

tation, reward and punishment, internalization, object, choice, etc.

125f Experimental Research with Children

3 cr; prereq 80 and #; Pick, Wright, Charlesworth

Supervised research experience. Design and conduct of experiments on child behavior in controlled laboratory situations.

126s Case Study of Children

3 cr; prereq 80 and #; Goldin

Supervised intensive study of intellectual, personality, and social development and functioning of individual normal children.

127f,w Social Behavior of Children

3 cr; prereq 80 and #; Kilmer, Moore
Behavior of children in groups; supervised observation and experience in nursery school.

132f Adolescent Development

3 cr; primarily for students in College of Education; not open to students who have received credit for 81; prereq sr, 12 cr in educational psychology, psychology, or child psychology
Growth, mental, social, emotional, and personality development.

140s Behavior Problems

3 cr; prereq 80 or equiv; Goldin
Types, origin, development, and treatment of behavior difficulties in normal children.

142w Psychology of Handicapped Children

3 cr; prereq 80 or equiv; Templin
Research related to sensory, speech, language, physical disabilities of children.

143f Problems of Mental Deficiency

3 cr; prereq 80 or equiv; Pick
Diagnosis, care, training; social and vocational problems.

144s Psychology of Gifted Child

3 cr; prereq 80 or equiv; Charlesworth
Psychology and development of high intellectual ability and of special talents.

179f,s 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.

180f Personality Development

3 cr; prereq 100; Hill

Psychoanalytic and behavior theory formulations and related research literature.

181w Peer Relationship

3 cr; prereq 100; Hartup
Peer influences; social interactions and social relations; developmental changes.

183f Language Development

3 cr; prereq 80; Templin
Development of structure and function of language, methodological problems, speech and language development; language scales; theories.

184f Sensory and Motor Development

3 cr; prereq 80; Roff
Development of sensory and perceptual processes; simple and complex motor skills.

186 Cognitive Development

3 cr; prereq 80 or equiv
Development of cognitive processes; theories of intelligence and intellectual functioning; related research literature.

188 Children in Society

3 cr; prereq 100 and #
Historical, socio-economic, cross-cultural influences, and social changes in child development.

189 Psychology of Parent-Child Relationships

3 cr; prereq 100
Discussion of parent-child relationships and evaluation of relevant research literature.

190f,w,s Topics in Child Psychology

Cr ar; prereq #
Independent reading or research.

Chinese/see East and South Asian Languages

Classics

Honors Program—In addition to minimum requirements for CLA honors and for a major 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)

● Major Sequence in Arts College—

Requirements: (A, B, or C)

A. (Recommended with Latin minor) 27 cr in Greek courses numbered 60 and above

66 / Course Offerings and Major Requirements

- B. 1. 18 cr in Greek courses numbered 60 and above
2. 9 cr in Latin courses numbered 50 and above
- C. 1. 18 cr in Greek courses numbered 60 and above
2. 6 cr from courses listed under Classics (see p. 70)
3. 6 cr in courses pertinent to classical studies offered in other departments or programs (e.g., anthropology, art, comparative literature, English, history, interdisciplinary studies, philosophy, political science, speech and theatre, to be chosen in consultation with the major adviser.

● **Suggested Minor Sequences**—Students intending to minor in Greek under the OLD graduation requirements (see p. 254) are invited to consult a departmental adviser.

LOWER DIVISION COURSES

1f-2w† Beginning Greek

5-5† cr; prereq 1 or equiv for 2

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 audio-lingual techniques and on composition.

1H-2H-3H Honors Course: Beginning Greek

5-5-5 cr; prereq registration in honors division, or high ability as indicated by college entrance records. This course is separate honors section of 1-2,3.

3s Selections from Greek Prose

5 cr; prereq 2 or equiv

Readings mainly in Plato, Xenophon, and Herodotus.

UPPER DIVISION COURSES

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

50f-51w† Reading Greek

3-3† cr, §1-2; McDonald

Intensive reading course. Previous experience in foreign language is highly desirable.

61f Plato: Selections

3 cr; prereq 3 or equiv

62w Greek Tragic Drama I

3 cr; prereq 3 or equiv

63s Homer

3 cr; prereq 3 or equiv

81 Oratory

3 cr; prereq 63 or equiv

Selections from major Greek orators: Aeschines, Lysias, Isocrates, Demosthenes, Aeschines.

82 Greek Tragic Drama II

3 cr; prereq 63 or equiv

83 History

3 cr; prereq 63 or equiv

Selections from Herodotus, Thucydides, or Xenophon.

95Hf, 96Hw, 97Hs Honors Tutorial

3, 3, 3 cr; prereq Δ

100 Craft and Context of Translation

3 cr; prereq 63 or #

Analysis of problems of translating Greek classics for contemporary readers. Examples of translation in previous centuries and today. Practice in translation with attention to literary skill and meaning.

101f-102w-103s† Structure of Greek

1-3 cr per qtr for maximum of 6 cr; prereq 3 or 51 and Latin teaching major or #; recommended for Latin teaching 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.

111 Prose Composition

3 cr; prereq 24 cr in Greek or #; offered when feasible

112-113 Prose Composition

2-2 cr; prereq Greek proficiency exam for grad majors in week prior to beginning of fall qtr classes, and ¶164, 165

121, 122, 123, 124, 125, 126 Greek Text Course

3 cr per qtr; for grad students in departments other than classics who wish text work in Greek for minor or related field; prereq Δ

Students attend 61, 62, 63, 81, 82, 83 if they meet prerequisites for these courses. Supplementary work at discretion of instructor.

161f, 162w, 163s (see 61, 62, 63)

3,3,3 cr; prereq Δ

Meets with 61, 62, 63, but requires additional work for advanced credit.

164, 165, 166 Graduate Survey

4,4,4 cr; prereq ¶112-113

164: Epic and Lyric Poetry

165: Drama

166: Prose

174A,B,C,D 176A,B,C,D 178A,B,C,D Greek Literature

3 cr per qtr

Authors vary from term to term and from year to year. One or more appropriate authors studied in a given course.

174A: Oratory

B: Tragedy

C: Comedy

D: Directed reading

176A: History

B: Philosophy

C: Religious texts

D: Directed reading

178A: Epic

B: Lyric

C: Romance

D: Directed reading

194f Proseminar: Introduction to Classical Studies

3 cr, §Lat 194; prereq grad major or #; Swanson

Survey of research fields in classical scholarship, methods, bibliography, textual history, and criticism.

Modern Greek (MdGk)

LOWER DIVISION COURSES

1-2-3 Modern Greek

5-5-5 cr

Initial experience in talking and reading demotic Greek. Pattern-practice drill, simple

readings, some grammar.

4-5-6 Intermediate Modern Greek

3-3-3 cr

Latin (Lat)

● Major Sequences in Arts College—

Requirements: (A, B, or C)

- A. (Recommended with Greek minor) 27 cr in Latin courses numbered 60 and above
- B. 1. 18 cr in Latin courses numbered 60 and above
 2. 9 cr in Greek courses numbered 50 and above
- C. 1. 18 cr in Latin courses numbered 60 and above

68 / Course Offerings and Major Requirements

2. 6 Upper Division cr from courses listed under Classics (see p. 70)
3. 6 Upper Division cr in courses pertinent to classical studies offered in other departments or programs (e.g., anthropology, art, comparative literature, English, history, interdisciplinary studies, philosophy, political science, speech and theatre), to be chosen in consultation with the major adviser

● **Suggested Minor Sequences**—Students intending to minor in Latin under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

● **Requirements for a Teacher's Certificate in Latin** (applicable only to students in the College of Education)—

Recommendations for Major:

Lat 73 or 111

3 cr from Lat 101-102-103†

18 additional cr from Upper Division Latin courses

ClPh 115 in senior year

9 cr in courses listed under Classics (see p. 70), or 10 cr in Greek

Linguistics 55

Recommendations for Minor:

Lat 73

3 cr from Lat 101-102-103†

18 cr of Upper Division Latin courses including 81, 82, 83

Linguistics 55

3 cr in courses listed under Classics (see p. 70)

LOWER DIVISION COURSES

1f, 2w, 3s Beginning Latin

5,5,5 cr

Gradual mastery of structure of Latin, for attaining reading knowledge; practice in language laboratory.

1H-2H-3H Honors Course: Beginning Latin

5-5-5 cr; prereq registration in honors division or high ability as indicated by college entrance record

3X 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.

4X Intermediate Latin

5 cr; prereq 3X or equiv or Δ

Continuation of 3X. Emphasis on Virgil.

UPPER DIVISION COURSES

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

50f-51w† Reading Latin

3-3† cr, §1, 2, 3; prereq jr

Intensive reading course. Previous experience in foreign language is highly desirable.

- 61f, 62w, 63s Survey of Latin Literature**
3,3,3 cr
- 61: Literature of Roman Republic**
Prereq 3, or 3-4 yrs high school Latin
Readings from Plautus, Terence, Lucretius, and others.
- 62: Latin Lyric Poetry**
Prereq 61 or 3X and § or Δ
Readings from Horace and/or Catullus and others.
- 63: Golden and Silver Latin**
Prereq 62 or 4X or Δ
Selections from history, satire, nonlyric verse, the novel, and other genres.
- 73 Prose Composition**
3 cr; prereq § or Δ
- 81 Ovid**
3 cr; prereq 63 or 3-4 years high school Latin or equiv
Reading in Ovid (e.g., *Metamorphoses*, *Ars Amatoria*). Poetic analysis.
- 82 Caesar and Cicero**
3 cr; prereq 63 or equiv
Prose of Caesar and Cicero. Study of the men, their styles, and their political activities.
- 83 Virgil**
3 cr; prereq 63 or equiv
Reading and analysis of Virgil's *Aeneid*. Some attention to his georgics and eclogues.
- 95Hf, 96Hw, 97Hs Honors Tutorial**
3,3,3 cr; prereq Δ
- 100 Craft and Context of Translation**
3 cr; prereq 63 or §
Problems of translating Latin classics for contemporary readers. Examples of translation in previous centuries and today. Practice in translation with attention to literary skill and meaning.
- 101f-102w-103s† Structure of Latin**
1-2† cr per qtr; prereq sr or grad, 63 or equiv, or §; required of all Latin teaching majors; Forbes, Erickson
Integrated review of basic Latin structures; experience in applying current linguistic theories to Latin texts: practice in substituting, transforming, and expanding Latin patterns; special problems in reading Latin.
- 111 Prose Composition**
3 cr; prereq 73 or Δ; offered when feasible
- 112f-113w Prose Composition**
2-2 cr; prereq Latin proficiency exam for grad majors in week prior to beginning of fall qtr classes and ¶164, 165
- 115 New Critical Approaches to Classical Texts**
3 cr; prereq 15 cr in Upper Division Latin and §; recommended for Latin teaching majors; Erickson
Analysis of recent critical trends in classical scholarship.
- 121, 122, 123, 124, 125, 126 Latin Text Course**
3 cr per qtr; for graduate students in departments *other* than classics who wish text work in Latin for minor or related field; prereq Δ
Students will attend Latin 61, 62, 63, 81, 82, 83 if they meet course prerequisites. Supplementary work at discretion of instructor.
- 135s Medieval Latin**
3 cr; prereq adv students of Latin or §; offered 1968-69 and alt yrs
Survey of Latin literature from 5th through 12th centuries; special attention to Carolingian and 12th-century Renaissance movements.
- 161f, 162w, 163s Survey of Latin Literature**
3,3,3 cr, § corresponding quarters of 61, 62, 63; prereq Δ
Meets with Lat 61, 62, 63, but requires additional work for advanced credit.
- 164, 165, 166 Graduate Survey**
4,4,4 cr; prereq ¶112-113
- 164: Latin Literature of the Republic**
- 165: Latin Literature of the Augustan Age**
- 166: Latin Literature of the Empire**
- 174A,B,C,D 176A,B,C,D 178A,B,C,D Latin Literature**
1-3 cr per qtr
Authors vary from term to term and from year to year. One or more appropriate authors studied in a given course.
- 174A: History**
B: Epistles and essays
C: Oratory
D: Directed reading
- 176A: Epic and pastoral poetry**
B: Lyric and elegiac poetry
C: Drama
D: Directed reading
- 178A: Satire**
B: Law
C: Religious texts
D: Directed reading

70 / Course Offerings and Major Requirements

194f Proseminar: Introduction to Classical Studies

3 cr, §Grk 194; prereq grad major or §; Swanson

Survey of research fields in classical scholarship, methods, bibliography, textual history, and criticism.

Classics (Clas)

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

LOWER DIVISION COURSES

1f, 2w, 3s Introduction to Classical Civilization

3,3,3 cr

1: 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.

2: 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.

3: 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.

4f, 5w, 6s Introduction to Classical Civilization: Rome

3,3,3 cr; offered 1968-69; alternates with 1,2,3

4: World of Cato

Changing values and institutions of early Roman agrarian society; rise of republic. Greek and Etruscan influences; clash with Carthage.

5: World of Augustus

From anarchy to Pax Romana, and consequences for Roman world.

6: World of Constantine

Consolidation and expansion of empire. World of Roman law and rise of Christianity.

1H, 2H, 3H; 4H, 5H, 6H Honors Courses: Introduction to Classical Civilization

4 cr per qtr; prereq registration in honors division or § or Δ. Students attend lectures in 1, 2, 3, 4, 5, 6, and meet with lecturer one additional period each week

42f,w,s Greek and Roman Mythology

2 cr, §42A; 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.

42A Greek and Roman Mythology

3 cr, §42; prereq soph

Similar to Clas 42 but with extra readings, lectures, more intensive study.

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).

48f,w,s Technical Terms of Science, Medicine, and Humanities

3 cr, §48T; prereq soph

Presentation in English contexts of Greek and Latin prefixes, and roots basic in modern technical vocabularies.

48T Scientific and Medical Terminology

3 cr, §48, 68, 68A, 68T

Practical introduction to basic terms of science and medicine through study of their roots.

UPPER DIVISION COURSES

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

68f,w,s Technical Terms of Science, Medicine, and Humanities

3 cr, §48, 48A, 68A, 68T; prereq jr Meets with Clas 48, but requires additional work for Upper Division credit.

68A Technical Terminology of Science, Social Science, and Humanities

3 cr, §48, 48T, 68, 68T; prereq 3 cr of foreign language, or linguistics, or equiv, or §; Swanson
Vocabulary of today's specialists studied according to linguistic principles.

68T Scientific and Medical Terminology

3 cr, §48, 48T, 68, 68A
Meets with Clas 48T, but requires additional work for Upper Division credit.

71f Hellenistic Religions: Introduction to History of Ancient Religions

3 cr, §171; prereq jr; Kraabel
Criticisms of traditional Greek religion. 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.

72w History of Earliest Christianity

3 cr, §172; prereq 71; 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*.

73s Expansion of Christianity Under Roman Empire

3 cr, §173; prereq jr; Kraabel
Christians in Asia Minor, Egypt, and West. Rival religions. Conflict with state. Popular piety, Christian and non-Christian (using archaeological evidence, papyri, and inscriptions). Talmudic Judaism. Varieties of Christianity in 2nd and 3rd centuries. Influence of Greco-Roman culture upon emerging Church. Constantine.

80f Classical Epic in Translation

3 cr, §180; prereq 9 cr in English literature beyond Engl 3 or in foreign literature, or Δ

Reading of Homer's *Iliad*, *Odyssey*, Virgil's *Aeneid*, with attention to cultural context of epic, the heroic character, epic formulas, and poetic techniques.

81w Greek Tragedy in Translation (Aeschylus, Sophocles, Euripides)

3 cr, §181; prereq 9 cr in English literature beyond Engl 3, 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.

82s Aristophanes and Roman Drama in Translation (Aristophanes, Menander, Plautus, Terence, Seneca)

3 cr, §182; prereq same as 81
Introductory material organized as in Clas 81, with emphasis on tradition of comedy. Reading of about a dozen comedies and three Senecan tragedies.

91f, 92w, 93s Classical Literary Traditions

3,3,3 cr, §191-192-193; prereq 9 cr in English literature beyond Engl 3, 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.

105 Classical Humanities Proseminar

3 cr; prereq §; recommended for Latin teaching majors; Schork
Integrates study of classical literary masterpieces with cultural and historical knowledge.

108 Classical Voices of Poetry: Epic, Lyric, Dramatic

3 cr, §Spch 108; prereq Spch 82 or 83 or Th 61 or 3 cr in Latin or Greek courses numbered 60 or above, or 3 cr in Upper Division courses in foreign language or literature or in English literature, or §; previous Upper Division work expected either in study of a literature or in performance, but not necessarily in both; Sonkowsky

Oral performance of selected Greek and Roman texts both in original language and in translation.

Spch 109 Classical Rhetoric

3 cr; prereq 5 and Δ; Scott
Greek and Roman theories of speechmaking; historical and philosophic context and influence on education.

72 / Course Offerings and Major Requirements

121f Introduction to Prehistoric Greek Archaeology

3 cr; prereq jr or #; McDonald
Aims and methods of modern field archaeology; record of human habitation from earliest times until end of Bronze Age; concentration on Mycenaean period; use of archaeological evidence as basis for historical reconstruction.

122w Introduction to Classical Greek Archaeology

3 cr; prereq jr or #; McDonald
Archaic through Hellenistic periods: ceramics, architecture, sculpture, numismatics, epigraphy, and city planning; evidence both uniquely provided by archaeology and that capable of synthesis with literary material; concentration on specific sites such as Corinth, Athens, Olynthus, Priene.

123s Introduction to Roman Archaeology

3 cr, §Art 161; McNally
Methods of gathering and interpreting archaeological data, introduced through survey of major technologies and artistic mediums of Romans, and consideration of selected sites.

146 Ancient Literary Criticism

3 cr, §46; prereq jr
Same class work as Clas 46, but with special independent reading and research assignments.

171f Hellenistic Religions

3 cr, §71; prereq #; Kraabel
Meets with 71, but requires additional work for advanced credit.

172w History of Earliest Christianity

3 cr, §72; prereq #; Kraabel
Meets with 72, but requires additional work for advanced credit.

173s Expansion of Christianity Under Roman Empire

3 cr, §73; prereq #; Kraabel
Meets with 73, but requires additional work for advanced credit.

180f Classical Epic in Translation

3 cr, §80; prereq grad or #
Meets with Clas 80, but requires additional work for advanced credit.

181w Greek Tragedy in Translation

3 cr, §81; prereq grad or #; Sonkowsky
Meets with Clas 81, but requires additional work for advanced credit.

182s Aristophanes and Roman Drama in Translation

3 cr, §82; prereq grad or #
Meets with Clas 82, but requires additional work for advanced credit.

190s Proseminar: Classical Archaeology

3 cr; since content varies from year to year, course may be repeated for credit; prereq 122, 123 or #; offered when feasible

Intensive study of special problem or period within a major archaeological subdivision such as topography and monuments, epigraphy, sculpture, ceramics, architecture.

191f-192w-193s Classical Literary Traditions

3-3-3 cr, §corresponding qtrs of 91, 92, 93; prereq grad or #
Meets with 91, 92, 93, but requires additional work for advanced credit.

198, 199 Special Problems in Classics

1-3 cr per qtr; prereq 9 cr in Clas, Grk, or Lat and Δ
Directed study in classical antiquity.

Classical Philology (ClPh)

UPPER DIVISION COURSES

73G Hellenistic Greek (old Grk 73)

3 cr; prereq #
Koiné 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.

115f Introduction to Classical Philology

3 cr; prereq #; Swanson
Sounds and forms of classical languages; principles of linguistic paleontology. Essential to all other works in Classical Philology.

116G History of Greek

3 cr; prereq 115 or equiv and 2 yrs Greek; Swanson

Semantic and formal development of Greek, from Mycenaean to Romaic; assigned readings, reports, lectures.

116L History of Latin

3 cr; prereq 115 or equiv or # and 2 yrs Latin; Swanson
Readings in Old Latin philological texts; introduction to Latin etymology, word formation, loanwords, historical syntax.

120G Greek Dialects

3 cr; prereq 115 and 2 yrs Greek or #; Swanson
Introductory survey of epigraphic and literary monuments illustrating ancient Hel-

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lenic dialectology. Some consideration of age-and-area hypothesis and of proto-Greek.

133L Vulgar Latin (old Lat 133)

3 cr; recommended for all students of language and §; Swanson

Lectures on development of Latin into Romance languages; reading of documents

that reveal lexical, phonological, and syntactic systems of colloquial Latin.

135 Oscan-Umbrian

3 cr; prereq grad, CIPh 115 and 116L or §; Swanson

Epigraphic and onomastic techniques for interpreting Indo-European languages of early Italy.

Communication (Comm)

LOWER DIVISION COURSES

If,w,s-2f,w,s-3f,w,s Communication

4-4-4 cr, §Comp 1-2-3, Engl A-B-C, Engl 1-2-3, or Engl 10H-11H-12H; prereq assignment to Category 1, 1A or 2 (see Important Note on page 93)

English language and its uses: constant practice in speaking, writing, listening, and reading.

✓ 1: Language in its social context; meaning, structure, and appropriateness in exposition.

✓ 2: Language and reasoning; processes and responsibilities of investigation, deliberation, and persuasion.

✓ 3: Language and public discourse; structure, content, and social implications of utter-

ances through mass media of communication.

Instruction individualized by conferences; staff consultant on speech available. Meets Group A requirement in Freshman English.

IHf-2Hw-3Hs Honors Course: Communication

4-4-4 cr, §Comp 1-2-3, Engl A-B-C, Engl 1-2-3 or Engl 10H-11H-12H; prereq assignment to Category 1, 1A or 2 (see Important Note on page 93), and Δ

(Parallel to Comm 1-2-3) 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

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Avadhi (Avdh)

UPPER DIVISION COURSES

101f-102w-103s Introduction to Avadhi

3-3-3 cr; prereq Indc 55, 56 and either Hndi 53 or §; offered 1969-70 and alt yrs

Primarily a reading course; first quarter, however, deals with grammatical explanation. Student will learn to read Avadhi, one

of greatest vehicles of Indian literature until mid-19th century.

121f-122w-123s Readings in Avadhi

3-3-3 cr; prereq 103

Selected readings in literature of Bhakti period; especially the works of Tulsi Das (d. 1627) and Kabir (d. 1518).

74 / Course Offerings and Major Requirements

Bengali (Ben)

Preparation for a Major Sequence—Indc 1. In addition, Ben 57, Indc 55 and 56 are recommended.

Major Sequence in Arts College—Ben 51-52-53, 101-102-103, and 12 cr from courses numbered above 100.

LOWER DIVISION COURSES

1f-2w-3s Beginning Bengali
5-5-5 cr

UPPER DIVISION COURSES

51f-52w-53s Intermediate Bengali
5-5-5 cr; prereq 3

57 Survey of Bengali Literature
3 cr; prereq 2, 3 or #
Lectures, discussion, and reading of representative material.

75f Structure of Bengali
3 cr; prereq Ling 60 or Anth 180 or #
Material presented partly in lecture, partly as elicited from a Bengali speaker. Laboratory technique used to demonstrate and verify hypotheses about language structure.

91Hf, 92Hw, 93Hs Honors Tutorial
3,3,3 cr; prereq Δ
Individual reading of texts selected to suit student's level and interest.

101f-102w-103s Advanced Bengali
3-3-3 cr; prereq 53

Readings of short stories and other literature in class. Class work consists of discussion related to material.

106s Bengali Syntax
3 cr; for students of Bengali language and for students of linguistics or related fields; prereq 51 and Ling 60, Anth 180 or #; offered 1968-69 and alt yrs
Students apply a particular grammatical theory to Bengali.

191, 192, 193 Research
1-3 cr per qtr; prereq #
Advanced course for student seeking guidance in reading or analysis of specialized material. Directed study.

Chinese (Chin)

● **Major Sequence in Arts College**—Chin 51-52-53, 101-102-103, 6 cr from 110, 111, 112, and 6 cr from courses numbered above 100.

LOWER DIVISION COURSES

1f-2w-3s Beginning Chinese
5-5-5 cr
1: Conversational drill. 2: Reading of simple

colloquial prose. 3: Reading and conversation continued.

UPPER DIVISION COURSES

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

51f-52w-53s Intermediate Chinese
5-5-5 cr; prereq 3; ¶3 with 101-102-103

Individual reading of texts selected to suit student's level and interest.

91Hf, 92Hw, 93Hs Honors Tutorial
3,3,3 cr; prereq Δ

101f-102w-103s Beginning Literary Chinese
3-3-3 cr; for majors in East Asian languages and East Asian area studies who

will need to use traditional texts; prereq 3, ¶3 with 51-52-53

Introduction to language of classical and traditional texts.

105f, 106w, 107s Introduction to Chinese Linguistics

3,3,3 cr; for majors in East Asian languages and for students in linguistics or comparative philology; prereq 103 or Ling 60 or #

Introduction to history of Chinese, comparison of major dialect variations, and analysis of linguistic structure of modern spoken Mandarin.

110f, 111w, 112s Survey of Chinese Literature

3,3,3 cr; prereq 9 cr in literature and 103

110: Survey of artistic writing 1000 B.C. to A.D. 600.

111: A.D. 600 to 1900, poetry, essays, plays, and novels.

112: Contemporary vernacular literature.

121f, 122w, 123s Vernacular Texts

3,3,3 cr; for majors in East Asian languages, and students in East Asian area studies; prereq 53 and 103...¶101-102-103 with #; offered 1969-70 and alt yrs

Individual recitation in class; discussion on style and content; translation projects.

125f, 126w, 127s Chinese Documents

3,3,3 cr; for majors in East Asian languages and East Asian area studies, particularly in history and political science; prereq 103 or #; offered 1968-69 and alt yrs

Reading and analysis of selected major Chinese documents of all periods.

135f-136w-137s Advanced Conversation and Composition in Chinese

3-3-3 cr; prereq 103

Presentation of modern Chinese plays; composition in various styles; formal debate as well as panel discussion of current issues in Chinese.

151, 152, 153 Directed Studies in Chinese Linguistics

3,3,3 cr; prereq 107 or equiv or #; Wang

161f, 162w, 163s Six Dynasties in Literary Texts

2,2,2 cr; for majors in East Asian languages and East Asian area studies; prereq 103; offered 1969-70 and alt yrs

Reading of representative prose and poetical works by Ts'ao Chih, Hsi K'ang, T'ao Yüan-ming, and others A.D. 200-600.

171f, 172w, 173s Poetry of T'ang and Sung Periods

2,2,2 cr; for majors in East Asian languages and East Asian area studies; prereq 103; offered 1968-69 and alt yrs

Reading of poetical works of Li Po, Tu Fu, Wang Wei, Po Chu-i, Li Yu, Ou-yang Hsiu, Su Tung-p'o and others.

175f, 176w, 177s Chinese Literature of Yüan, Ming, and Ch'ing Periods

3,3,3 cr; for majors and minors in East and South Asian languages and East Asian area studies and in comparative literature; prereq 103, 123 or #

175: Lyric poets and leading playwrights.

176: Short stories and schools of literary criticism of Ming and Ch'ing periods.

177: Development of fiction.

181f, 182w, 183s Twentieth-Century Chinese Literature

2,2,2 cr; for students in East and South Asian languages and East Asian area studies; prereq 123

181: Short stories of Lu Hsun, Lao She, Shen Tsung-wen, and Mao Tun.

182: Informal essays by Lu Hsun, Chou Tso-jen, Wen I-to, Hsu Chih-mo.

183: Lyric poetry and drama of the 20th century.

185f, 186w, 187s History of Chinese Literary Criticism

3,3,3 cr; for students in Chinese literature, Chinese history, Japanese literature, Japanese history, comparative literature, and Chinese art history; prereq 173 or #

Study and analysis of selections from major works of literary criticism. Individual projects on relationships between literary theories and contemporary aesthetic principles, between philosophical doctrine and practice in fiction and drama.

191Hf, 192Hw, 193Hs Honors Course: Research

1-3 cr per qtr; prereq 103 or 123 or #; prereq 9 cr in literature or #; knowledge of Chinese required only of majors who will read assigned portions in original

Guided research, with paper, on specific problems in Chinese literature or culture.

76 / Course Offerings and Major Requirements

Gujarati (Guj)

LOWER DIVISION COURSES

1f-2w-3s Beginning Gujarati
5-5-5 cr

UPPER DIVISION COURSES

51f-52w-53s Intermediate Gujarati
5-5-5 cr; prereq 3

75w Structure of Gujarati
3 cr; prereq Ling 60, Anth 180 or #;
offered 1969-70 and alt yrs
Material presented partly in lecture, partly
as elicited from a Gujarati speaker. Labora-
tory technique used to demonstrate and to
verify hypotheses about structure of the
language.

101f-102w-103s Advanced Gujarati
3-3-3 cr; prereq 53
Reading of short stories and other literature
in class. Discussion related to the material.

106s Gujarati Syntax
3 cr; prereq 51 and Ling 60, Anth 180
or #; offered 1968-69 and alt yrs

For students of Gujarati who have special
interest in linguistic description of the lan-
guage, and for students of linguistics or
related fields interested in applying a par-
ticular grammatical theory to Gujarati.

191, 192, 193 Research
1-3 cr per qtr; prereq #
Advanced course for student seeking guid-
ance in reading or analysis of specialized
material.

Hindi (Hndi)

Preparation for a Major Sequence—Indc 1, 2, 3.

● Major Sequence in Arts College—Hndi 51-52-53, 57, 101-102-103, 125-126-127, plus 3 cr from courses numbered above 100.

LOWER DIVISION COURSES

1f-2w-3s Beginning Hindi
5-5-5 cr; class meets 7 times per week:
5 hrs with speaker of Hindi and 2 with
linguist, in addition to assignments at
language lab

21f-22w Readings in Urdu
2-2 cr; prereq 3
For students who wish to gain proficiency
with Urdu script as well as some of vocabu-
lary not currently accepted as Hindi.

UPPER DIVISION COURSES

51f-52w-53s Intermediate Hindi
5-5-5 cr; prereq 3 or equiv
Intended to provide sound foundation in
Hindi that can be utilized either for read-
ing or speaking. Emphasis on grammatical
proficiency rather than social use of lan-
guage.

57 Survey of Hindi Literature in Transla-
tion
3 cr; Staneslow

75s Structure of Hindi (old Hndi 105f)
3 cr; prereq Ling 60, Anth 180 or #;
offered 1968-69 and alt yrs

91Hf, 92Hw, 93Hs Honors Tutorial
3,3,3 cr; prereq Δ
Individual reading of texts selected to suit
student's level and interest.

101f-102w-103s Advanced Hindi
3-3-3 cr; prereq 53; designed for quali-
fied students
Reading short stories and available literature
in Hindi. Discussion related to material.

106w-107s Hindi Linguistics
3-3 cr; prereq 51 and Ling 60, Anth
180 or #; offered 1968-69 and alt yrs

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108f Semantic Structure of Hindi

3 cr; prereq 3 or §; 6 cr in linguistics, logic or anthropology recommended

121f-122w-123s Readings in Hindi Literature

3-3-3 cr; prereq 103

Reading and discussion of writers and material selected.

125f-126w-127s Hindi Composition

2-2-2 cr; prereq 103

Grammatical and literary difficulties discussed; material selected from novels, literary essays, newspapers, and magazines.

191, 192, 193 Research

1-3 cr per qtr; open to students with special interests; prereq 103 or §

Advanced-level course for student seeking guidance in reading specialized material in his field. This could include Lok Sabha reports, etc.

Indic (Indc)

LOWER DIVISION COURSES

1f, 2w, 3s Survey of Indian Civilization

3,3,3 cr; prereq for 2 and 3 is 1; Zelliott

1: Introduction to India: Introduction to contemporary civilization, considered in light of its development.

2: Social and economic life.

3: Sources of culture: Hindu, Buddhist, and Muslim contributions to civilization. Special attention to cultural contributions of selected regions, e.g., Bengal, Tamilnad, Maharashtra.

10Af-10Bw, 10Cs 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, Bhagavatapurana; sectarian devotional literature.

12 Introduction to Basic Texts of Jainism

3 cr; prereq 10B; offered when feasible

Lectures and class discussion based on readings of selected material in translation.

UPPER DIVISION COURSES

55A-B Survey of Ancient Indian Literature

3-3 cr; prereq 10B 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.

56 Survey of Middle and Modern Indian Literature

3 cr; prereq 10 or §

Lectures and class discussion based on readings of representative material. Social and religious roles of various kinds of materials will be emphasized.

70A-B, C Basic Texts of Hinduism and Buddhism

3-3,3 cr, §10A-B,C

72 Basic Texts of Jainism

3 cr; prereq Ind 70 or §, §12

110 Survey of Sanskrit Literature

3 cr; prereq 6 cr of literature or §

130 Hindu Grammatical Thought

3 cr; prereq §

150f Contrastive Analysis of Hindi and Another Indian Language

3 cr; prereq Hindi 106, Ben 106, Guj 106 or Mar 106

Comparison of syntactic structures of two Indian languages. Hindi and Gujarati will be dealt with in 1969-70.

170 Survey of Modern Indian Literature Written in English

3 cr; prereq at least 6 cr in literature and 2, 3 or 10B

Study of literature written by Indians in English from the mid-19th century through era of political awakening and into era of independence.

Attention is called to the following courses: Philosophy 171, 172, 173, 174, 175, 176.

78 / Course Offerings and Major Requirements

Japanese (Jpn)

● Major Sequence in Arts College—51-52-53, 101-102-103, 6 cr from 110, 111, 112 and 6 cr selected from courses numbered above 100.

LOWER DIVISION COURSES

1f-2w-3s Beginning Japanese
5-5-5 cr

Lectures on basic grammar, reading, and translation of text; writing practice in syl-

labaries and Chinese characters; 300 introduced by end of year; intensive drill in sentence patterns, and practice in elementary conversation.

UPPER DIVISION COURSES

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

51f-52w-53s Intermediate Japanese
5-5-5 cr; prereq 3

Continuation of Jpn 1-2-3.

91Hf, 92Hw, 93Hs Honors Tutorial

3,3,3 cr; prereq Δ

Individual reading of texts selected to suit student's level and interest.

100A, 100B, 100C Japanese for Graduate Students

3,3,3 cr; prereq Chin 103 or #: no graduate credit allowed for majors or minors in East and South Asian Languages

For students who have working knowledge of classical Chinese to read modern written Japanese in order to make use of Japanese secondary materials on Sinological subjects for research purposes.

101f-102w-103s Advanced Japanese

3-3-3 cr; prereq 53

Continuation of Japanese 51-52-53.

105f-106w-107s Introduction to Japanese Linguistics

3-3-3 cr; prereq 103 or Ling 52 or #

105: Phonology. 106: Morphology. 107: Syntax.

110f, 111w, 112s Survey of Japanese Literature

3,3,3 cr; prereq 9 cr in literature and 103

Survey of Japanese literature, 8th century A.D. to present.

121f-122w-123s Readings in Contemporary Japanese Texts

3-3-3 cr; for majors in East Asian languages and East Asian area studies; prereq 103

Intensive study of various types of vernacular texts in class and individual projects in extensive readings. Texts will be selections of vernacular writings from 11th century to present.

135f, 136w, 137s Japanese Conversation and Composition

2,2,2 cr; prereq 3; ¶51-52-53

135: Training of hearing and speaking, drill in basic Japanese sentence patterns, drill in writing kanji and kana. Free compositions using all vocabularies and sentence patterns given by instructor.

136: Composition in the reproduction method—hearing, understanding, speaking and writing of stories told by instructor. Writing fairy tales or fables, and presenting them to class. Dictation is continued.

137: More free composition and translation from English to Japanese. Letter writing for practical use. Demonstration of short speeches in Japanese to class.

Hist 148Fw, 149Fs History of Japan

3,3 cr; Marshall

148F: to 1700. 149F: since 1700.

161f-162w-163s Classical Japanese Prose

2-2-2 cr; for majors in East Asian languages and East Asian area studies; prereq 103

Standard texts and their traditional commentaries. Secondary studies and translations consulted.

191Hf, 192Hw, 193Hs Honors Course: Research

1-3 cr per qtr; prereq 103 or 123 or #
Individual readings, research.

Hist 193Af-194Aw† Proseminar: History of Japan

3-3† cr; prereq #: Marshall

Marathi (Mar)

LOWER DIVISION COURSES

1f-2w-3s Beginning Marathi
5-5-5 cr

UPPER DIVISION COURSES

51f-52w-53s Intermediate Marathi
5-5-5 cr; prereq 3

75f Structure of Marathi
3 cr; prereq Ling 60, Anth 180 or #;
offered 1968-69 and alt yrs
Partly in lecture, partly elicited from a
Marathi speaker. Laboratory technique is
used to demonstrate and verify hypotheses
about structure of language.

101f-102w-103s Advanced Marathi
3-3-3 cr; prereq 53
Reading of short stories and other literature
in class. Class work will consist of discus-
sion related to material.

106w Marathi Syntax
3 cr; prereq 51 and Ling 60, Anth 180
or #; offered 1968-69 and alt yrs
For students of Marathi with special interest
in linguistic description of language, and
for students of linguistics or related fields
interested in applying a particular grammati-
cal theory to Marathi.

107s Marathi Generative Phonology
3 cr; prereq 51, Ling 60, Anth 180 or #

191f, 192w, 193s Research
1-3 cr per qtr; prereq #
Advanced course for student seeking guid-
ance in reading or analysis of specialized
material.

Oriental (Ortl)

UPPER DIVISION COURSES

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

76w Asian Civilization: China
3 cr; prereq soph with #; jr

77s Asian Civilization: Japan
3 cr; prereq soph with #; jr

94H Oriental Colloquium
3 cr; reading knowledge of one of fol-
lowing required: Arabic, Bengali, Chin-
ese, Hebrew, Hindi, Japanese or Sans-
krit. Offered 1968-69

Lectures by staff and research reports by
students on broad topics which will permit
a multi-disciplinary approach to problems
involving both eastern and western Asia.

196s Proseminar: East and South Asia
3 cr; same as Anth 196, Geog 196, Hist
196, Pol 196

Integrating course for students majoring in
East and South Asian Area Studies program.

Sanskrit (Skt)

Preparation for Major Sequence—Indc 1, 2 or 3 or 10A-10B, 10C.

● Major Sequence in Arts College—Skt 51-52-53, 55, 3 cr from courses num-
bered above 50, 101-102-103, and 9 cr from courses numbered above 100.

LOWER DIVISION COURSES

1f-2w-3s Beginning Sanskrit
3-3-3 cr
Introduction to script, introduction to gram-
mar and reading, recitation.

5 Sanskrit Sandhi
2 cr; prereq ¶1
(See description 55)

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UPPER DIVISION COURSES

51f-52w-53s Intermediate Sanskrit
3-3-3 cr; prereq 3

55f Sanskrit Sandhi
2 cr; prereq Ling 51, ¶1, or #
Operation of sandhi in Sanskrit from linguistic viewpoint; historical development of some alterations.

91Hf, 92Hw, 93Hs Honors Tutorial
3,3,3 cr; prereq Δ
Individual reading of texts selected to suit student's level and interest.

112 Sanskrit Composition
3 cr; prereq 101 or #
For students seeking to acquire proficiency in composing literary Sanskrit.

113 Introduction to Panini's Grammar
3 cr; prereq minimum grade avg of B through 102 or #

For students wishing to understand Indian orthodox system of Sanskrit grammar as it differs from modern grammars.

131f, 132w, 133s Readings in Philosophical Texts

3,3,3 cr; prereq 103 or #
Readings in representative text material.

191f, 192w, 193s Research
4,4,4 cr; prereq 103 and #

Thai

LOWER DIVISION COURSES

1f-2w-3s Beginning Thai
5-5-5 cr; not offered 1968-69
1: Introduction to sounds and basic constructions.

2: Introduction to more complicated constructions; increase in vocabulary.

3: Introduction to Thai script and to reading Thai prose.

Tibetan (Tib)

UPPER DIVISION COURSES

101f-102w-103s Beginning Tibetan
3-3-3 cr; open to majors in East and South Asian Languages and students in linguistics or comparative philology
Mastery of sounds and basic constructions in transcription through conversational drills;

introductions to Tibetan script and simple Tibetan prose; conversation and reading continued.

121f-122w-123s Intermediate Tibetan
3-3-3 cr; prereq 103

Ecology and Behavioral Biology/College of Biological Sciences

Ecology (Ecol)

UPPER DIVISION COURSES

50w Introduction to Ecology
3 cr; open to jrs and above, but not to biology majors; Brook
Interrelationships between environmental in-

fluences and plants and animals, including man: population growth and regulation; nature, organization, and development of ecological systems. Role of man in biosphere.

Biol 80 Ecology (see Biology listings.)

99 Research Problems

1-6 cr; prereq #

Individual research for undergraduate majors in biology.

118f Experimental Ecology

3 cr, §Ent 118; prereq 9 cr in general biology or equiv and 3 cr in animal or plant ecology, #; Chiang

Experimental approach to study of environmental factors affecting animal populations. For companion laboratory course see Ecol 201.

119su Aquatic Ecology

5 cr; prereq 15 cr including Biol 2 or 50; offered in Lake Itasca sessions; Underhill

Conditions for life in water and distribution of aquatic animals.

127s Ecology of Soil Microorganisms

4 cr, §Soils 127; prereq MicB 53 or 153, or VBac 53, or Biol 2 and #; Schmid

Soil as a microhabitat; nature of microbial population of soil; interactions among microorganisms in soil ecosystem; experimental approaches and techniques in soil ecology. Lectures and laboratory.

128f Limnology

4 cr, §Bot 138; prereq #; 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. Interrelationships of these parameters, and effects of civilization on lakes. Laboratory, field trips.

130f Ecology of Plant Communities

5 cr; prereq Biol 80

Patterns in development, structure, interrelationships, stability of plant communities.

131w Structure and Function of Ecosystems

5 cr; prereq Biol 80, 81, introductory chemistry and physics, or #

Energy exchange and cycles of water and nutrients, in relation to biological productivity and development and regulation of ecosystems.

133s Ecological Plant Geography

3 or 5 cr; prereq Biol 80 or #; offered 1969-70 and alt yrs; Lawrence, Cushing

Ecological principles of plant distribution and landscape analysis, vegetation regions of North America, interpretation of regional vegetation patterns.

135su Ecology of Itasca Region

5 cr; prereq Biol 80 or #; offered in Lake Itasca biology sessions

Plant communities represented; their dynamic relationships. Relationships of local

communities to vegetation of Minnesota as a whole. Use of modern methods of vegetation analysis and measurement of environmental factors.

137s Ecological Life Histories of Plants

5 cr; prereq Biol 51, 80, 81, 91A and #; offered 1968-69 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.

138su Wetland Ecology

5 cr; prereq 15 cr in biological subjects, introductory chemistry, or #..Biol 80 recommended; Gorham

Nature, origin, and development of lake, marsh, swamp, and bog ecosystems; environmental control and productivity.

139s Paleoecology

3 cr; prereq 8 cr in geology, Biol 80, or #; offered 1968-69 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.

140su Soils and the Ecosystem

3 cr; prereq Biol 80 or #; Farnham

Formation and distribution of soils in relationship to vegetation, climate, and other soil-forming factors. Interrelationships of soils in ecosystem.

152su Ecology of Freshwater Algae

5 cr; prereq Bot 150 or 155 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.

158su Theory and Practice in Environmental Measurement

5 cr; prereq college physics, ecology, or physiology; offered in Lake Itasca biology sessions

Physical factors of environment: energy budget, water budget, and microclimatic variation. Modern field instrumentation.

162su Vertebrate Ecology

5 cr, §Ent 162; prereq Biol 80 or equiv; offered in Lake Itasca biology sessions

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.

82 / Course Offerings and Major Requirements

170s Physiological Ecology

4 cr; prereq Biol 110 or Zool 105 and Biol 80...statistics recommended; Schmid
Current problems of distribution and abundance of animals in natural environment.

Advanced work on special topics suited to needs of individual students.

195su Problems in Ecology and Behavioral Biology

Cr ar; prereq #; offered in Lake Itasca biology sessions

196su Problems in Ecology and Behavioral Biology

Cr ar; prereq #; offered in Lake Itasca biology sessions

Advanced work on special topics suited to needs of individual students.

Behavioral Biology (BehB)

UPPER DIVISION COURSES

110s Animal Behavior

3 cr; prereq Zool 91 or 92 or equiv and #; McKinney
Causation, survival value, evaluation and ontogeny of behavior; emphasis on comparative method of ethnology.

136su Avian Behavior

5 cr; limited to 15 students; prereq Zool 76 or 135, or #; offered in Lake Itasca biology sessions
Field studies stressing courtship, nesting, and other facets in breeding behavior of birds in Itasca area.

150w Behavioral Physiology

3 cr, §AnSc 150, VPP 150; prereq AnSc 45 or VPP 45 or 6 cr in systemic physiology, Biol 110 or #; Phillips and others
Current concepts of neurological and neurochemical bases of animal behavior, including reception, coding; transmission and storage of information; levels of integration; central control of input and output; spontaneity, development, and learning.

Note—The following is a partial listing of courses offered by other departments relevant to behavioral biology: Psy 55, 75, 101, 102, 117, 127, 128 or 128-129, 132-133†, 148, 149, 150, 151; Zool 114.

Economics (Econ)

Courses offered by this department are intended to serve two purposes: (1) to provide an understanding of how an economy functions and the problems faced by decision-makers in business, government, and other organizations; (2) to train men and women for the increasingly varied careers open to economists in business, government, colleges, and universities both in this country and abroad.

The department's programs of instruction are designed not only for students seeking a degree in economics but also for students who wish to supplement their training in other fields. A pamphlet, *Undergraduate Programs in Economics of the University of Minnesota*, is available in the departmental office. While freshmen or sophomores, potential majors or minors should consult an adviser.

● Major Sequence in Arts College—

Lower Division requirements: Econ 1-2 or equivalent (6 cr). Students planning to take Upper Division Economics courses should note that, beginning fall quarter, 1969, Math 10 will be a prerequisite for all

Upper Division Economics courses. In exceptional cases part of this requirement may be waived. Students who think they might wish to enter graduate school are urged to begin calculus while in Lower Division. In any event, some mathematics and statistics are desirable.

Upper Division Requirements: Complete one of the following sequences in economic theory:

- A. Econ 65, 66, 75 (regular sequence; honors sections are sometimes offered).

Econ 65 should be taken first. Econ 66 and 75 *could* be taken concurrently in the following quarter.

- B. Econ 65T-66T (for students with calculus)

- C. Econ 165, 166 (sequence primarily for grad students)

- D. An additional 24 cr in other Upper Division economics courses (apart from Econ 50A-B, 103, 104, 160, 174, which are not open to economics majors). Out of this total of 24 cr, *not less than 12 cr* must be in Group 3 courses. (See note below dividing courses into Group 2 and Group 3.) Six of these 24 cr may, with adviser's consent, be Upper Division business administration courses. Nine credits of business administration courses, however, may be allowed if these consist of QA 52-53-54. (Note: student is restricted to those Upper Division business administration courses which are listed in CLA bulletin.)

Students *should* complete these courses as soon as possible in their junior year.

Honors in Economics—Students with a GPA of 3.00 or better are encouraged to enter the Honors degree program. For details see the departmental pamphlet, *Undergraduate Programs in Economics*, and call at the CLA Honors Division office.

For specialized curriculums in economics and social studies, see the *College of Education Bulletin*.

LOWER DIVISION COURSES

GROUP I COURSES

Bw Scope, Methods, and Application of Economics

3 cr (no cr if taken after 1-2† 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.

Cs Introduction to Economic Analysis

3 cr, §2, 1T-2T†; prereq B; may substitute for Econ 2 as prereq for intermediate courses in economics (except for majors in business administration)

Elementary training in analytical approach; special application to production and different market structures in American economy.

1-2† Principles of Economics

3-3† cr—at discretion of department, may be offered for 4 cr each qtr; §1T-2T†, C, 50A-B; prereq 3rd qtr fr

1: Macro: National income, money and banking, business cycles, and international trade.

2: Micro: Demand and supply, competition and monopoly, and distribution of income.

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1H-2H† Honors Course: Principles of Economics

3-3† cr—at discretion of department, 1-2† may be offered for 4 cr each qtr; recommended for students with GPA of 3.00 or better

Honors section of 1-2†. 1H: Macro. 2H: Micro.

1Tf,w-2Tw,s† Principles of Economics

3-3† cr; prereq Math 40 or 13A or equiv; a substitute for Econ 1-2† for students with some background in mathematics

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; decision to purchase a house. Sources of consumer information; product testing agencies; government efforts to protect consumers.

40 Decision Making and Scientific Inference

3 cr; prereq Math 10 or §

Problems of decision making under uncertainty; applications to economics, statistical inference, and games of strategy.

UPPER DIVISION COURSES

50Af-Bw Economic Problems of American Economy

3-3 cr, §1-2, 1T-2T†, B-C; not available to economics majors for Upper

Division credit; offered 1969-70 and alt yrs

Supplies need for general education in economics for average citizen.

GROUP 2 AND 3 COURSES/Classified by area

Note—Courses in the Group 2 level are: Econ 62, 63, 65, 66, 65T-66T, 67, 68, 69, 75, 80, 101A, 103, 104, 111, 154, 160, 164, 170, 174, 184 (Honors sections are sometimes offered in the following: Econ 65, 66, 67, 68, 69, 75). All other courses described below are in Group 3. (Business Administration courses used as part of the major in economics count as Group 2 courses.)

General

80 Survey of Economic Ideas

3 cr; prereq 2 or equiv

Economic thinking from Adam Smith to J. M. Keynes; emphasis on impact of industrial revolution and business cycle on formation of theory.

90H Honors Course: Undergraduate Seminar in Economics

3 cr; prereq 66, 75 or equiv, economics major, sr, honors degree candidate, or §

Helps students integrate and apply material learned during their economics training.

101Af Foundations of Mathematics for Social Scientists

3 cr; prereq Math 10 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.

101Bw Introduction to Decision Theory

3 cr; prereq 101A or §

Elements of probability. Basic concepts in statistical decision theory. Relationship to game theory and other types of decision problems. Prediction and inference. Models underlying statistical analysis in economics and certain other fields.

120 Economics of Consumption

3 cr; prereq 65, 66 or §

Theories and research relating to saving and consumption; concept of saving; consumption function literature; forecasting of consumer spending; role of buying plans.

140 Economics of Location

3 cr; prereq 165, 166 or §; offered 1968-69 and alt yrs

Analysis of location of economic activity in relation to resources and markets. Effects of changes in transport costs. Problems associated with urban growth.

150A-B-C Current Economic Issues

3-3-3 cr (with § course may be taken more than once); prereq 65, 66 or equiv or §; offered when feasible

Current controversies over economic policy and problems that underlie controversies. Selected topics.

160 Comparative Economic Systems

3 cr, §160A; not available to econ majors; prereq 2 or equiv

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

160A Advanced Comparative Economic Systems

3 cr, §160; prereq 65, 66 or equiv or #
Functions of all economic systems: the market economy, liberal socialism, centrally planned economy. Analysis of American and Soviet economies.

170 Economics, Ethics, and Economic Philosophy

3 cr; prereq 2 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.

190f,w,s Readings in Economics

Cr ar; prereq consent of adviser and #
Areas useful to individual programs and objectives not available in regular course offerings.

Economic Theory**65f,w,s, 66f,w,s Intermediate Economic Analysis I and II**

3,3 cr; prereq 2 or #

65: Behavior of households, firms, and industries under competitive and monopolistic conditions; factors influencing production, price, and advertising decisions.

66: Determinants of national income, employment, and price level; attention given to aggregate consumption and investment.

65H Honors Course: Intermediate Economic Analysis I

3 cr; prereq 2 or equiv or #; recommended for students with GPA of 3.00 or better

66H Honors Course: Intermediate Economic Analysis II

3 cr; prereq 65 or 65H or equiv, or #; recommended for students with GPA of 3.00 or better

65T-66T Intermediate Economic Analysis

3-3 cr; prereq #Math 43 or #

A substitute for Econ 65, 66 and 75 for students with some background in mathematics.

75f,w,s Intermediate Economic Analysis III

3 cr; prereq 65 or 65H or equiv

Introduction to welfare theory. Applications of evaluative techniques to various market phenomena and government policies.

75H Honors Course: Intermediate Economic Analysis III

3 cr; prereq 65 or 65H or equiv, or #; recommended for students with GPA of 3.00 or better

135Af-Bw-Cs Foundations of Economic Analysis

3-3-3 cr; prereq 165, 166, Math 43 or equiv

Essentially substitute for Econ 176A,B, 185A,B, 215A for students with mathematics.

165 Elements of Economic Analysis: Firm and Household

3 cr, §65; prereq grad or #

Individual decision-making by households and by firms under conditions of monopoly, competition, and monopolistic competition.

166 Elements of Economic Analysis: Income and Employment

3 cr, §66; prereq grad or #

Determinants of national income, employment, and price level; aggregate consumption, investment, and asset holding.

176Aw Economic Analysis II: Income Theory

3 cr; prereq 166 or equiv or #

General equilibrium models from which may be determined real output, employment, price level, and rate of interest. Effects of government fiscal and monetary policies on these equilibrium values.

176Bs Dynamic Macroeconomics

3 cr; prereq 176A or equiv or #

Theories of pattern of movements over time of employment, incomes, and prices. Effects of various economic policies upon magnitude of fluctuation; stability of economy.

180A-B History of Economic Thought

3-3 cr; prereq 176A, 175 or #

A: Classical economists, Marx, and beginnings of neoclassical economics.
B: Development of neoclassical economics through 1930's. Origins of macro-theory.

185A-B-C Microeconomic Theory

3-3-3 cr; prereq 165 or equiv, Math 42 or equiv, or #; Math 55 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. Weekly problem workshops mandatory for 185A and 185B.

186 Income Distribution

3 cr; prereq 165, 166 or equiv

Statistics of personal and functional income distribution. Wages, rent, interest, and profit under pure and imperfect competition. Ag-

86 / Course Offerings and Major Requirements

gregative theories of distributions. Exploitation and maldistribution problems.

195A-B-C Decision-Making and Operations Analysis

3-3-3 cr; prereq 165, Math 32 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 and Statistics

111su Elements of Statistics

3 cr; prereq Math 10 or #; offered when feasible

Acquaints nonspecialist with basic concepts and methods of classical statistics. Problems of hypothesis testing and estimation.

121Af-Bw-Cs Theory of Statistics

3-3-3 cr; prereq Math 42 or ¶Math 42 for 121A, Math 43 or # for 121B

Normal and related univariate and multivariate distributions. Some large sample theory; law of large numbers. Likelihood methods in hypothesis testing and estimation; applications to regression and analysis of variance and covariance. Confidence intervals. Distribution-free methods.

131 Elements of Econometrics

3 cr; prereq 121C or ¶121C or #; offered when feasible

Statistical inference from models arising in economics and certain other fields. Least squares method, regression theory; relationship to simultaneous equation and factor analysis problems. Specification error. Identification. Time series. Problems of aggregation. Examples: production functions, demand functions, factor analysis.

181A,B,C Topics in Statistics

Same as Stat 181A-B-C

Labor Economics

62 Labor Economics

3 cr, §IR 52; prereq 2 or equiv

Introductory course dealing with 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.

102 Contemporary Labor Issues

3 cr; prereq 62 or equiv or #

Analysis of important labor problem areas. Current issues examined in light of their broader economic, legal, political, and social implications.

152 Economic History of Labor

3 cr; prereq 62 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.

172 Labor Market Behavior and Regulation

3 cr; prereq 62 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.

182 Economic Security

3 cr; prereq 62 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.

192A-B Wages and Employment

3-3 cr; prereq 62, 65, 66 or equiv

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.

Economic Development and Area Studies

63 Economics of Science and Technology

3 cr; prereq 2 or equiv

Relation 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.

103 Economic Development

3 cr, §103A; not available to economics majors; prereq 2 or equiv

Conditions necessary for increasing income; capital formation, measurement of economic growth, and problems of underdeveloped areas.

103A Economic Development

3 cr, §103; prereq 65, 66 or equiv or §

Conditions necessary for increasing income; capital formation, measurement of economic growth, and problems of underdeveloped areas.

143A-B Development of American Economy

3-3 cr; prereq 65, 66 or §; Green

Applications of economic theory and empirical methods to topics in American economic development, particularly during 19th-century period of accelerated growth and industrialization.

154 Economy of Europe

3 cr; prereq 2 or equiv; offered when feasible

Current internal and external economic problems and policies. Recent developments in production, public finance, income levels, and income distribution. Generally emphasizes different European country each time offered.

164 Economy of U.S.S.R.

3 cr; prereq 2 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 under 5-year plans. Internal and external economic policy. Public finance, income distribution, and economic incentives under Soviet system.

174 Economy of Latin America

3 cr, §174A; not open to economics majors; prereq 2 or equiv

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

174A Economy of Latin America

3 cr, §174; prereq 65, 66 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.

184 Economics of Asia

3 cr; prereq 2 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.

International Economics**104 International Economics**

3 cr, §104A, not available to econ majors; prereq 2 or equiv

Significance of foreign trade and investment. International payments and foreign exchange. Gold standard. International Monetary Fund and Bank. Arguments over tariffs and foreign aid policies.

104A International Economics

3 cr, §104, 114A; prereq 65, 66 or equiv or §

Significance of foreign trade and investment. International payments and foreign exchange. Gold standard. International Monetary Fund and Bank. Arguments over tariffs and foreign aid policies.

114Af-Bw-Cs International Trade and Payments Theory

3-3-3 cr; 104A cannot be substituted for 114A as prereq for 114B; prereq 65 for 114A...66, 67 for 114B

A: Gains from trade, tariffs, customs unions, impact of trade on wages.

B: Balance of payments disequilibrium, exchange rates, capital movements.

C: Relation of trade theory to growth and development, general equilibrium analysis.

134s U.S. Foreign Economic Policy

3 cr; prereq 104 or equiv; offered 1968-69 and alt yrs

Development of U.S. foreign economic policy in 20th century and current issues of U.S. foreign economic policy.

Monetary Economics and Public Finance**67f,w,s Money and Banking**

3 cr, §107; prereq 66 or equiv

Historical development, present pattern, and economic role of financial institutions: special emphasis on commercial banks, money supply, and Federal Reserve System.

67H Honors Course: Money and Banking

3 cr; prereq 66 or 66H or equiv; recommended for students with GPA of 3.00 or better

68f,w,s Elements of Public Finance

3 cr; prereq 65 and 66 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.

68H Honors Course: Elements of Public Finance

3 cr; prereq 65 and 66 or 65H and 66H or equiv; recommended for students with GPA of 3.00 or better

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107 Money, Banking and Monetary Policy

3 cr, §67; not available to economics majors or minors; prereq Econ 1-2† or equiv or §

Economic role of financial institutions with special emphasis on commercial banks, the money supply, and monetary policy.

157 Business Cycles

3 cr; prereq 66, 67 or equiv

Ups and downs of business: explanations of causes, statistical data on such fluctuations. Relationship of cycles to economic growth. Methods of forecasting. Examination of proposals for economic stabilization.

177Af-Bw Intermediate Monetary Economics

3-3 cr; prereq 66 or equiv

A: Monetary theory, determinants of value of money.

B: Principal problems of monetary policy.

178Af-Bw Public Finance

3-3 cr; prereq 65, 66 or equiv or §

Economic effects of various kinds and amounts of taxes, public debt, and public expenditures; resource allocation, employment, and income distribution.

188 State and Local Taxation

3 cr; prereq 68 or equiv; offered when feasible

Main problems of state and local finance and proposed solutions; interstate comparisons and coordination of practices and policies.

Industrial Organization

69f,w,s Government Regulation of Business

3 cr; prereq 65 or equiv for business or economics majors, suitable background

in law or political science for others, 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.

69H Honors Course: Government Regulation of Business

3 cr; prereq 65 or 65H or equiv for business or economics majors, suitable background in law or political science for others, or §; recommended for students with GPA of 3.00 or better

179Af-Bw Industrial Organization

3-3 cr; prereq 165 or equiv or §; offered 1968-69 and alt yrs

Structure of American industry, past and present; factors influencing industry structure. Theories of the firm and competition; quantitative implications, scale economies, and barriers to entry. Relation of industry structure to industry behavior; the firm and its rivals, the firm and its customers and suppliers.

189A-B Government Regulation of Market Behavior

3-3 cr; prereq 165 or equiv or §; offered 1969-70 and alt yrs

General restraints of trade, monopoly, standards of fair competition and regulation of entry into trades and professions. Regulation of public utility rates and services. Economic and legal analysis of federal regulations; state and local regulation.

Educational Psychology (EPsy)/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.

117 Basic Principles of Measurement

3 cr; prereq 116 or 216 or Psy 70 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.

140 Instruments and Techniques of Measurement

3 cr; prereq 110 or 117

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 93.)

● Major Sequence in Arts College—

Prerequisites:

Engl 21, 22, 23

Requirements:

A. Total of at least 31 cr in literature and language for entire sequence, comprising the following:

1. Engl 75, Chaucer; 55-56, Shakespeare; 162, Milton
2. 18 additional cr in Upper Division courses, of which at least 9 must be selected from this list:

108, 109, 110	147-148-149
117, 118, 119	168, 169, 170
126	187, 188, 189
135, 136	194, 195, 196
137, 138, 139	197, 198, 199
140-141	

Complete sequences, taken in order, are recommended.

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

Information about honors degrees in English may be obtained at the Honors Division office or at 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.

● **Requirements for a Teacher's Certificate**—Students interested in taking English as a major or minor subject in the College of Education should see the bulletin of that college for requirements.

General Education—The Department of English believes that all its courses numbered below 100 are properly regarded as courses in general education and are suitable for nonmajor students.

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LOWER DIVISION COURSES

Note—For courses in freshman English, see page 93.

21f,w, 22w,s, 23f,s Introduction to Literature

4,4,4 cr; prereq **

Chronological study of English literature with work on types of literature and literary ideas.

21: Medieval and Renaissance literature.

22: Milton, Restoration, 18th century.

23: Romantic movement and Victorians.

21H, 22H, 23H Honors Colloquium, Introduction to Literature

No cr; prereq concurrent registration in any regular section of 21, 22, 23, consent of honors adviser

37f, 38w, 39s Modern Literature

3,3,3 cr; for 37, §38 before 1965f...for 38, §37 or 39 before 1965f...for 39, §38 before 1965f; 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, and mainly 20th century. Short critical papers may be required.

37: Poetry.

38: Prose fiction.

39: Drama.

UPPER DIVISION COURSES

Engl 52, 53, 54; 55-56; 66-67, and 72-73-74 are open to Lower Division students who have a C average in the prerequisite courses. Other Upper Division courses are open to sophomores under the conditions explained at the beginning of Section II.

52f, 53w, 54s English Novel

3,3,3 cr, §117, 118, 119; prereq ††

52: Reading of novels by such writers as Defoe, Fielding, Sterne, Smollett, and Richardson.

53: Reading of novels by such authors as Jane Austen, Scott, the Brontës, Thackeray and Dickens.

54: Reading of novels by such authors as Trollope, George Eliot, Meredith, Hardy, Conrad, and Butler.

55f,w,s-56f,w,s Shakespeare

3-3 cr; prereq ††; students may not start with 56 except by Δ

55: Reading 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.

56: 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.

55H, 56H Shakespeare

3,3 cr; prereq †† and consent of English honors adviser

57f, 58w, 59s Topics in English and American Literature

3,3,3 cr; prereq ††

Topics will be annually specified in the *Class Schedule*.

60s Introduction to English Language

3 cr; prereq ** §165; may not be counted toward major in English in CLA except by students taking 34 or more Upper Division cr in English. How English exemplifies basic concepts of language with respect to inner structure, outer form, time, situation, and user.

61f, 62w, 63s Figures in English and American Literature

3,3,3 cr; prereq ††

Figures will be annually specified in the *Class Schedule*.

66f-67w Literature of the Bible

3-3 cr; prereq ††

Readings in *Old and New Testaments* from literary point of view. Selections from historical narratives, prophets, psalms, tales, wisdom literature, apocalypse.

** Must have fulfilled freshman English requirement.

†† Comp 1-2-3 or Comm 1-2-3 or Engl 1-2-3 and 5 additional credits; or Engl A-B-C; or 5 credits in 21, 22, 23.

- 72f,w-73w,s-74f,s American Literature**
3-3-3 cr, §130, 131, 132; prereq ††...72 for either 73 or 74, except for Ed minors...or ‡
- 72: Beginnings through Melville.**
- 73: Whitman through James.**
- 74: Crane to present.**
- 75f,w,s Chaucer**
4 cr; prereq ††
Readings of selections from *The Canterbury Tales* with introduction dealing with grammar and literary forms of 14th-century English.
- 77f, 78w, 79s Twentieth-Century British Literature**
3,3,3 cr, for 77, §142...for 48, §143...for 79, §144; prereq ††
Critical survey of major figures.
- Clas 80f Classical Epic in Translation**
3 cr, §Clas 180; prereq 9 cr in English literature beyond Engl C or in foreign literature, or consent of Classics department
- Clas 81w Greek Tragedy in Translation (Aeschylus, Sophocles, Euripides)**
3 cr, §Clas 181; prereq same as Clas 80
- Clas 82s Aristophanes and Roman Drama in Translation (Aristophanes, Menander, Plautus, Terence, Seneca)**
3 cr, §Clas 182; prereq same as Clas 80
- 90Hf,w,s Honors Course: Magna Honors Thesis**
3 cr; prereq candidacy for *magna cum laude* in English, Δ
- 91Hf,w,s-92Hf,w,s† Honors Course: Summa Honors Thesis**
3-3† cr; prereq candidacy for *summa cum laude* in English, Δ
- 93H Honors Thesis**
3 cr; prereq honors candidacy in English and consent of English honors adviser
- 97H Honors Seminar**
3 cr; prereq †† and consent of English honors adviser
- 98H Honors Seminar**
3 cr; prereq †† and consent of English honors adviser
- 100f,s Old English (Anglo-Saxon)**
4 cr; prereq ††
Introduction to sounds and grammar with some prose reading. Relation to modern English stressed.
- 102w Readings in Old English Prose and Verse**
3 cr; prereq 100
Critical reading of texts, and introduction to versification.
- 103s Beowulf**
3 cr; prereq 100
Introduction to the Old English poem, with reading of considerable portions of text.
- 104w Emerson and Thoreau**
3 cr; prereq ††
- 105f Hawthorne and Melville**
3 cr; prereq ††
- 106s Whitman and Mark Twain**
3 cr; prereq ††
- 108f, 109w, 110s Romantic Poetry and Prose**
3,3,3 cr, for 108, §109 before 1966f; prereq ††
- 108: Blake, Wordsworth, Coleridge, and others.**
- 109: Scott, Byron, Lamb, DeQuincey, and others.**
- 110: Shelley, Keats, Hazlitt, and others.**
- 111w Henry Adams and Theodore Dreiser**
3 cr; prereq ††
- 112 The Romantic Tradition**
3 cr; prereq ††
- 113s American Short Story**
3 cr; prereq ††
Historical examination of American short story from 18th century to present.
- 114f, 115w, 116s Topics in English and American Literature**
3,3,3 cr; prereq ††
Topics will be annually specified in the *Class Schedule*.
- 117f, 118w, 119s English Novel: Defoe to Hardy**
3,3,3 cr, §52, 53, 54; prereq ††
- 117: The 18th century.**
- 118: Early and mid-19th century.**
- 119: Late 19th and early 20th century.**
- 120f-121w Techniques of Poetry**
3-3 cr; prereq ††
Certain technical aspects of poetry in relation to poetic meaning.

†† Comp 1-2-3 or Comm 1-2-3 or Engl 1-2-3 and 5 additional credits; or Engl A-B-C; or 5 credits in 21, 22, 23.

‡‡ Five credits in literature, English or American, exclusive of freshman English.

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- 123f, 124w Techniques of Novel**
3,3 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 101, 102, 103 for writing of fiction.
- 126f Restoration and 18th-Century English Drama**
3 cr; prereq 56
Heroic play, tragedy, comedy of manners, sentimental comedy.
- 127w Drama from ca. 1800 to ca. 1920**
3 cr; prereq 56
Beginnings of modern realism, naturalism, and expressionism in English and Continental drama.
- 129s Drama Since ca. 1920**
3 cr; prereq 56
Survey of chief dramatists, English, American, and Continental.
- 130f, 131w, 132s American Literature**
3,3,3 cr, §72-73-74; prereq ††
- 130:** Beginnings through Melville.
131: Whitman through James.
132: Crane to present.
- 133 American Social Dialects**
3 cr; Harold Allen
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.
- 134s Origins of American Naturalism**
3 cr; prereq ††
- 135, 136 Advanced Shakespeare I and II**
3, 3 cr; prereq 56
Intensive study of a few plays.
- 137f, 138w, 139s Victorian Literature**
3,3,3 cr; prereq ††
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.
- 140w-141s Advanced Chaucer**
3-3 cr; prereq 75 or equiv
Review of *The Canterbury Tales*; reading of longer poems.
- 147f-148w-149s Middle English Literature Exclusive of Chaucer**
3-3-3 cr; prereq 75 and 100 or #
Leading genres of Middle English literature.
147: Devotional prose and lyric verse.
148: Religious allegory and the drama.
149: Epic and romance.
- 154w, 155s American Novel**
3,3 cr; prereq ††
History of American novel from beginning to present.
- 156s American Drama**
3 cr; prereq ††
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.
- 157f, 158w American Poetry**
3,3 cr; prereq ††
Critical survey of American poetry from Anne Bradstreet to present; some attention to historical and intellectual backgrounds; emphasis upon major figures.
- 159, 160 Early American Literature**
3,3 cr; prereq ††
Critical survey: emphasis upon principal writers and major cultural themes, from Puritans to Transcendentalists.
- 162f,w,s Milton**
3 cr; prereq 21 or 26
Minor poems: *Areopagitica*, *Paradise Lost*, and *Samson Agonistes*.
- 165f,w Structure of Modern English**
3 cr; prereq ††
Introductory study of English phonemics, morphemics, and syntax.
- 166s History of English Language**
3 cr; prereq ††
Historical influences upon, and changes within, language as both popular and literary medium of communication.
- 167 Modern Rhetorical Theory**
3 cr; prereq ††
Survey of modern theory and research; discussion of relationship between modern and classical theory, and between rhetorical theory and grammatical and semantic theory. Not a course in composition.
- 168 Medieval Drama**
3 cr; prereq ††
- 169 Tudor and Elizabethan Drama Exclusive of Shakespeare**
3 cr; prereq ††
Interludes, moralities, academic and court plays; plays of Kyd, Marlowe, Lyly, Greene, and Peele.
- 170 Jacobean and Caroline Dramas Exclusive of Shakespeare**
3 cr; prereq 56 or 169
Selected plays of Jonson, Webster, Middleton, and others.

†† Five credits in literature, English or American, exclusive of freshman English.

173 Dr. Johnson and His Circle

3 cr; prereq †† and Δ
Boswell; Johnson's influence on his contemporaries.

174s American English

3 cr
Developing distinctiveness of English language in America; its relationships to American cultural patterns; significant regional variations in vocabulary, pronunciation, and grammar; introduction to field methods of American dialect geography; access to unpublished collections of *Linguistic Atlas of Upper Midwest*.

175s Chaucer

4 cr, §75 or equiv; prereq 100
Reading of *The Canterbury Tales* with introduction dealing with grammar and literary forms of 14th-century English.

176f, 177w, 178s Figures in English and American Literature

3,3,3 cr; prereq ††
Figures will be annually specified in the *Class Schedule*.

179 Classics of Literary Criticism

3 cr; prereq ††

181 Modern Literary Criticism

3 cr; prereq ††
Major texts and movements in modern literary criticism; examination of a few of more important historical documents from earlier centuries.

183f Poetry of T. S. Eliot

3 cr; prereq ††

184f, 185w, 186s Form and Idea in Dramatic Literature

3,3,3 cr; prereq ††...55-56 recommended
Dramatic types, in chronological sequence; analytical reading of selected representative plays.

184: Tragic and religious drama (classical, medieval, Renaissance, and modern); theories of tragedy.

185: Comedy (classical, Renaissance, and modern); theories of comedy.

186: Experimental and nonrealistic drama.

187f, 188w, 189s Eighteenth-Century Literature

3,3,3 cr; prereq ††
Survey of English literature from 1700 to 1790. Parallel readings and critical essays. Graduate students will submit term paper each quarter.

190f, 191w, 192s Twentieth-Century Writers

3,3,3 cr; prereq ††
In each quarter, at least two such writers as the following will be studied: Conrad, James, Joyce, Woolf, Lawrence, Forster, Hemingway, Fitzgerald, Faulkner, Shaw, O'Casey, Frost, Pound, Auden. Authors will vary from year to year, and will be annually specified in the *Class Schedule*.

193s Poetry of W. B. Yeats

3 cr; prereq ††

194f, 195w, 196s Elizabethan Prose and Verse

3,3,3 cr; prereq ††
194: From beginning of Tudor period to about 1580.

195: From early work of Spenser and Sidney to mid-90's.

196: Decade centering in last year or two of Queen's reign.

197f, 198w, 199s Seventeenth-Century Literature

3,3,3 cr; prereq ††
197, 198: Prose and nondramatic poetry of century to 1660.
199: Dryden and his contemporaries.

Freshman English; Composition

● **Major and Minor Sequences**—There is no major or minor sequence in composition. A half-minor (9 cr in Comp 101-102-103) is permissible under the usual Arts College rules (see Section I, Upper Division Programs), and may be taken along with a major in English.

● **Concurrent Registration in Freshman English and in Composition Courses**—Students may not register for more than one of these courses at a time.

● **Important Note**—No student may register for any freshman course in English composition or communication without presenting a "Memorandum on

†† Five credits in literature, English or American, exclusive of freshman English.

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Placement" as evidence of his assignment. On the basis of various factors, including examinations, the student is assigned to one of five 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 English 1-2-3 or Comm 1-2-3), and he is eligible to take any course for which English 1-2-3 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 10H-11H-12H, and he is given 6 cr of advanced standing in composition.

Category 2. He must take Engl 1-2-3 or Comm 1-2-3.

Category 3. He must take Comp X; and he must, after passing it, take Engl 1-2-3 or Comm 1-2-3.

Category 3A. Need not be explained here.

Engl 1-2-3 is a 9-cr course in composition, using literature as the reading material and the subject matter for composition; Comm 1-2-3 (offered in one of the interdisciplinary programs), a 12-cr course in composition and speech. The student may satisfy the Group A 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 X 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 or 2 may, upon his instructor's recommendation, be exempted from any further requirement in freshman English.

LOWER DIVISION COURSES

Comp Xf,w,s** Preparatory Composition

No cr; prereq assignment to Category 3 or 3A (see Important Note above)

Remedial course in composition.

1f,w-2w,s-3f,s** Freshman English

3-3-3 cr; prereq assignment to Category 1, 1A or 2

Course in composition in which literature serves both as reading material and as subject matter for writing. Not course in history of literature or in literary criticism. Satisfies Group A requirement for graduation.

10Hf-11Hw-12Hs** Honors Course: Freshman Literature and Composition

5-5-5 cr; prereq assignment to Category 1A (see Important Note above)

Combined course in composition (6 cr) and literature (9 cr) for exceptionally able student.

Comp 27f,w,s-28f,w,s** Advanced Writing

3-3 cr; prereq completion of, or exemption from, fr English requirement; after 1st day of classes students must have Δ to attend class

27: (a) Expository Prose; (b) argumentation
28: Narrative and descriptive writing.

** Any student absent the 1st 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.

UPPER DIVISION COURSES

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

Comp 101f, 102w, 103s Writing of Fiction and Poetry
 3,3,3 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. The several roles involved in effective family living are the subject of analysis; e.g., marital, parental planning, and decision-making roles as consumers and as participants in labor force. The courses are designed for students who will specialize in other subjects.

LOWER DIVISION COURSES

1f,w,s Dynamics of Dating, Courtship, and Marriage

3 cr; Huyck, Kokosh, Holland, Nisker, Torbett

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.

1Af,w,s Dynamics of Dating, Courtship, and Marriage

3 cr, §1; Holland, Huyck

(See FamS 1) Designed for Upper Division, engaged or married students.

15f,w,s The Home and Its Furnishings

3 cr (cr does not count toward BA degree); Ludwig

Present-day housing problems; choice of location; house plans as they affect family living; exterior and interior design; choice of appropriate furnishings and accessories; costs of furnishings.

Econ 20s Consumer Economics

3 cr; Maynes

For course description, see Econ 20 under Department of Economics.

25f,w,s 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.

50s Educated Woman in United States

2 cr (cr does not count toward BA degree); limited to 25 students, with preference given to jr and sr women with 3.00 GPA or above; prereq #: Randolph and guest lecturers

Biological and psychological differences between men and women; legal and economic status of women; educational needs and

problems of women; parental roles; occupational choice.

100f,w,s Human Sexual Behavior

3 cr; prereq 15 cr in psychology or sociology; Neubeck

Nature of sexual functioning; sexual development, ethics and attitudes, research problems.

Fine Arts/see Art

Foreign Study (FoSt)/SPAN

UPPER DIVISION COURSES

161su-162su Seminar for Foreign Study

6-6 cr; prereq approval before December by a faculty selection committee (grad students must also have adviser's approval); for further information, contact Professor T. G. Stavrou in History Department

Directed field study (SPAN program) in selected foreign countries, investigating current economic, political, educational, cultural, and religious patterns of life. Each student studies his host country and his project during year preceding summer abroad, and writes comprehensive report upon returning.

French/see Romance Languages

Genetics and Cell Biology/College of Biological Sciences

Genetics (Gen)

UPPER DIVISION COURSES

66f,w,s Principles of Genetics

3 cr; prereq Biol 2 or 49

Mechanisms of heredity, their implications for biological populations and applications to practical problems.

68s Human Genetics and Social Affairs

3 cr; not open to students who have had Biol 2 or equiv; for students in programs not directly related to biological sciences; Anderson, Reed

Introduction to genetics with special attention to human heredity and with emphasis on behavior and other topics of social concern.

Biol 70 Principles of Genetics (see Biology listings)

Biol 71 Genetics Laboratory (see Biology listings)

99 Special Projects

Cr ar; prereq 66 or equiv and #

Individual work on selected topics or problems.

140f,s Intermediate Genetics I

3 cr; prereq 66 and Biol 60 or equiv, ¶71; Snyder, Woodward

Structure and function of genetic elements at molecular and cellular levels. Organiza-

tion and replication of genetic material, mutagenesis, recombination, genetic code and protein synthesis, episomes, suppression, complementation and regulation.

141w Intermediate Genetics II

3 cr; prereq 66 and Biol 60 or equiv, ¶71; Enfield, Wade

Selected topics in population and quantitative genetics, cytogenetics, immunogenetics, and developmental and physiological genetics.

175s Human Genetics

3 cr; prereq 66 or #; Reed

Inherited characters in man, particularly in relation to medicine, with some reference to relation of genetics to marriage and to social conditions.

176w Problems and Methods in Human Genetics

3 cr; prereq 175 and PubH 110 or equiv and #; Anderson

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.

Cell Biology (CB)

UPPER DIVISION COURSES

51f Cell Biology

3 cr, §Zool 51; prereq Biol 2 or 49, GeCh 4; Hooper

Dynamic aspects of cell structure and macromolecular organization; emphasis on current research.

118f General Cytology

5 cr, §Bot 118, Zool 164; prereq 10

cr in biology, botany or zoology, elementary genetics or §; Cunningham
Introductory analysis of structure and related functions of intact cells and protoplasmic systems. Nature of cytoplasm, nuclei, and cell walls. Relationship of cytological data to life cycles, cytogenetics, cytotoxicity, and cytochemistry.

Geography (Geog)

● Major Sequence in Arts College—

Prerequisites: Two courses from geography 1, 4, 41

Requirements:

A. 30 cr in Upper Division courses in geography including:

1. One field course (131A, 152A, 157A, 165A, 168A, 171A, 184A)
2. Two technique courses (81, 87, 181, 182, 183, 184, 185, 187, 188)
3. Two regional courses (61, 63, 64, 65, 66, 67, 68, 73, 74, 101, 102, 103, 106, 111, 112, 115, 118, 120, 121, 126, 131, 133, 134, 137, 141, 143)
4. Two topical courses (71, 78, 79, 151, 152, 154, 157, 158, 163, 165, 167-168, 171, 175)
5. One course in geographic thought (160, 162, 197)

● Requirements for a Teacher's Certificate (applicable only to students in the College of Education)—

Major requirement: Two courses from geography 1, 4, 41. Elective courses in geography—at least 29 cr, including one course in each of the following areas: (a) Anglo-America, (b) Europe, (c) Soviet Union, (d) Asia, (e) Africa, (f) Latin America. A total of 39 cr in geography.

Because of the geography teacher's need for a broad social studies background, geography majors and minors must complete a substantial number of courses in other social science fields. For further details the student should see the *College of Education Bulletin*.

Minor requirements: 28 cr of geography, including two courses from 1, 4, and 41 plus one course in each of three of the six areas listed above for geography major.

General Education—In the Lower Division, Geography 1, 4, and 41 deal with world patterns of resources, population, and production which are an es-

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sential 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

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.

1Hf,w,s Honors Course: Physical Geography

5 cr; prereq #
Students attend lectures in Geog 1 and meet with lecturer 2 hours per week in honors discussion section.

4f,w,s Human Geography

5 cr; Broek, Hart, Schwartzberg, Webb
Geography of population and principal ways of life; capacity of earth for future population.

4Hf,w,s Honors Course: Human Geography

5 cr; prereq #
Students attend lectures in Geog 4 and meet with lecturer 2 hours per week in honors discussion section.

41f,w,s Economic Geography

5 cr; Adams, Rice
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.

41Hf,w,s Honors Course: Economic Geography

5 cr; prereq #
Students attend lectures in Geog 41 and meet with lecturer 1 hour per week in honors discussion section.

UPPER DIVISION COURSES

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

Regional Studies

61f 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.

63w Soviet Union

3 cr, §107; Adams
Character of and bases for regional diversity of physical resources, population, agriculture, manufacturing, and transportation in U.S.S.R.

64w Africa

3 cr, §old 118; 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.

65w Latin America

3 cr; Barrett, Mather
Survey: major features of physical and human geography of Latin America.

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.

67f Geography of Minnesota

3 cr; Borchert
Survey of physical resources, population, and commercial production. Field trips in eastern Minnesota.

68 East Asia

3 cr, §122; 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.

73f Geography of Tropics

3 cr; prereq 5 cr in geography or #; offered 1969 and alt yrs; Barrett
Investigation of physical and human geography of tropics and bearing of geography on current development.

74f 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.

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.

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.

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.

106s Regions of U.S.S.R.

3 cr; prereq 63 or #; 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.

111w Spatial Organization of Medieval Europe

3 cr; prereq 5 cr in geography or 61 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.

112s Spatial Organization of Modern Europe

3 cr; prereq 5 cr in geography, 61 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.

115w Mediterranean Region

3 cr, §105; prereq 5 cr in geography or #; Webb

Physical and human geography of lands adjacent to Mediterranean Sea: Greece, Italy, Spain, Portugal, and southern France.

118 Africa: Selected Topics

3 cr; prereq 64 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.

120f 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.

121w Southeast Asia

3 cr; prereq 10 cr in geography or #; Broek

Physical and human geography of Burma, Thailand, Indochina, Malaya, Indonesia, and Philippines; geographic aspects of population pressure, development of resources, and international relations.

126w Australia-New Zealand-Oceania

3 cr; offered 1968-69 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.

131s Historical Geography of North America

3 cr, §114; Lukermann

Sequential analysis of settlement and economy in changing environment and resource patterns of North America.

131As Historical Geography of North America—Field Course

2 cr, §114A; prereq ¶131 or #; Lukermann

Sequential analysis of settlement and economy in changing environment and resource patterns of Minnesota and contiguous states.

133s Western United States

3 cr, §112; Mather

Physical and human resources of western United States.

134f Eastern United States

3 cr, §113; Hart

Physical and human resources east of Great Plains.

137s Canada and Alaska

3 cr, §111; prereq 10 cr in geography or #; Mather

Analysis of physical and human geography. Both internal and external areal relationships.

141s Middle America

3 cr, §109; Barrett

Physical and human geography of West Indies and mainland from Mexico to Colombia.

100 / Course Offerings and Major Requirements

143f South America

3 cr, §110; Mather

Survey of physical resources, population, agriculture, manufacturing, and transportation in countries of South America.

Topical Studies

71f,w,s Maps and Map Interpretation

3 cr, §60; 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.

78w Geography of Industrialization

3 cr; prereq 41 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.

79s North American Resource Management

3 cr; prereq 1 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.

151f Climatology

3 cr, §133; prereq 1 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.

152w Advanced Climatology

3 cr, §134; prereq 151 or §; Barrett, Skaggs

Detailed study of heat and moisture balance of the earth; reception and disposal of precipitation and energy in local environment.

152A Advanced Climatology: Field Course

3 cr, §135, 153; prereq 152 or §; Barrett, Skaggs

Laboratory work and field observations in quantitative description and analysis of climate. Particular emphasis on north central United States.

154w Dynamic and Synoptic Climatology

3 cr; prereq 151 or §; Skaggs

Application of dynamic and synoptic meteorological theory to broadscale climate genesis; introduction to explanatory climatological models.

157f Landform Geography

3 cr; prereq 1 or §; Brown

Detailed consideration of landform resources in regional setting; emphasis on North America.

157As Landform Geography: Field Course

3 cr; prereq 157 or §; Brown

Directed study of field techniques of landform and process analysis. Field study in Twin Cities and neighboring areas.

158w Geomorphometry

3 cr; prereq 157 or §; Brown, Skaggs

Analysis of numerical methods for representation of landform shape and geomorphic processes and their theoretical, statistical, and descriptive applications.

160f Development of Geographic Thought

3 cr, §197; prereq sr, 15 cr in geography; Broek

Objectives, subdivisions, concepts, and methods of geography; special reference to different schools of geographic thought as expressed in literature of last century.

162s Geographical Exploration and Discovery

3 cr, §100; 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.

163s Political Geography

3 cr, §143; prereq 4 or §; Schwartzberg

Scope and methods of political geography; analysis of selected concepts, problems, and areas.

165f Urban Geography

3 cr, §153; prereq 4 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.

165Af Field Course

3 cr, §170; prereq 15 cr in geography; Webb

Concepts and techniques of field work. Saturdays devoted to field study in eastern Minnesota and neighboring areas.

167w-168s 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.

168As American Cities—Field Study

3 cr, §169; prereq 168 or ¶168; Borcherdt

Directed field study of urban land use problem in Twin Cities and vicinity. Excursion to another selected Midwestern metropolitan area.

171f Geography of Economic Localization

3 cr, §152; prereq 41 or #; Adams, Lukermann

Analysis of localization of economic activity, circulation of resources, and process of industrial regionalization in economics of world.

171Af Geography of Economic Localization—Field Study

3 cr; prereq ¶171 or #; Adams, Lukermann

Analysis of localization of economic activity, circulation of resources, and process of industrial regionalization in economy of Minnesota and contiguous states.

175s Rural Geography

3 cr, §150; Mather

Geographic components and assemblages of rural settlement. World patterns and geographic problems of rural settlement on American scene.

Geographical Techniques

81f,w,s Introduction to Cartography

3 cr, §70; 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.

87f Quantitative Methods in Geography

3 cr, §73; prereq college math, statistics or #; Adams, Hart, Skaggs

Applications of quantitative techniques to problems of classification and measurement, areal association and sampling, and comparative regional analysis. Case examples primarily from geographical literature with assigned problems employing statistical sources commonly used by geographers.

181w Statistical Cartography

3 cr, §138; prereq 81, QA 5 or equiv, 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.

182s Advanced Cartography

3 cr, §140; prereq 181 or #; Brown, Hsu, Porter

Advanced statistical mapping techniques; selected topics in cartography: visual per-

ception, automation, spatial statistics, and history of cartography.

183f 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 non-visible portion of electromagnetic spectrum.

184s Air Photo Interpretation

3 cr, §139; prereq 81 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.

184As Air Photo Interpretation—Field Course

3 cr, §139A; prereq 184 or ¶184; Brown, Porter

Directed study in use of air photos in the field. Emphasis on field identification, mapping and interpretation, and on development of photo logic and photo keys. Field study in rural, urban, and industrial landscapes in Twin Cities and neighboring areas.

185s Source Materials for Geographic Research

3 cr, §165; prereq sr, 15 cr in geography; Wolter

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.

187w Quantitative Research Design

3 cr, §Soc 187; prereq 87, Soc 45 or 80, or #; Adams, Skaggs

Formulation of quantitative problems in social sciences for hypothesis testing and data processing; applications and use of tabulating equipment and computers for projects selected by students.

188s Area Sampling and Analysis

3 cr, §Soc 188; prereq 87, Soc 45 or 80, or #; Adams, Skaggs

Design and selection techniques for areally-sampled information in social science research; evaluation of census, field and map methods for error control; literature survey and individual student project.

Directed Studies

90Hs Undergraduate Honors Seminar

3 cr; prereq 10 cr in geography, 3.00 GPA and #

Supervised investigation of selected topics.

102 / Course Offerings and Major Requirements

91Hw Undergraduate Honors Seminar

3 cr; primarily for juniors; prereq 10 cr in geography, 3.00 GPA and #
Supervised investigation of selected topics.

92H Undergraduate Honors Seminar

3 cr; primarily for seniors; prereq 10 cr in geography, 3.00 GPA and #
Supervised investigation of selected topics.

190f,w,s Directed Readings

1-3 cr; prereq sr

191Af, 191Bw, 191Cs (old 191) Institute in Geography

9 cr; prereq secondary school teachers 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.

193 Topics in Geography

3 cr; prereq sr or grad and Δ
Special topics and regions offered by visiting professors in their research fields.

196s Proseminar: East and South Asia

3 cr, §Anth 196, Pol 196, Ortl 196, and Hist 196; prereq sr; integrating course for students majoring in East and South Asian area studies program; interdepartmental staff

197f Proseminar in Development of Geographic Thought

3 cr, §160; prereq sr, 15 cr in geography with B avg overall, or #; Broek Objectives, subdivisions, concepts, and methods of geography; special reference to different schools of geographic thought as expressed in literature of last century.

Geology and Geophysics (Geo)/School of Earth Sciences, Institute of Technology

● Major Sequences in Arts College

- A. GeCh 24-25, 6, or 4-5†, 6
- B. Math 15, 42-43, 44, 55
- C. Phys 7-8-9
- D. Biol 1-2† or Phys 50, 51
- E. Geo 11, 22, 62, 63, 64, 65, 140
- F. Geo 100
- G. Geo 66, 142 or 170, 171, or 66, 149

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 52, 121, OrCh 61, 62, Geo 105
- B. Gen 66, Zool 71, Biol 80, Zool 96, OrCh 61, 62, Geo 105
- C. PCh 101, 102, 103 (or 104) or PCh 107-108, Geo 142
- D. Math 106, 131A-131B, Phys 100-102-104
- E. Geo 115, 128, 131, 149, CE 101, 104

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.

Geo 1, 2 and 62 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.

● **Requirements for a Teacher's Certificate**—For the specialized curriculum in earth science see the *College of Education Bulletin*.

LOWER DIVISION COURSES

1f,w,s Physical Geology

5 cr; prereq high school physics and chemistry recommended; 3 lect hrs, one 2-hr lab, 1 rec hr per week; Matsch, 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.

2f,w,s Historical Geology

4 cr; prereq 1 or 11; 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.

11f 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.

22w Introductory Historical Geology

5 cr; for prospective majors and others desiring more intensive course; prereq 11 or #; 3 lect hrs, 1 rec hr, and two 2-hr labs per wk; Bright, Swain

Intensive sequence.

UPPER DIVISION COURSES

62s Introductory Mineralogy

5 cr; prereq 1 or 11 or #, 1 term college chemistry, Math 15; 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.

63f Introductory Structural Geology

4 cr; prereq 62 or 162 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.

64w Introductory Sedimentology and Stratigraphy

3 cr; prereq 62; 2 lect and 3 lab hrs per wk; Graf, Swain

Sedimentary processes and products with particular reference to modern sedimentary environments; principles of physical stratigraphy, correlation, facies, tectonic control, classification of stratigraphic units.

65 Introductory Field Geography

2 cr; required of and restricted to geology, geophysics, and geological engineering majors; prereq 62, 63 or #; 1 lect-rec and 4 field hrs per wk

Methods used in geologic field work and their application to problems in Minnesota geology.

99f,w,s 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.

100 Field Geology

9 cr; restricted to students majoring in geology, geophysics, and geological engineering; prereq 63, 65 or #

Measurement of stratigraphic sections; study of fossils and igneous, sedimentary, and metamorphic rocks. Geological surveying on serial photographs and topographic maps. Preparation of geologic maps and cross sections. Study of structural and geomorphic features and geologic setting of mineral deposits.

101 Field Geology in Minnesota

2 cr; primarily for majors in Earth Science in College of Education; prereq 63

Study of representative field areas in Minnesota to include igneous, metamorphic, sedimentary, and glacial features. Field observations correlated by use of geologic maps.

104 / Course Offerings and Major Requirements

103f,w,s Problems in Geology and Geophysics

1-6 cr; prereq #

Individual research in laboratory or field problems at Upper Division or graduate levels.

104 Advanced General Geology

3 cr; open to science majors in any field with supplemental reading by non-geologists; prereq #; offered on demand
Considers central problems in modern and classical geology through seminar-type discussion, evaluation of professional publications, and special projects.

105s Introduction to Paleontology

5 cr; prereq 2 or 22 or #; Sloan

Introduction to morphology and classification of major fossil groups.

106 Invertebrate Paleontology

5 cr; prereq 105; 3 lect and 4 lab hrs per wk; offered on demand; Bright

Detailed studies of morphology, classification, and ecology of selected groups of invertebrate fossils.

107f Vertebrate Paleontology I

5 cr; prereq 105 or Zool 53 or 122; Sloan

Morphology, evolution, and stratigraphic distribution of fossil fish, amphibians, reptiles, and birds.

108w Vertebrate Paleontology II

5 cr; prereq 107 or Zool 53 or 122; Sloan

Morphology, evolution, and stratigraphic distribution of fossil mammals.

109Csu Physical Geology for Teachers

4 cr, §1, 11, old Geo 1, Geo A; only for students holding degrees in education; prereq 1 term college chemistry or physics

Introduction to scientific methods and nature of the earth. Survey: main features of physical world and processes that have evoked them.

110w Sedimentology and Stratigraphy

3 cr, §64 or equiv; prereq 62; 3 lect and 2 lab hrs per wk; Graf, Swain

Sedimentary processes and products with particular reference to modern sedimentary environments; principles of physical stratigraphy, correlation, facies, tectonic control, classification of stratigraphic units.

111s Stratigraphy

3 cr; prereq 110; 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.

112f Micropaleontology

3 cr; prereq 105; Swain

Biology and paleontology of microorganisms of geologic importance including Foraminifera, Radiolaria, flagellate Protista, Diatomaceae, Characeae, Ostracoda, and conodonts.

115s Geomorphology

4 cr; prereq 2 or 22, Math 10 or 15 or #; Geo 62 and Math 22A recommended; 3 lect and 2 lab hrs per wk; Hooke

Origin and evolution of landforms in temperate, arctic, desert, and tropical regions in different geologic settings. Effects of structural history and climatic change in landform development. Relations of geomorphic processes to soil formation and engineering problems. Field trips; term paper or field project.

116f Glacial Geology

3 cr; prereq 2 or 22; Wright

Physics of modern glaciers. Glacial erosion and deposition. Stratigraphy and chronology of Pleistocene in glacial and nonglaciated areas.

117w Pleistocene Geology

3 cr; prereq 116; Wright

Problems in Pleistocene history of glaciated and nonglaciated areas, particularly North America, Europe, and the Mediterranean. Relation of Pleistocene climatic changes to soils, biogeography, and archaeology. Pollen analysis.

118f Problems in Geomorphology

3 cr; prereq 115; offered 1969-70 and alt yrs; Hooke

Detailed study of selected geomorphic processes. Emphasis on fluvial processes and arid region geomorphology.

119 Glaciology

3 cr; prereq Math 32 or equiv or #; offered 1968-69 and alt yrs; Hooke

Theories of glacier flow. Internal structures and heat flow in glaciers. Reading assignments, problems, term paper.

120f Structural Geology

3 cr, §63 or equiv; prereq 62 or 162 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.

121w Advanced Structural Geology

3 cr; prereq 63 or 120

Fundamental problems and genesis of secondary structural features; detailed analysis of typical examples. Comprehensive term paper required for graduate credit.

122Csu Historical Geology for Teachers

4 cr, §old Geo 2, B, Geo 2, 22; only for students holding degrees in education; prereq 1 or 11 or 109C 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.

125w Sedimentary Geochemistry

4 cr; prereq PCh 103 or §; 3 lect and 2 lab hrs per wk; Graf

Properties of bulk and adsorbed water. Phase relations from electrode measurements. Thermodynamic and kinetic implications of defective crystal structures. Stable isotope studies.

126s Sedimentary Petrology

4 cr; prereq 64 or 110 or §; 3 lect and 2 lab hrs per wk; Graf

Mineralogy, textures, and structures of sedimentary rocks. Role of tectonic framework. Differential effects of weathering and transport. Modern classification schemes.

128f Limnology

4 cr, §Ecol 138; prereq GeCh 5 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.

131s Ground-Water Geology

3 cr; prereq 1 or 11, Math 23A, 1 qtr physics and chemistry, or §

Origin, occurrence, and movements of ground water. Characteristics of major aquifers and aquitards. Exploratory investigations. Hydrogeologic units and boundaries. Principles and theoretical aspects of recharge. Quality of ground-water supplies.

140f Mineral Systems I

3 cr; prereq 62 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.

141 Optical Mineralogy and Petrography

4 cr; primarily for non-geology graduate students; prereq 62 or §; 3 lect, 4 lab hrs per wk; Grant

Behavior of isotropic and anisotropic media in polarized light. Optical properties of minerals and their determination. Introduction to petrography.

142s Mineral Systems II

3 cr; prereq 66 or 141; PCh 102 or 108, Math 31; Grant

Petrology; phase equilibria, mineral and rock associations, textures and structures developed through igneous and metamorphic processes. Laboratory and term paper.

145f Phase Equilibrium in Mineral Systems

3 cr; prereq 141, PCh 108 or 103; offered 1968-69 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.

146w Igneous Petrology

3 cr; prereq 145; offered 1968-69 and alt yrs; Grant, Phinney

Igneous processes in light of experimental data and theory. Discussion of classical studies of igneous rock associations. Term paper required.

147s Metamorphic Petrology

3 cr; prereq 146; offered 1968-69 and alt yrs; Grant, Phinney

Metamorphic processes in light of experimental data and theory. Discussion of classical studies in metamorphism. Term paper required.

149 Introductory Geochemistry

3 cr; prereq GeCh 6, PCh 101 or 107 or §; Hall, Graf

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 hydrothermal ore deposits.

150f General Geochemistry

3 cr; prereq PCh 102 or 108 or §; Murthy

Introduction to some basic principles and data of geochemistry, origin and cosmic abundances of elements, structure and composition of the earth, and geochemistry of some major elements in earth's crust and mantle.

151w Nuclear Geology

3 cr; prereq 142, 150 or §; offered 1968-69 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.

152w Problems in Geochemistry

2 cr; prereq 151 or §; offered 1969-70 and alt yrs; Murthy

Selected topics.

106 / Course Offerings and Major Requirements

155w-156s Mineral Deposits

3-3 cr; prereq 63 or 120, 142 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.

157f Mineral Fuel Deposits

3 cr; prereq 64 or 110, 63 or 120, or #; Swain

Origin and distribution of petroleum and coal deposits; source minerals, reservoir rocks and structures, stratigraphic distribution of important deposits.

160w X-Ray Mineralogy

3 cr; prereq 140 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.

161s Single Crystal X-Ray Diffraction

2 cr; prereq 160 or #; Zoltai

Introduction to principles and practice of single crystal x-ray diffraction. Lattice and space group determination. Introduction to crystal structure determination.

162s Mineralogy

4 cr, §62; not open to geology, geophysics and geological, mineral and metallurgical engineering majors...open to majors in College of AFHE and post-grad students in education; prereq 1 or 11 or #; 1 term college chemistry, Math 15; 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.

163s Electron Microprobe Analysis

2 cr; prereq PCh 103 or Phys 51 or Geo 160 or #; Weiblen

Introduction to theory of electron optics, review of x-ray fluorescence. Electron microprobe analysis with mineral and pure element standards.

170f Introduction to Earth Physics

3 cr; prereq 2 or 22, Phys 9 or 23; Mooney

Physics of the solid earth; evidence and data on origin, age, size and shape, internal constitution, thermal history, gravity, and magnetic fields.

171w Introduction to Earthquake Seismology

3 cr; prereq 63 or 120, or #; Braslau

Physics and geology of earthquakes; causes, effects, distribution, seismic waves.

172s Introduction to Exploration Geophysics

3 cr; prereq 2 or 22, Phys 9 or 23; Mooney

Principles of exploration by gravity, magnetic, seismic, and electrical measurements.

175s Principles of Gravity and Magnetic Exploration

3 cr; prereq 1 or 11, Phys 9 or 23, Math 23A; Mooney

Instrumentation, surveying techniques, reduction of data, interpretation, case histories.

176w Principles of Seismic Exploration

3 cr; prereq 2 or 22, Phys 9 or 23, Math 23A; Mooney

Reflection and refraction seismology; theory, interpretation, instruments.

177f Principles of Electrical Exploration

2 cr; prereq 2 or 22, Phys 9 or 23, Math 23A; Mooney

Resistivity, electromagnetic, and other methods; theory, interpretation, instruments.

180 Geophysical Applications of Potential Theory

2 cr; prereq Math 23A or equiv or #; Braslau

Gravity, magnetic, and hydraulic potentials; Poisson, Laplace equations; spherical harmonics; boundary value problems; earth's magnetic and gravity fields; flow of ground water.

German (Ger)

● **Major Sequence in Arts College**—35 cr in courses numbered 56 or above, including 97, 98 and at least 12 other cr in literary courses.

● **Minor Sequence in Arts College**—Students intending to minor in German under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

Honors Program in German

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, 225 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 89H and 90H, 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

Note—A student who has had high school German courses cannot register for an equivalent beginning German course (1 or 2 or 3 or 4) without taking the German placement test.

There are three course requirements in 1st-year German, 1-2-3, 1A-2A-3A, and 1B-2B-3B, each of which prepares the students for 4, the 2nd-year course. The student should study the description of each sequence carefully and choose the one most suited to his interests and needs. Credit can be earned in only one of these sequences.

1f-2w-3s Beginning German: Oral Approach
5-5-5 cr, §corresponding qtrs of 1A-2A-3A, 1B-2B-3B, 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.

1Af,w-2Af,w,s-3Af,w,s Beginning German: Oral Approach

5-5-5 cr; 5 class meetings per wk

Basic experience in speaking, reading, and understanding German language and structure through acquisition of basic speech patterns and later reading and analysis of texts.

1Bf-2Bw-3Bs 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.

1Hf-2Hw Honors Course: Beginning German

5-5 cr, plus 5 cr on passing special examination after completing the 2 qtrs; for students of high ability as indicated by their college entrance records; pre-req §; 5 class meetings a wk; Ramras

Covers material of 1B-2B-3B sequence.

108 / Course Offerings and Major Requirements

4f,w,s Intermediate German

3 cr; prereq 3 qtrs beginning German, or 3 yrs high school German; ¶5
Selected readings from literature.

5f,w,s Intermediate German

2 cr; prereq 3 qtrs beginning German,

or 3 yrs high school German; ¶4
Elementary composition and conversation.

7f-8w-9s Intermediate German

3-3-4 cr; prereq 3 or ¶; not open to students who have had 1A-2A-3A or 1B-2B-3B; 3 class meetings a week; C Wood

UPPER DIVISION COURSES

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

53f, 54w, 55s German Literature in Translation

2,2,2 cr; offered 1968-69; Coleman, F Wood

Requires no knowledge of German. German literature from medieval to modern times in its relation to other literatures. Representative works read in translation.

56Af,w,s Reading and Analysis of Literary Texts

3 cr; not open to students who have had 70 or above; prereq Ger 4, or 4 yrs high school German

Short stories read to develop reading fluency and appreciation of literary values.

56B Interpretation of Literature

3 cr; recommended especially for German majors and honors students; prereq 56A 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.

57f-58w-59s Composition

2-2-2 cr; prereq 4 and 5

Review of German grammar; emphasis on colloquial usage, and original composition.

58H Composition

2 cr; prereq 57 and Δ

59H Composition

2 cr; prereq 58 and Δ

61f-62w-63s Conversation

2-2-2 cr; prereq 4 and 5

Systematic development of vocabulary in areas relating to everyday life and practice in use of spoken German.

62H-63H Conversation

2-2 cr; prereq 61 and Δ

64f-65w-66s Advanced Conversation and Essay Writing

2-2-2 cr; prereq 59 and 63

68s Contemporary Germany

3 cr; prereq 56 or 4 and Δ; Weiss
Introduction to culture and civilization of present-day Germany.

69w,s German Play

1 or 2 cr; prereq 3, 3A or 3B
Practice in use of standard German through participation in dramatic productions.

70f, 71w, 72s Lyric Poetry from Goethe to Rilke

3,3,3 cr; prereq 56A or ¶; F Wood

70: Goethe period.

71: Heine to end of 19th century.

72: Twentieth century.

73f, 74w, 75s German Drama from Lessing to Present

3,3,3 cr; prereq 56A, or 4 and Δ; Menze

Reading and analysis of outstanding German dramatic works.

73: Classical period.

74: Nineteenth century.

75: Naturalism, impressionism, expressionism.

76f, 77w, 78s German Prose of 19th and 20th Centuries

3,3,3 cr; prereq 56A or ¶; taught in German; Taraba, Weiss

Selected Novellen by renowned German prose writers.

76: Nineteenth century.

77 and 78: Writers representative of literary movements of 20th century.

80w History of German Language

3 cr; prereq 6 cr in courses 70 or above; C Wood

81f, 82w Die Deutsche Komödie

2,2 cr; prereq 6 cr in courses 70 or above; Hirschbach

89Hf-90Hw Honors Course: Proseminar in German

3-3 cr; prereq candidacy for honors in German; Taraba

89H: 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.

90H: Students write honors papers supervised by professors of their choice.

91f, 92w, 93s German Civilization and Culture

3,3,3 cr; prereq 3 cr in courses 70 or above; taught in German; Weiss

Survey of important movements and leading personalities in art, music, science, religion, and education. Class discussions and lectures supplemented with demonstration materials.

Courses numbered 100 to 199 are open to seniors upon recommendation of advisers. Prerequisites are 14 cr in courses 70 and above or equivalent (except for specific course prerequisites).

Composition and Bibliography

103f, 104w, 105s German Style and Composition

1,1,1 cr; prereq 66 or equiv; offered 1968-69

133f Bibliography and Research Methods

3 cr; prereq 11 cr above 69

Literature

116f-117w-118s Middle High German Literature

3-3-3 cr; prereq 112, or §; Coleman

134f, 135w, 136s Non-fictional Prose of 18th, 19th, and 20th centuries

3,3,3 cr; Voss

137f, 138w Geschichte des Deutschen Verses

3,3 cr

140f, 141w, 142s Drama in Translation

3,3,3 cr; prereq 9 cr in theatre arts or literature above 50; no knowledge of German language required; cannot be used for German major or minor; Menze

143f, 144w, 145s German Novelle: From Goethe to Kafka

3,3,3 cr; Taraba

146f, 147w, 148s Literature of 19th Century

3,3,3 cr; Taraba

Literature, literary movements, and influences represented in drama, lyric, and shorter prose forms.

94f, 95w, 96s Survey of Literature

3,3,3 cr; recommended for all undergrad majors; prereq 3 cr in courses 70 or above; taught in German

Lectures on history and development of German literature.

94: Early beginnings to 18th century.

95: From 18th century to end of Goethe period.

96: Romanticism to 20th century.

97f, 98w Goethe

3,3 cr; required of all Arts College German majors; prereq 9 cr in courses 70 or above; Ramras

97: Storm and Stress.

98: Classical period.

99s Faust I

3 cr; prereq 9 cr in courses above 70; Ramras

149 Directed Reading

2-3 cr

150 Literature from 1350 to 1500

3 cr; Coleman

151 Literature from 1500 to 1600

3 cr; Weiss

153-154 German Literature of 17th Century

3-3 cr; Weiss

155, 156, 157 German Literature from 1700 to 1800

3,3,3 cr; Voss

Tendencies, developments, movements, ideas and forms of 18th century literature.

155: Enlightenment.

156: Storm and Stress.

157: Goethe period.

160f, 161w Klopstock, Wieland, Herder

3,3 cr; Ramras

162A-B Lessing

3-3 cr; Hirschbach

163f, 164w, 165s Goethe

3,3,3 cr; Ramras

166f, 167w, 168s Schiller

3,3,3 cr; Ramras

170f, 171w, 172s Romanticism

3,3,3 cr; Menze

173f, 174w, 175s The 19th-Century Novel

3,3,3 cr; Menze, Voss

110 / Course Offerings and Major Requirements

- 176f, 177w, 178s The 19th-Century Drama**
3,3,3 cr; Menze
- 179A,B,C German Drama from Naturalism to Present**
3,3,3 cr; Hirschbach, Weiss
A: 1880 to 1910.
B,C: 1910 to present.
- 180f, 181w, 182s The 20th-Century Novel**
3,3,3 cr; Ramras, F Wood, Hirschbach
- 183f, 184w, 185s Studies in Literature of 20th Century**
3,3,3 cr; F Wood
- 186f, 187w, 188s Lyric Poetry**
3,3,3 cr; F Wood
- 186: Renaissance through Sturm und Drang.
187: Goethe through Romanticism.
188: Heine to Rilke.
- 189 Expressionism in German Literature**
3 cr; Hirschbach
- 190f, 191w, 192s Studies in English-German Literary Relations**
3,3,3 cr; F Wood
- 190A, 191A, 192A Studies in French-German Literary Relations**
3,3,3 cr; F Wood
- 193f, 194w, 195s Studies in Literary Theory and Criticism**
3,3,3 cr; Ramras
- 196, 197 German Literature Since World War II**
3,3 cr; Friedrichsmeyer
- Linguistic approach to study of structure of present-day German.**
- 110f-111w-112s† Middle High German Language**
3-3-3† cr; prereq 94 and 11 cr in courses 70 and above or equiv
- 113f Gothic**
3 cr; prereq 80 and 11 cr in courses 70 and above or equiv; C Wood
- 114w-115s† Methods of Comparative Germanic Linguistics**
3-3† cr; prereq 113; C Wood
- 119f-120w-121s† Old High German**
3-3-3† cr; prereq 112 or ‡; Coleman
- 122-123† History of German Language**
3-3† cr
- 124 Philological Proseminar: Bibliography and Methods**
3 cr; Coleman
- 125 Runic Inscriptions**
3 cr; prereq ‡; C Wood
- 126 Old Saxon**
3 cr; prereq 121; C Wood
- 127 Manuscript Readings and Text Reconstruction**
3 cr; prereq ‡; Coleman
- 128, 129, 130 Philological Seminar**
3,3,3 cr; prereq ‡; Wood, Coleman
- 131 Reading in Philology**
3 cr; prereq ‡; for degree majors only; Wood, Coleman
For Old Norse, see Scandinavian Department
- Germanic Philology and Linguistics**
- 107f-108w-109s† Structure of Modern German**
3-3-3† cr; prereq sr with ‡, grad; C Wood

Greek/see Classics

Gujarati/see East and South Asian Languages

Hebrew/see Middle Eastern Languages

Hindi/see East and South Asian Languages

History (Hist)

● **Major Sequence in Arts College**—Students majoring in history will be expected to take courses as follows:

Freshman year—Hist 1, 2, 3 or 4, 5, 6 or 11, 12, 13 or 14, 15, 16 or 17, 18, 19

Sophomore year—Hist 23, 24

Last 2 years—27 cr in history courses numbered 65 or above.

At least 18 Upper Division cr must be in 6-cr or 9-cr sequence courses.

In special cases students will be allowed to substitute sequence courses numbered 65 or above in lieu of the courses normally taken in the first 2 years. (Courses numbered 50-64 may not be used for Upper Division credit in satisfying the major requirements.)

In one of the Upper Division 6-credit or 9-credit sequence courses, the student majoring in history will be expected to write a paper, or papers, satisfactory to the professor; these papers must be filed with the secretary of the department as a prerequisite for graduation.

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.

Students planning a history major should be certain to check with the department's Director of Undergraduate Studies for changes in the major requirements subsequent to the printing of this bulletin.

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 Honors Course: History 83H-84H. 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 "Honors Course: History" 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 170 or above) in which he will prepare a research paper.

When program is complete 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.

● **Requirements 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 65 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 65 or above.

No major recommendation to teach history will be given unless the candidate has taken the general course in American history, Hist 23, 24 or equivalent. For other history courses the same provisions apply as for Arts College majors in history, noted above.

112 / Course Offerings and Major Requirements

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 170 attract and are designed to serve the needs of students from all areas of the University. For Lower Division students, any of the courses numbered between 1 and 24 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 50 and 65.

LOWER DIVISION COURSES

1f,w, 2w,s, 3f,s Introduction to Modern European History

3,3,3 cr; not open to jrs, srs; Kieft, Munholland, Noonan, Pflanze, Rudolph, Wright

1: Development of western European civilization, rise of national states, to 1715.

2: Revolution, liberalism, and nationalism, to 1870.

3: 1870 to recent times.

1Hf,w, 2Hw,s, 3Hf,s Honors Course: Introduction to Modern European History

3,3,3 cr; prereq #; Kieft, Munholland, Noonan, Pflanze, Rudolph, Wright

Students attend lectures in 1, 2, 3 and meet with lecturer 1 hour per week to discuss readings, problems in historiography, and research methods relative to civilization of modern world.

4f, 5w, 6s English History

3,3,3 cr; Willson

4: Conquest and settlement, feudal age, foreshadowings of limited monarchy and popular government.

5: Tudors, Stuarts, and Hanoverians, parliament versus king, colonization and American Revolution.

6: Coming of democracy, Britain and Europe, empire and commonwealth.

11f, 12w, 13s Medieval and Renaissance History

3,3,3 cr; Bachrach, Hoyt

11: Early Middle Ages, decline of Rome, the barbarian kingdoms, Carolingian empire.

12: High Middle Ages, feudal Europe, medieval culture.

13: Later Middle Ages and early Renaissance, rise of national monarchies, art, learning, and literature.

11Hf, 12Hw, 13Hs Honors Course: Medieval, Renaissance History

3,3,3 cr; prereq #; Bachrach, Hoyt

Students attend lectures in 11, 12, 13 and meet with lecturer 2 hrs every fortnight to

discuss readings, problems in historiography, and research methods relative to medieval and Renaissance history.

14f, 15w, 16s Ancient Civilization

3,3,3 cr; Leichty, Mubly

Survey of rise and fall of ancient civilization.

14: Near East to 500 B.C.

15: Greek civilization, 750 to 323 B.C.

16: Roman civilization to A.D. 305.

14Af, 15Aw, 16As Ancient Civilization with Basic Readings

5,5,5 cr; T Jones, Mubly

Students attend lectures in 14, 15, 16 and meet 2 additional hrs per week to discuss assigned readings in literature of Near East, Greece, and Rome.

17f, 18w, 19s History of Asia

5,5,5 cr; Farmer, Kopf, Marshall, Taylor
Survey of history of China, Japan, India, and Southeast Asia from ancient times to present.

17: History and culture of China, Japan, and India to A.D. 1200.

18: Asia, A.D. 1200 to 1800 (Chinese late imperial period; India: Muslim domination; Japanese feudalism; beginning of Western influence).

19: Modern Asia: impact of Europe, nationalism.

23, 24 American History

4,4 cr; prereq soph; offered qtrly; Berkhof, Berman, Brauer, Chambers, Green, Howe, A Jones, Murphy, Rutman, Spear, Smith

Survey of political, economic, and social history of United States; emphasis on forces that resulted in emergence of modern America.

23: Colonial, early national period through sectional crisis.

24: Modern America.

23H, 24H Honors Course: American History

4,4 cr; prereq soph and #; Berkhofer, Berman, Brauer, Chambers, Green, Howe, A Jones, Murphy, Rutman, Spear, Smith

Students attend lectures in 23 and 24 and meet with lecturer 1 hr per wk to discuss readings, problems in historiography, and research methods in American history.

UPPER DIVISION COURSES

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

50f, 51w, 52s Ancient Civilization

3,3,3 cr, §14, 15, 16; Leichty, Muhly

83Hf-84Hw† Honors Course: History

3-3† cr; prereq candidacy for honors in history, #

50A, 51A, 52A Medieval, Renaissance History

3,3,3 cr, §11, 12, 13; Bachrach, Hoyt

86, 87 Colonial Period of American History

3,3 cr; prereq 86 or †86 or # for 87; Rutman

53f, 54w, 55s Introduction to Modern European History

3,3,3 cr, §1, 2, 3; Altholz, Thayer

86: American Colonies, 1607 to 1750.

87: Sources and methods of colonial history.

56f, 57w, 58s History of England

3,3,3 cr, §4, 5, 6; Willson

88 Colonial Period of American History: Colonies in the Empire and Revolutionary Crisis

3 cr; Rutman

59f, 60w, 61s History of Asia

5,5,5 cr, §17, 18, 19; Farmer, Kopf, Marshall, Taylor

87Aw, 88As Era of American Revolution

3,3 cr; prereq 87A or # for 88A; Howe Causes and course of American Revolution, accenting economic, social, political, and psychological impact of Revolution upon American life.

87A: Causes and course of Revolution.

88A: The Revolution and an American nation.

62Af, 63Aw Cultural History of Japan

3,3 cr; offered when feasible; Copeland

62A: Prehistoric times to A.D. 1600.

63A: A.D. 1600 to present.

89s Economic History of Modern War

3 cr; offered when feasible

Economic aspects of French Revolution and Napoleonic Wars, and of World War I and World War II.

Arab 74f-75w-76s History of Arabs

3-3-3 cr; prereq # for 74; Chejne

74: From pre-Islamic days to downfall of Umayyads of Damascus.

75: From Abbasids to fall of Baghdad in 1258.

76: From Crusades to modern times.

90, 91, 92 Migration and Mobility in American History

3,3,3 cr; Berkhofer

90: Migration of English society to New World and development of American nationality.

91: Frontier as image and reality of migration and mobility in American life.

92: Mobility in industrial society.

Heb 74f, 75w 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. Special attention given to bearing of civilization of ancient Mesopotamia and Egypt on cultural and social aspects of the Bible.

79f, 80w, 81s United States in 20th Century

3,3,3 cr; Chambers, A Jones

Political, economic, diplomatic, and social history of United States from Spanish-American War to present.

79: From 1898 to 1914.

80: From 1914 to 1932.

81: From 1932 to present.

90Af-91Aw-92As American Social History

3-3-3 cr; Smith

90A: Topical introduction, through lectures and readings, to 1850.

91A: Independent research on topics planned in 90A.

92A: Lectures and readings from 1850 to 1950.

114 / Course Offerings and Major Requirements

- 93f, 94w, 95s History of American Foreign Policy**
3,3,3 cr; Brauer
- 93:** Revolution, territorial expansion, to post-Civil War settlements, 1775 to 1871.
- 94:** Period of commercial expansion and war, 1871 to 1920.
- 95:** American foreign policy since Versailles.
- 93Af, 94Aw American Business History**
3,3 cr; Green
- 93A:** Colonial to 1890.
- 94A:** 1890 to present.
- 93B, 94B History of American Immigration**
3,3 cr, §93D, 94D or 95D; offered 1969-70 and alt yrs; Vecoli
- 93B:** To 1880.
- 94B:** Since 1880.
- 93C, 94C The Negro in American History**
3,3 cr, §93D, 94D or 95D; offered 1969-70 and alt yrs; Spear
- 93C:** From 1619 through Reconstruction.
- 94C:** Since Reconstruction.
- 93D, 94D, 95D Race and Nationality in American History**
3,3,3 cr, §93B, 94B, 93C, or 94C; offered 1968-69 and alt yrs; Spear
- Survey of role of Negroes and immigrants in American history.
- 93D:** To 1865.
- 94D:** 1865 to 1910.
- 95D:** 1910 to present.
- 96s History of American Political Parties**
3 cr; offered 1968 and alt yrs; Murphy
- Overview of historical role and changing structure of major and minor political parties in United States.
- 97f, 98w Minnesota and the Northwest**
3,3 cr; Jordan
- 99f,w,s Major Paper**
3 cr
- 100Bf, 101Bw, 102Bs Directed Study**
3,3,3 cr; prereq §
- Qualified senior and graduate students may register for one or more quarters with consent of instructor for work and training on tutorial basis.
- 103Af, 104Aw, 105As Ancient Near East**
3,3,3 cr; Leichty
- 103Bf, 104Bw, 105Bs Greece to 200 B.C.**
3,3,3 cr; offered 1969-70 and alt yrs; T Jones
- 103Cf, 104Cw, 105Cs History of Rome**
3,3,3 cr; offered 1968-69 and alt yrs; T Jones
- 106Af, 107Aw, 108As Europe in Early Middle Ages**
3,3,3 cr; Bachrach
- 106A:** Reforms of Diocletian to first sack of Rome (410).
- 107A:** Age of Fathers to Carolingian Empire.
- 108A:** Germanic Empire to end of Investiture Controversy.
- 106Bf, 107Bw, 108Bs Europe in High Middle Ages**
3,3,3 cr; Hoyt
- 106B:** Twelfth-century revival.
- 107B:** Medieval civilization.
- 108B:** Rise of western monarchies, decline of papacy and empire.
- 106Cf, 107Cw, 108Cs Europe in Late Middle Ages, Renaissance, and Reformation**
3,3,3 cr; Tracy
- 106C:** Italy from Dante to Machiavelli (Renaissance: 1300 to 1520).
- 107C:** Waning of Middle Ages (Transalpine Europe: 1300 to 1520).
- 108C:** The Reformation.
- 109Af, 110Aw, 111As Byzantine History**
3,3,3 cr; offered when feasible
- 109A:** Later Roman Empire from accession of Diocletian to death of Justinian in A.D. 565.
- 110A:** Rise of Byzantium to its zenith at accession of Basil II in 976.
- 111A:** From reign of Basil II to fall of Constantinople in 1453.
- 112Af, 113Aw, 114As English Constitutional History to 1485**
3,3,3 cr; Hoyt
- 112A:** Anglo-Saxon and Anglo-Norman England.
- 113A:** From Henry II to Edward I.
- 114A:** England in later Middle Ages.
- 115Af, 116Aw, 117As Early Modern Europe**
3,3,3 cr; Bamford
- 115A:** Reformation and religious wars.
- 116A:** Seventeenth century.
- 117A:** Eighteenth century.
- 115Bf, 116Bw, 117Bs French Revolution and Napoleon**
3,3,3 cr; Bamford
- 115B:** Background and emergence of the Revolution.
- 116B:** The Revolution and revolutionary wars.
- 117B:** Napoleon

- 115Cw, 116Cs Europe in 19th Century**
3,3 cr; Pflanze
- 115C: Reaction and revolution (1815-1852).
116C: National unification, industrialization, and imperialism (1852-1900).
- 115Df, 116Dw, 117Ds Europe in 20th Century**
3,3,3 cr; Munholland
- 115D: From 1890 to 1918.
116D: From 1918 to 1938.
117D: From 1938 to 1950's.
- 115Ef, 116Ew, 117Es World War II**
3,3,3 cr; Deutsch
- 115E: Origins and background.
116E: War period, 1939 to 1942.
117E: Period 1943 to 1945.
- 118Af, 119Aw Modern France**
3,3 cr; prereq 9 cr, or 15 cr in social science or French major; offered when feasible
- 118A: Political, social, and economic history of France from Vienna settlement to establishment of Third Republic.
119A: Struggle of Third and Fourth Republics to meet challenge of 20th century.
- 118Bf, 119Bw, 120Bs Modern History of Spain**
3,3,3 cr; offered when feasible
- Spain and Portugal in modern period: politics, diplomacy, social, economic, and cultural problems.
118B: From 1400 to 1700.
119B: From 1700 to 1898.
120B: The 20th century.
- 118Cf, 119Cw, 120Cs History of Germany**
3,3,3 cr; Pflanze
- 118C: From 911 to 1648.
119C: From 1648 to 1871.
120C: Since 1871.
- 118Df, 119Dw, 120Ds Central Europe**
3,3,3 cr; prereq 3; Wright
- Poland, Hungary, Czechoslovakia.
118D: Bohemia, Poland, and Hungary to 18th century.
119D: The 18th century to 1867.
120D: From 1867 to present.
- 118Ef, 119Ew, 120Es History of Early Russia**
3,3,3 cr; Noonan
- 118E: Origins of Russian, Kievan period.
119E: Mongol conquest of Russia, rise of Muscovite state to mid-16th century.
120E: Ivan IV, time of troubles, early Romanov period to Peter the Great.
- 118Ff, 119Fw, 120Fs Modern Russia**
3,3,3 cr; Stavrou
- 118F: Eighteenth-century background.
119F: The 19th century.
120F: Fall of Russian monarchy; revolutions and Soviet regime.
- 118Gf, 119Gw Modern Near East: Ottoman Empire and Successor States**
3,3 cr; Stavrou
- 118G: The 19th century; from Treaty of Jassy (1792) to Congress of Berlin.
119G: From Congress of Berlin to present.
- 118Jf, 119Jw, 120Js History of Scandinavian Countries**
3,3,3 cr; Oakley
- 118Kf, 119Kw, 120Ks History of Italy from Era of French Revolution to Present**
3,3,3 cr; Thayer
- Survey of diplomatic, political, social, and intellectual history of Italy from late 18th century to present.
118K: From 1789 to 1860.
119K: From 1860 to 1901.
120K: From 1901 to present.
- 118Lf, 119Lw History of Austria**
3,3 cr; offered 1968-69 and alt yrs; Wright
- 118L: From foundation of the March to advent of nationalism (1809).
119L: From 1809 through dissolution of monarchy to Second Republic.
- 121Bf, 122Bw Expansion of Europe**
3,3 cr; offered when feasible
- 121B: Era of discovery, commercial empires of Asia, settlement colonies of Western Hemisphere, 1400 to 1763.
122B: Later colonization, imperialism, modernization, and nationalism beyond Europe, 1763 to World War II.
- 121Cf, 122Cw, 123Cs Intellectual and Cultural History of Modern Europe**
3,3,3 cr; offered 1968-69 and alt yrs; Thayer
- 121C: The 18th century and its background.
122C: Early 19th century, romanticism, and liberalism.
123C: Late 19th and early 20th centuries, breakdown of intellectual unity of Europe.
- 121Df, 122Dw, 123Ds Diplomatic History of Modern Europe**
3,3,3 cr; Kieft
- 121D: 1648 to 1815.
122D: 1815 to 1914.
123D: 1914 to present.

116 / Course Offerings and Major Requirements

- 122Af, 123Aw Economic History of Europe**
3,3 cr; Rudolph
- 122A: Medieval and early modern economic life.
- 123A: Modern European economic history.
- 122E, 123E Economic History of Russia and Eastern Europe**
3,3 cr; offered 1969-70 and alt yrs; Rudolph
- Changing economic structure, government role, industrialization.
- 122E: 18th to mid-19th century.
- 123E: Mid-19th century to present.
- 124Af, 125Aw, 126As Modern England: Tudor and Stuart Periods**
3,3,3 cr; offered 1968-69 and alt yrs; Willson
- 124A: 1485 to 1588, from Henry VII to defeat of Spanish Armada.
- 125A: 1588 to 1642, from Spanish Armada to English civil wars.
- 126A: 1642 to 1714, from civil wars to death of Queen Anne.
- 124Cf, 125Cw, 126Cs Modern England: 1783 to Present**
3,3,3 cr; offered 1969-70 and alt yrs; Altholz
- 124C: 1783 to 1846, triumph of middle class.
- 125C: 1846 to 1901, Victorian era.
- 126C: 1901 to 1951, war and social change.
- 127Af, 128Aw, 129As Modern England: Social History**
3,3,3 cr; offered 1969-70 and alt yrs; Willson
- 127A: Age of Queen Elizabeth I.
- 128A: The 18th century.
- 129A: Age of Queen Victoria.
- 130Af, 131Aw, 132As History of British Empire and Commonwealth**
3,3,3 cr; offered when feasible
- 130A: First empire to 1783.
- 131A: Second empire, 1783 to 1914.
- 132A: Development of Commonwealth.
- 133Cf, 134Cw, 135Cs Early National Period in United States History**
3,3,3 cr; Jordan
- 133C: From 1783 to 1815.
- 134C: From 1815 to 1835.
- 135C: From 1835 to 1850.
- 133Ef, 134Ew, 135Es American History, 1850-1900**
3,3,3 cr; Loehr
- 133E: Compromise of 1850 to Appomattox.
- 134E: From 1865 to 1880.
- 135E: From 1880 to 1900.
- 136Af, 137Aw, 138As History of the South**
3,3,3 cr; Noble
- 136A: From 1607 to 1840.
- 137A: From 1840 to 1890.
- 138A: Since 1890.
- 139Af Current Interpretation and Problem of Synthesis in American History**
3 cr; prereq #; offered when feasible; Berkhofer
- Designed to acquaint students with current scholarship in field and its implications for general interpretation of American history.
- 139Bs Puritanism in American History**
3 cr; prereq #; offered 1970 and alt yrs; Rutman
- Puritanism as reality and as concept for historical interpretation.
- 139Cf, 140Cw, 141Cs Intellectual History of United States**
3,3,3 cr; Noble
- 139D Religion and Popular Education in American History**
3 cr; Smith
- 140D Religion and Social Radicalism in American History**
3 cr; Smith
- 141D Religious Aspects of American Ethnic History**
3 cr; Smith
- 139Ef, 140Ew, 141Es Social History of American Education (same as HED 149-150-151)**
3,3,3 cr; prereq 23, 24 or #; T Smith
- Impact of education on social and institutional developments, colonial period to present. "Education" is defined to include not only work of schools but family, community, and popular press.
- 139Ff, 140Fw, 141Fs American Constitutional History**
3,3,3 cr; Murphy
- 139F: English and colonial background through Age of Jefferson.
- 140F: Slavery controversy, sectionalism, Civil War, and Reconstruction.
- 141F: Constitutional developments in an industrial age.
- 139Gf, 140Gw, 141Gs History of Civil Liberties and Civil Rights in United States**
3,3,3 cr; Murphy
- 139G: From Magna Carta through colonial and national experience.
- 140G: Civil liberties and challenge of industrialism, 1865 to 1918.
- 141G: Civil liberties and civil rights issues in modern context.

- 141Ks Great Figures in American Jurisprudence**
3 cr; offered 1969 and alt yrs; Murphy
Analysis of role of leading jurists, and legal
thinkers in shaping American public law.
- 142Af, 143Aw, 144As American Economic History**
3,3,3 cr; Loehr
142A: Colonial life.
143A: From American Revolution to 1860.
144A: Developments since 1860.
- 142Bs American Agricultural History**
3 cr; Loehr
Colonial times to present.
- 142Cf, 143Cw, 144Cs History of American Labor**
3,3,3 cr; Berman
Role in development of United States from
colonial period to present.
142C: From 1607 to 1873.
143C: From 1873 to 1917.
144C: From 1917 to present.
- 145Af, 146Aw, 147As Survey of Latin-American History**
3,3,3 cr; Schwartz
145A: Colonial period.
146A: Latin-American republics.
147A: Recent Latin-American history.
- 145B, 146B History of Brazil**
3,3 cr; Schwartz
145B: Survey of colonial Brazilian develop-
ment 1500-1808.
146B: Modern Brazil 1808 to 1964.
- 148Af, 149Aw History of India**
3,3 cr
148A: Ancient India and early Muslim
India, to 1526.
149A: Mughal and British Empires, modern
India and era of nationalism, 1526 to 1947.
- 148Bs History of Southeast Asia**
3 cr
Survey of development of societies and
states in Asian region bordered by culture
and political spheres of China and India
from period of early influence of these two
civilizations through period of European
colonialism.
- 148Df, 149Dw Chinese History to 1368 A.D.**
3,3 cr; Taylor
148D: To 221 B.C.
149D: To 1368.
- 148Ef, 149Ew Chinese History Since 1368**
3,3 cr; Farmer
148E: To 19th century.
149E: Nineteenth century and after.
- 148Fw, 149Fs History of Japan**
3,3 cr; Marshall
148F: To 1700.
149F: Since 1700.
- 151Af, 152Aw Cultural History of China**
3,3 cr; prereq ¶Art History 111 recom-
mended; offered when feasible
151A: Prehistoric times to A.D. 600.
152A: A.D. 600 to present.
- Proseminars in Ancient and European History**
- 160Af-161Aw-162As† Ancient History**
3-3-3† cr; T Jones
- 160Bf-161Bw-162Bs† Ancient History**
3-3-3† cr; Leichty
- 163Af-164Aw-165As† Medieval History**
3-3-3† cr; Hoyt
- 163Cf-164Cw-165Cs† Renaissance and Reformation History**
3-3-3† cr; Tracy
- 166Af-167Aw-168As† Medieval English History**
3-3-3† cr; Hoyt
- 167Bw, 168Bs Medieval Russian History**
3,3 cr; prereq 118E, 119E, 120E or #
and reading knowledge of Russian,
French, or German; Noonan
- 169f, 170w† History of Historical Thought**
3,3† cr; Pflanze
- 169Cf, 170Cw Germany and Central Europe in 18th Century**
3,3 cr; Wright
- 169Ef-170Ew-171Es† Recent European History**
3-3-3† cr; prereq lect course in 20th-
century Europe or World War II, or
#; Deutsch
- 170Aw-171As† Expansion of Europe**
3-3† cr
- 172Af-173Aw-174As† Seventeenth-Century France**
3-3-3† cr; prereq reading knowledge of
French; Bamford
- 172Cf-173Cw-174Cs† French Revolution and Napoleon**
3-3-3† cr; Bamford
- 172Df-173Dw-174Ds† Nineteenth-Century Germany**
3-3-3† cr; prereq reading knowledge of
German, #; Pflanze

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- 172E-173E† Modern European Intellectual History
3-3-3† cr; Thayer
- 172Ff-173Fw-174Fs† Russian History
3-3-3† cr; prereq 120E and reading knowledge of Russian, German, or French, or ‡; Stavrou
- 172Gf-173Gw-174Gs† Scandinavian History
3-3-3† cr; Oakley
- 175Af-176Aw-177As† European Economic History Since 1500
3-3-3† cr; Bamford
- 175Bf-176Bw-177Bs† History of European Commerce
3-3-3† cr; Bamford
- 175Cs Atlantic Community: Early Modern Origins
3 cr; offered 1969 and alt yrs; Rutman
- 175Dw, 176Ds† Diplomatic History of 19th- and 20th-Century Europe
3,3† cr; Kieft
- 175D: 1815 to 1914.
176D: 1914 to present.
- 175Ff-176Fw-177Fs† Religious History of Modern Europe
3-3-3† cr; offered 1969-70 and alt yrs; Altholz
- 178Af-179Aw-180As† English History: Tudor and Stuart Periods
3-3-3† cr; Willson
- 178Cf-179Cw-180Cs† Modern England: 1783 to Present
3-3-3† cr; offered 1968-69 and alt yrs; Altholz
- Proseminars in History of the Americas**
- 181-182-183† Literature of American History
3-3-3† cr; prereq ‡; required of all graduate students intending a Ph.D. program in American history
Introduction to problems of historiography and survey of major interpretations in American history.
- 181Af-182Aw-183As† Seventeenth- and Eighteenth-Century American History
3-3-3† cr; Rutman
- 181Bf-182Bw-183Bs† Era of American Revolution
3-3-3† cr; Howe
- 181Df-182Dw-183Ds† Nineteenth-Century American History
3-3-3† cr; Jordan
- 181Ff-182Fw-183Fs† American History, 1850-1900
3-3-3† cr; offered 1969-70 and alt yrs; Loehr
- 181Jf-182Jw-183Js† American History in 20th Century
3-3-3† cr; prereq ‡; Section 1: Chambers, Section 2: A Jones
- 184Af-185Aw-186As† Migration and Mobility in American History
3-3-3† cr; offered 1969-70 and alt yrs; Berkhofer
- 184Ew-185Es† The Negro in American History
3-3† cr; prereq ‡ for 184E, 184E for 185E; Spear
- 187Af, 188Aw, 189As American Political and Constitutional History
3,3,3 cr; prereq 139F, 140F, 141F or ‡; Murphy
- 187Bf-188Bw-189Bs† American Diplomatic History
3-3-3† cr; offered 1969-70 and alt yrs; Brauer
- 187Df-188Dw-189Ds† Intellectual History of United States in 19th, 20th Centuries
3-3-3† cr; Noble
- 187Ef-188Ew-189Es† American Religious History
3-3-3† cr; prereq 23, 24 or ‡; Smith
- 187Ff-188Fw-189Fs† American Labor History
3-3-3† cr; Berman
- 187Gf-188Gw-189Gs† American Economic History
3-3-3† cr; offered 1968-69 and alt yrs; Loehr
- 188Jw-189Js† Proseminar: American Business History
3-3† cr; Green
- 188K-189K† Proseminar: History of American Immigration
3-3† cr; Vecoli
- 190Af-191Aw-192As† Latin-American History
3-3-3† cr; prereq reading knowledge of Spanish; offered when feasible; Schwartz
- Proseminars in Asian History**
- 193Af-194Aw† Proseminar: History of Japan
3-3† cr; prereq ‡; Marshall
- 193Bf-194Bw-195Bs† History of India
3-3-3† cr

193Cf, 194Cw† Chinese History to A.D. 1368

3,3† cr; Taylor

193Df, 194Dw† Chinese History, 1368 to 1949

3,3† cr; Farmer

196s East and South Asia

3 cr; same as Anth 196, Geog 196, Ortl 196, and Pol 196; integrating course for students majoring in East and South Asia area studies program; interdepartmental staff

199As Southeast Asian History

3 cr; offered 1968 and alt yrs

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 sequences:

HE 20, 21, 24A, 24B, 123A, 123B

19 (or any studio art), 21, 22, 125

Individual courses recommended are: 25, 26, 29, 100, 121, 126.

Many classes in the School of Home Economics are controlled in size. Students wishing to register in such classes should secure tally cards from 230 Coffey Hall. A limited number of tally cards is available in 205 Johnston Hall.

LOWER DIVISION COURSES

1f,w,s Clothing Selection

3 cr, §GC 3C; not open to seniors

Overview of individual, familial, and societal factors affecting selection of clothing and related items. Principles of clothing selection originating from economic and design theory.

19f,w,s Visual Presentation

3 cr

Laboratory experiences designed to develop observation, perception, and communication through studies in basic art tools and mediums.

20f,w,s Introduction to Related Art

3 cr

Development of an appreciation of art involved in everyday life of student; cultivation of taste in varied fields such as home furnishings and architecture.

21f,w,s Color

3 cr

Study of color theory and its application to problems in dress and interiors.

22f,w,s Costume Design

3 cr; prereq 1, 21, 19 or 23, or #

Problems in color, texture, design for individual. Introduction to fashion illustration. Study of folk and regional costume.

24Af,w,s Home Planning and Furnishings I

3 cr; prereq soph

Problems involved in choosing location and in planning or selecting dwelling unit and its furnishings.

24Bf,w,s Home Planning and Furnishing Experience I

3 cr; prereq 20, 21, 24A

Problems in designing for living space needs. Experience in evaluation of design quality of furnishing elements.

25s Craft Design

3 cr; prereq 21 or #

Applied design experiences with variety of readily available materials for articles used in home and dress.

26f Craft Problems I

3 cr; prereq 19 recommended or #

Beginning studio craft design and studies in one selected area such as weaving, enameling on metal, needlework, glass, or plastics.

29s Art and the Environment

3 cr; prereq soph

Art and design in housing; individual's role and responsibility; contemporary and historic examples of alternative approaches to design of physical home environment.

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31 Principles of Nutrition

3 cr, §GC 3B; not open to seniors
Quantitative and qualitative aspects of nutritional requirements. Interrelationships between physiological processes and dietary requirements. Problems of food faddism.

40f,w,s Food Preparation

5 cr; prereq 3rd qtr fr, 2 qtrs chemistry
Development of technique and application of fundamental scientific principles to cooking processes and preservation.

UPPER DIVISION COURSES

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

50f,w,s Textiles

4 cr; prereq 3rd qtr soph, GeCh 5 or NSci 2, or #
Basic physical, chemical, and biological characteristics of fiber, yarn, and fabric structures.

120f,w,s Art History

3 cr
Art from Egyptian period to present. Painting, sculpture, and architecture of past studied for influences on contemporary period. Field trips.

70f,w Advanced Food Preparation

3 cr, §73; prereq 40, BioC 1
(Continuation of 40) Emphasizes scientific principles that underlie cookery processes and food preservation.

121w Textile Design

3 cr; prereq 21, 23 or #...19 recommended
Designing textiles. Printing and dyeing techniques such as silk screen, batik; block printing, tie dye.

72f Nutrition

2 cr, §GC 3B, PNur 14, or HE 31; 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.

123A History of Home Interiors and Furnishings I

3 cr; prereq 120 or equiv
Study of furnishings and interiors from ancient times through 18th century, including Oriental influences.

76 Current Problems in Nutrition

3 cr, §170, 171; prereq 21, 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.

123B History of Home Interiors and Furnishings II

3 cr; prereq 120 or equiv
European-American furnishings and interiors of domestic architecture of 19th and 20th centuries.

85f,w,s Home Management Principles

3 cr; prereq 40 (41 recommended), AgEc 2
Managerial aspects of homemaking; work simplification of household activities; financial records and budget making for individual and family.

125s Advanced Costume Design

3 cr; prereq 3, 22 or #
Problems in draping and sketching clothing designs. Studies and reports on selected topics.

100 Homes of World

3 cr; prereq 24 or 29, or equiv
Study of home design in selected regions of world.

126f Craft Problems II

3 cr; prereq 25 or 26 or #
Advanced craft design in one selected medium. Readings.

How to Study/See Psychology

Humanities (Hum)

The subject of the humanities is man; his values, aspirations, and limitations. The subject is approached through a carefully integrated study of litera-

ture, 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 Humanities Division. Specific requirements are as follows:

- A. Minimum of 24 cr in combined Modern World and European Heritage sequence of which at least 5 cr must be in European Heritage (at least 15 cr must be taken in Upper Division)
- B. Upper Division
 1. 9 cr in social science (history included)
 2. 9 cr in history of art or history of music
 3. 8 cr in philosophy
 4. 18 cr in literature (English or foreign)
 5. 9 cr in Humanities Proseminar

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

If,w,s Humanities in Modern World I

5 cr, §1A or 51

Old Regime, French Revolution and Napoleonic Era, neoclassicism, and romanticism. Authors: Pope, Voltaire, Rousseau, Burke, Goethe, and Tolstoy.

1Af-2Aw-3As Humanities in Modern World

3-3-3 cr, §corresponding qtr of 1, 2, 3 or 51, 52, 53; prereq 1A or 1 for 2A, 2A or 2 for 3A; Scott, others

Each quarter corresponds to respective quarter of Hum 1,2,3 but with reduced reading list.

1Hf, 2Hw, 3Hs, 4Hf,w,s Honors Course: Humanities in Modern World

5,5,5,5 cr, §corresponding qtr of 1,2,3,4 or 1A-2A-3A; prereq # or Δ; limited to 15 students of high ability as demonstrated in other Humanities classes or in GPA or high school achievement

2f,w,s Humanities in Modern World II

5 cr, §2A or 52; prereq 1 or 1A

Industrial Revolution, liberalism and socialism, individualism. Authors: Smith, Malthus, Carlyle, Marx, Ibsen, Mill, Zola, Flaubert, Tolstoy, and Dostoevski.

3f,w,s Humanities in Modern World III

5 cr, §3A or 53; prereq 2, 2A or 52

Impact of science and theory of evolution; religion and morals in changing world. Authors: Darwin and evolutionists, Nietzsche, Kierkegaard, Chekhov, Turgenyev, Mann.

4f,w,s Humanities in Modern World IV

5 cr, §54; prereq 1 or 1A, 2 or 2A, 3 or 3A; Bryan, Hallberg, Klinger, Loudon, Penn

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.

9 Science and Humanities

5 cr, §99; Giese

Examines warfare between the two cultures, scientific and humanistic, through consideration of decisive documents from Goethe and Newton to Snow, Leavis, A. Huxley, J. Bronowski and others. Selected topics include (a) humanistic scholarship and methodological character of sciences, (b) creativity in arts and sciences, (c) science and human values.

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11f, 12w, 13s European Heritage

5,5,5 cr, §61 for 11, 62 for 12, 63 for 13

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.

11: Greek heritage.

12: Roman and Medieval heritage.

13: Renaissance and Reformation.

21f, 22w, 23s** American Life

3,3,3 cr; Hage, Murphy, Turpie

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

UPPER DIVISION COURSES

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

51f,w,52w,s,53f,s Humanities in Modern World

5,5,5 cr, §corresponding qtr of 1, 2, 3 or 1A-2A-3A; prereq jr or sr

Similar to 1, 2, 3; more reading, papers.

51Hf, 52Hw, 53Hs, 54Hf,w,s Humanities in Modern World

5,5,5,5 cr, §corresponding qtr of 1, 2, 3, 4 or 1A-2A-3A; prereq § or Δ; limited to 20 students of high ability as demonstrated by grades in humanities courses or GPA

54f,w,s Humanities in Modern World

5 cr, §4; prereq jr or sr; Berryman, Bryan, Klinger, Loudon, Penn

Similar to 4; more reading, papers.

55s Humanities in Modern World V

5 cr; prereq 4 or 54

Intellectual climate of western world since World War II. Worlds of existentialism and "the absurd"; alienation, irrationalism; anti-hero in literature; new theology; influence of Zen.

61f,w,62w,s,63f,s European Heritage

5,5,5 cr, §corresponding qtr of 11, 12, 13; limited to jrs and srs; Ames, Berryman, Loudon

Similar to 11, 12, 13; more reading, papers.

71f, 72w, 73s** Humanities in United States

3,3,3 cr; Cooperman

Introduction to American cultural history. Each quarter organized around topics that disclose a major conflict of ideals.

91f, 92w, 93s Independent Readings

2,2,2 cr; prereq Δ

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.

99 Science and Humanities

5 cr, §9; 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.

131f, 132w, 133s Humanities Proseminar

3,3,3 cr; prereq sr; Ames, Berryman, Bryan, Kwiat

Integrated review of humanities materials: arts, sciences, and civilization.

131Hf, 132Hw, 133Hs 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 131, 132, 133.

Attention is called to the following courses: Art history 1, 2, 3, 4, 47, 50, 56, 57, 58; Clas 4, 5, 6, 42; Ger 53, 54, 55; Mus 1, 31, 32, 33, 50, 51, 52, 53; Middle Eastern Languages—Arab 161, 162, 163; East and South Asian Languages—Chin 110, 111, 112, Jpn 110, 111, 112; Asian Civilization—Ortl 75, 76, 77, 78; Slavic Languages—Russ 75-76-77, 110-111-112.

** A student may take any combination of 21, 22, 23, and 71, 72, 73 up to a maximum of 9 cr. Upper Division students are advised to take the 71, 72, 73 sequence if possible.

Indian/see East and South Asian Languages

Indic/see East and South Asian Languages

Interdisciplinary Programs

In previous years the Arts College offered a variety of departmental and interdepartmental courses and programs for general education. Many of these courses and programs are still to be found in the College, but the courses are now listed under their respective headings.

For these courses and programs, see the following listings in Section II:

Communication	see Communication
Foreign Study	see Foreign Study/SPAN
Humanities	see Humanities
Natural Science	see Natural Science
Personal Orientation	see Psychology
Social Science	see Social Science

International Relations and Area Studies

The multidisciplinary programs in international relations and area studies 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 all participating colleges. The administrative office in the College of Liberal Arts for these programs is the Center for International Relations and Area Studies, 1246 Social Sciences Building (West Bank).

Purpose of the Programs—In response to increasing student interest in world affairs, several programs in international relations and area studies have been developed that permit students to cross departmental lines. These include:

A. *International Relations*. A general international relations major without particular area emphasis (for students who wish to specialize in governmental and legal as well as more general aspects of international relations study).

B. *Area Studies*. A group of area study majors designed to develop a comprehensive understanding and appreciation of the civilization of the peoples of given areas. Areas are demarcated on the basis of the culture or civilization of their peoples rather than upon a political basis. Programs may now be arranged for the following areas: Western Europe (with concentration in a subarea, either Scandinavia, British Isles, France, or Germany); Russia; East and South Asia (with concentration in a subarea, either East Asia, Southeast Asia, or South Asia); Latin America. In each case the major program is an integrated study of the social, political, economic, and aesthetic ideas and insti-

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tutions of the area, comprising courses drawn from the social sciences, language and literature, fine arts, humanities, and philosophy.

C. *Foreign Service.* A program of training in preparation for careers in the Foreign Service or in agencies having related functions. This ordinarily combines some elements of the general international relations major (or one of the area study majors) and courses in diplomatic history and administration; emphasis determined by the student's interests.

D. *General Education.* Most of the courses included in these programs can be elected for purposes of general education by nonmajor students. At the Lower Division level, Pol 25, 26, and at the Upper Division level the courses prescribed as a core curriculum for the general international relations major will be found especially suitable for this purpose.

Graduate training is also available in both international relations (M.A., Ph.D.) and area studies (M.A.); training in intelligence research is offered at the M.A. level for students with basic training in area programs. Upper Division students who expect to proceed to this advanced training are advised to acquaint themselves early with the prerequisites.

● **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 and area studies in the Upper Division, i.e., the first Upper Division sequence in conversation or composition. Preparation by area study majors should be in a foreign language appropriate to the area to be studied. Foreign Service candidates should choose either French, German, Spanish, or Russian.

Since Upper Division majors include courses selected from several social sciences, 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 major, Econ 1-2† and Geog 4 are prerequisites to required courses in the major; Pol 25 and 26 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 or area study 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 15 additional Upper Division credits must be earned by those who entered the College prior to fall 1967. For others, a minimum of 30 additional Upper Division credits is necessary.

For the general international relations major the 45 credits in major courses must include a prescribed core curriculum of 30 or 33 credits.

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. Concentrations of courses are available in the following fields:

Area studies:

East and South Asia (China-Japan, India-Pakistan)

Latin America

Western Europe (Scandinavia; Germany; France; England)

Soviet Union and East Europe

Diplomacy and foreign affairs administration
(Foreign Service)

Foreign trade and overseas business

International administration, law, and organization

International agriculture

International and cross-cultural communication

International development

International education

Advisers are prepared to discuss combinations of these fields in appropriate cases. All plans for concentrations must be approved by advisers.

Foreign language study is to be continued through at least the basic composition and conversation courses in one language at the Upper Division level; this is in addition to major courses. Additional courses contributing to the international relations program (or courses suited to other cultural interests of the student) may be elected.

Area study majors must include at least 18 cr in the social sciences and, whenever available, 6 cr in an honors or reading course or proseminar designed to integrate the program. Courses acceptable for this purpose are listed in the special bulletin, *Programs in International Relations and Area Studies*. The remainder of the 45 cr will be distributed among courses in foreign language and literature and in fine arts, humanities, and philosophy. The rest of the 60 (75 for those entering the College beginning fall 1967) or more Upper Division credits may be elected by the student to complete his program in accordance with his cultural or vocational interests.

Detailed requirements and listing of courses for each major appear in the special bulletin, *Programs in International Relations and Area Studies*.

UPPER DIVISION COURSES

International Relations—Honors Program

90H Honors Course: Senior Honors Seminar
3 cr; 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.

91H Honors Course: Supervised Research Paper

3 cr; prereq sr honors candidates in international relations or area studies

Italian/see Romance Languages

Japanese/see East and South Asian Languages

Journalism and Mass Communication (Jour)

Young men and women planning careers in the writing, advertising, or other fields of mass communications enter the School of Journalism and Mass Communication to earn B.A. degrees in journalism. Though the B.A. degree provides basic professional education, many students desiring superior preparation in journalism and supporting subject areas undertake further work. They may seek M.A. and Ph.D. degrees in journalism and mass communication, if they meet Graduate School admission requirements, or combine advanced journalism work with other degree programs. (The *Graduate School Bulletin* describes such programs and requirements.)

The School of Journalism and Mass Communication offers two principal course sequences (news and editorial; advertising), each with a considerable range of specializations, and each leading to a liberal arts degree. These sequences and the areas of professional work to which they relate are:

News-Editorial—A degree sequence preparing students for daily and weekly newspaper reporting, editing, interpretive writing, and editorial direction; radio and television news and editorial writing and presentation, script and continuity writing; photojournalism; press association work; magazine writing, editing, and administration; critical writing; science and technical writing; industrial journalism; graphic arts design and processes; newspaper management, circulation, promotion; public relations and public opinion; mass communications research; journalism teaching.

Advertising—Print and broadcast media advertising; advertising agencies; manufacturers' and retail advertising departments; copywriting and layout; print and broadcast reproduction; media, market, and consumer analysis; newspaper management, circulation, promotion; public relations; mass communications research; journalism teaching.

Two additional degree programs offered cooperatively by the Arts College and the College of Agriculture, Forestry, and Home Economics provide training for areas of professional work as follows: **Agricultural Journalism**: Daily and weekly newspaper work in rural areas; farm and technical journals; agricultural information work. **Home Economics Journalism**: Work on daily and weekly newspapers and in public information and technical writing in the home economics field.

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 student first must meet Arts College Lower Division requirements. As a junior, he 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 those with liberal education emphasis.

A journalism major may begin his journalism course work either in his freshman or sophomore year. Freshmen who are interested in journalism and communications, and who plan to enter the School of Journalism and Mass Communication, are urged to discuss their course programs and vocational ideas with members of the journalism faculty.

A prospective journalism major, while meeting the Arts College Lower Division requirements, must include in his program Jour 1 and 5, Comp 27, Econ B-C or 1-2†, and Pol 1-2. He must include two quarters of American history in either Lower or Upper Division (selections from Hist 23, 24, 80, 81, 90, 93, 139C, 140C, 141C, 142A, 143A, 144A are recommended). Those intending to follow the news-editorial sequence must include also Jour 14 and 16. Pre-advertising students must include Jour 18 and Psy 1-2†.

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 two 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 including Lower Division courses in journalism.

Requirements:

- A. Jour 50, 51, 101, 112
- B. Jour 55-56 or 73-74 or 84-85
- C. Jour 109 or 111
- D. Jour 140 or 141 (print media students) or 142 (broadcast media students)
- E. 9 to 12 elective Upper Division cr in journalism for minimum of 30. Three of the elective credits must be numbered above 90. 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.

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● **Advertising Major Sequence for Bachelor of Arts**—Maximum of 45 cr including Lower Division courses in journalism.

Requirements:

A. Jour 57, 79, 112, 156, 161, 162, 164; Mktg 57

B. 9 cr in Upper Division journalism or adviser-approved areas

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 97, 97C, 98, 99, 107, 107C, 117, 117C, 147, 187; Econ 69, 120 and either QA 51 or Psy 70.

Students of advertising wishing special training in commercial design are advised to elect work in the Department of Art-Studio. A student may prepare for a general minor in art by electing ArtS 20, 23.

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 fields of agriculture or home economics. Full details of the various programs and of Lower and Upper Division requirements 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 in conference with advisers to prepare for work in these areas. Such programs usually can be developed within either the news-editorial or the advertising sequences. Combinations or modifications are possible in some cases. 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:

Broadcast Journalism—students should choose Jour 84-85, 111, 142; recommended are Jour 6, 53; Spch 65, 69, 171.

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 53, 60, 158; advertising majors should elect Jour 53, 59, 158; Upper Division courses in art and design may be elected.

Magazine Journalism—students should choose Jour 73-74, 109, 140 or 141; recommended are Jour 6, 53, 55-56, 60, 103, 106, 121.

Newspaper Editorial—students should choose Jour 55-56, 109, 140 and 141; recommended are Jour 6, 53, 60, 93, 114, 121, 177.

Newspaper Management—a student may follow either the news-editorial or advertising sequence. Students should choose Jour 93, 95; recommended are 57, 60, 78, 115, 121, 177.

Photojournalism—students should elect Jour 6, 53, 65, 66, and 105 or 107 or 108; recommended are Jour 84-85; Art History 50 and 86; any two of ArtS 83, 84, 85, 123; and 3-6 cr in basic design.

Public Relations—a student may follow either the news-editorial or advertising sequence. Students should elect Jour 78, 149; recommended are Jour 18, 114, 115, 121, 131. Recommended Lower Division courses: Psy 1-2†, Soc 1, Spch 5.

Students expecting to specialize at the graduate level in advertising or mass communication research should elect during their senior years Jour 114, 115, and a course in statistics chosen in consultation with their graduate advisers.

Journalism Minor for Non-Arts College Students—For students in the College of Agriculture, Forestry, and Home Economics, the Institute of Technology, and the School of Business Administration—Jour 11, 41, 71, and 6 additional cr in Upper Division journalism courses, to be chosen in conference with the adviser. Jour 57, 78, 90, or 121, 109, 112, and 124 are recommended. Students in the School of Business Administration specializing in marketing or advertising may set up a minor including Jour 79, 161, 162, 163, 164. For students in the College of Education—Jour 11, 41, 71, 82, and 9 additional cr chosen from among Jour 57, 90 or 121, 103, 109, 111, 112, and 124. EdT 74 (see *College of Education Bulletin*), offered by the School of Journalism and Mass Communication, is a required education course for students in this sequence.

Nonprofessional Minor in Journalism—A group of courses dealing primarily with the social aspects of mass communications is open to students majoring in other Arts College departments and may be used for a non-professional minor by undergraduates or graduates: Jour 90 or 121, 103, 105, 106, 109, 110, 111, 112, 114, 115, 124, 125, 126, 131, 150, 177. Arts College students interested in taking other undergraduate courses in journalism with a view toward professional specialization in a 5th year of journalism work should consult a journalism adviser.

Honors Program—In addition to the general requirements of the CLA Honors Division, journalism majors may qualify for *cum laude* through successful completion of 118H and 122H; for *magna cum laude*, the above courses and one College Honors Seminar; for *summa cum laude*, the above courses, two College Honors Seminars, and an acceptable *summa* thesis. In addition, the School of Journalism and Mass Communication requires a 3.25 average in all journalism courses for all levels of honors.

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.

Jf,w,s 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 wk

Nature, functions, and responsibilities of communication agencies examined from point of view of professional journalist. News, opinion, entertainment, and persuasion functions. Specialized communication;

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aspects of advertising. Laboratory exercises in fact-gathering and journalistic writing.
2 (see Spch 2)

3w Communication in Modern World—Mass Media

3 cr, §Spch 3; 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.
4 (see Spch 4)

5w,s Visual Communication

3 cr; prereq 3rd qtr fr; Schuneman, Wilson
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.

6f,w,s Beginning Photojournalism

3 cr; prereq soph; Schuneman, Bay
Photography as creative means of communication. Fundamentals of photography; use of news cameras; basic darkroom processes. Lectures and laboratory.

11f,w 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, 3, 3A, 3B, or Comm 3 or

Rhet 3 or exemption from English requirement; Sim
Newspaper fact-gathering and newswriting; specialized reporting; fundamentals of press law.

14f,w,s Reporting

3 cr; prereq soph, 1 or 13, C avg in journalism courses and in all work, or #...type 35 words per min...¶Comp 27; Brovald, Gillmor, Hage, Lindsay, Sim
Study of and practice in commonly used forms of reporting. Problems of news handling. Effective feature writing.

16f,w,s Mass Communications Law

2 cr; prereq 1, ¶14, 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.

18f,w,s Principles of Advertising

3 cr; prereq soph, 1, C avg and ¶Comp 27...1 or ¶1 for Upper Division students; Barden, Peterman
Theory, principles, and functions of advertising; its role in economic, social, and marketing structure. Newspapers, magazines, radio, television as advertising media.

41w,s Publications Editing

3 cr; not recommended for journalism majors; prereq soph, 1 or 11; Sim
Lectures and laboratory in basic problems of copy editing for various publications.

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.

50f,w,s Interpretive Reporting

3 cr; prereq soph with B avg in 1 and 14 or jr, 14, C avg, Comp 27 or #; Carter, Gerald, Hage, Lindsay
Interpretive and investigative reporting. Interpretive features and series. Advanced problems in material gathering and specialized reporting.

51f,s News Editing

2 cr; prereq 50 or B avg in 1, 14; 4 lab hrs per wk; Brovald, Sim
Basic copy editing problems and techniques; headline writing; proof reading.

53f Picture Editing

3 cr; prereq 5 or #; Schuneman
Criteria for picture selection. Analysis of work of Cartier-Bresson, Bourke-White,

Capa, Eisenstaedt, Lange, Duncan, others. Combining word and picture in communications; layouts. Lectures and laboratory.

55w Newspaper Editing

2 cr; prereq 51 and ¶56 or #; Sim
Lectures and laboratory in news and picture selection and editing. Newspaper makeup. Press association teletype service.

56w Design and Typography: Editorial

2 cr; prereq 51 and ¶55 or #; Wilson
Principles of design in newspaper and periodical makeup. Type and headline display. Typography for film presentation.

57f,s 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.

59w Advanced Advertising Typography and Layout

3 cr; prereq 57; Wilson

Practices and experimentation with display typography; individual laboratory projects in retail advertising display, point of purchase display, posters, direct mail brochures.

60f,s Graphic Arts: Processes

3 cr; prereq jr; Wilson

Letterpress, offset lithography, and gravure printing processes; engravings and copy preparation; significant graphic arts trends.

65w Advanced Photojournalism I

3 cr, §7; prereq 6; Schuneman

Picture content for visual reporting by print and television. Thematic visual series. Use of miniature camera, light and lighting. Lectures and laboratory.

66s Advanced Photojournalism II

3 cr; prereq 5, 65 and #; Schuneman

Visual presentation of information and ideas. Magazine photography; production of series and sequences. Principles of advertising illustration. Photo markets.

71w Business and Industrial Journalism

3 cr; for journalism majors and minors particularly interested in study of business and industrial press; prereq 41 or 51

Gathering material for and writing of feature articles.

73f,w Magazine Writing

3 cr; prereq 50 or 41 and #; Hage

Planning and writing feature articles for general, class, and trade publications; marketing; problems of magazine editing; employee and industrial journal problems.

74w Magazine Editing

3 cr; prereq 73, 56 or §56 and #

Planning and editing consumer and specialized magazines; problems of magazine layout, design, and makeup. Individual projects in magazine editing, writing.

78f Public Relations Methods

3 cr; prereq 51 or 56, and 73...or 41, 57, and 71; Lindsay

Publicity, external and internal communication, including use of company publications, institutional advertising and trade journals. Projects and campaigns.

79f,w,s Advertising Copy Writing

5 cr; prereq 18, 57; 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.

80su Survey of Journalism Techniques

3 cr; open only to grad or summer special students; prereq 1 or §1, 16 or §16 and #

Overview of principal journalistic techniques; writing for news media, magazines, broadcasting; advertising copy; layout and design; editing; visual presentation. Lectures and laboratory.

82s Supervision of School Publications

3 cr; for those who plan to become advisers of high school or college newspapers, yearbooks, magazines; prereq 41 or 51; Sim

Emphasis upon editorial content, staff organization, editing, typography, makeup, and business management.

84f Broadcast News Writing, Editing

3 cr; prereq 50; Lindsay

Radio and television as media of journalistic communication. Broadcast newsrooms; news writing, editing, preparation. Ethical considerations, professional organizations, legal and administrative aspects.

85w Television-Film Production: News and Advertising

3 cr; prereq 5 and 79 or 84 or #; Bay, Schuneman

Television and film presentation for mass communication. Motion picture filming, editing, and scripting for commercials, news, documentaries, public affairs programs. Field and laboratory work.

86s Radio and Television Script Writing

3 cr; prereq 51 and # for journalism majors, 1 and # for speech-radio majors. Planning and writing scripts for broadcast in variety of program areas.

88w Radio and Television Station Administration

3 cr; prereq 111 or Δ; offered when feasible

90s Mass Communications and the News

3 cr; not open to journalism majors; Emery, Lindsay, 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.

93f Community Newspaper

3 cr; prereq 41 or 51 or §41 or 51; Brovald, Sim

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Local newspaper and its editor—their place in American life. Problems of news and editorial direction, organization, and responsibility.

95s Newspaper Management

3 cr; prereq 41 or 51 or ¶41 or 51; Brovald, Sim

Analysis of management problems: advertising, circulation, and commercial printing as sources of income; records and cost systems; plant layout; business policies.

101w,s Reporting of Public Affairs

3 cr; prereq sr, 51; Hage

Reporting court trials, city, county, state, federal, administrative, and legislative agencies, politics, business, and labor. Students attend and report trials, hearings, legislative sessions, and news conferences.

102f Science Communication

4 cr; prereq 50 or 71 or §; Tichenor

Role of journalistic communication in science; scientist-journalist relationships; communicating results of scientific investigations to public and specialized audiences and industry.

103f 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, discussion, and weekly papers.

105w 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, 1839 to present. Analysis of important films, photographs.

106s Critical Writing

3 cr; prereq an Upper Division writing course and §; Hage

Theory and practice of writing book, theater, and motion picture reviews. Analysis of work of leading critics and critical periodicals. Reviews are written weekly.

107f, 108f Advanced Projects in Photojournalism

3,3 cr; prereq 5, 65 and §; offered alt yrs; Schuneman

Intensive work in two specialized areas of photojournalism.

107, Documentary picture story: definition, scope, research and approaches for magazines and picture books.

108, Color photography: analysis of contemporary use of color in photography for printed media; materials and processes.

109f,w 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.

110w Topics in History of Journalism

3 cr; prereq 109; Emery

Intensive study of significant individuals, newspapers, and periodicals in history of American journalism. Individual projects and readings.

111s Development of American Broadcasting

3 cr; Lindsay

Historical and economic development of radio and television in United States; government regulation, industry, self-regulation, forms of social control; issues in contemporary broadcasting.

112f,w,s 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 diffusions of information and in opinion information.

114w Mass Communication Theory

3 cr; prereq 112; Carter

Study of research concepts and findings that offer promise for development of general theory of mass communication. Analysis of research in communication of ideas and information through mass media.

115s Communications Analysis: Content, Audiences, Effects

3 cr; prereq introductory course in statistics and §; Carter, Jones

Analysis of content and audiences of news papers, magazines, radio, television, and motion pictures. Procedures for study of mass media effects. (Not offered 1968-70.)

118f,w,s Advanced Projects in Journalism

1-3 cr per qtr, but course may be repeated for more than 1 qtr until a total of 6 cr is reached; prereq sr, journalism major, B avg, §

118H (see 118)

121w Mass Media in Dynamic Society

3 cr; prereq 18 or 50 for journalism majors, § for others; Gillmor

Economic, political, and social determinants of character and content of mass communications. Patterns of operations, effect on content, and relative social utility. Government and mass communications.

122s Current Communications Problems

3 cr; prereq sr, 51; Gerald, Gillmor
Individual project method used for analyses of communications problems of current importance in light of their social, economic, and technological environment.

122H (see 122)

124f 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.

125w Communication Systems of Western World

3 cr; prereq 15 cr in social sciences with Upper Division course in international relations recommended; Lindsay, Nixon
Communications in other democracies as compared with United States and with totalitarian systems. British Commonwealth, Netherlands, Scandinavian countries, Switzerland, France, and Latin America emphasized; problems of reconstructing free press in Germany, Italy, and Japan; prospects for newly developing areas.

126s Communications in Authoritarian Society

3 cr; prereq 15 cr in social sciences with 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.

131w Public Opinion and Persuasion

3 cr; prereq 112; Carter, Tichenor
Advanced study of theories of opinion formation, persuasion, and attitude change. Studies of communication process in relation to interpersonal influence and to community power structure. Polls, politics, and pressure groups.

140f, 141w Interpretation of Contemporary Affairs

3,3 cr; prereq sr, 51 and 15 cr in social science; Gerald, Emery, Gillmor, Nixon
Analysis of major political, economic, and social developments and their interpretation in editorial and interpretative article.

142s News Interpretation for Radio and Television

3 cr; prereq 85; Lindsay

Preparation, writing, scripting of news analyses, commentaries, editorials, documentaries for electronic media. Emphasis on editorial investigation and content, style and techniques, audience and effects.

143s Interpretation of Science and Technology

3 cr; prereq 102, 112 and Phil 160; Tichenor

Analysis of scientific research and technological development for mass and specialized media; critical study of science content in media; audience impact.

149s Public Relations Principles

3 cr; prereq sr, 78, 112 or 15 cr in social sciences and §; Lindsay

Principles of public relations function; application of principles in industry, government, education, social agencies, and other institutions; pertinence of social science research. Case studies and analyses.

150s Institutional Public Relations

2 or 3 cr; not open to journalism majors; prereq sr, §; not offered 1968-70; Lindsay

Principles and practices of public relations in public health, social work, education, and other community institutional service fields.

156f,w Psychology of Advertising

3 cr, §Psy 156; prereq Psy 2 and Principles of Economics; Peterman
Psychological analysis of basic principles underlying advertising and selling. Consumer research is stressed. Research techniques for investigating advertising problems and analysis of consumer wants are considered in detail.

158s Graphic Design Analysis (old 58)

3 cr; prereq 56, 60, or 57, 60, or §; Wilson

Study of technological development in graphics and its effect on format and efficiency; historical and current trends; field studies, creative problems.

161f,w Advertising: Print Media

3 cr; prereq 18, 57 and 79, ¶162 or §; Barden

Characteristics of newspapers, magazines, direct mail, outdoor, specialty media, their role in advertising; relations with retail advertisers, national representatives, agencies; organizations. Rate structures, economics.

162f,w Advertising: Radio and Television Media

3 cr; prereq 18, 79, ¶161 or §; Barden, Peterman

Contrasts and similarities of radio and television characteristics; interaction of spon-

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sor, agency, station, network, and station representative; program and market selection; rate structure, audience analysis; creating and measuring impact of commercials.

163w,s Advertising: Media Strategy and Analysis

3 cr; prereq sr, 18, 161, 162 and #...or 161, 162, Mktg 77 or #; Alarik

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 problems.

164w,s Current Advertising Problems, Developments and Campaigns

3 cr; prereq sr, 161, 162; Peterman

Creative, management, research, media, and technical developments in advertising. Discussion and analysis of specific problems,

outstanding campaigns, and salient current issues.

177f,s 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.

190s Advanced Problems in Journalistic Writing

3 cr; prereq grad, demonstration of acceptable writing achievement and #; Hage

Investigation and analysis of problems of advanced professional accomplishment in fields of journalistic writing. Uses of literary and journalistic forms.

Landscape Architecture/see Architecture

Latin/see Classics

Library School (Lib)

The Library School is a graduate, professional school. It offers five undergraduate courses in library science as electives for an Arts College undergraduate. Lib 102 and 105 have special general education values. Undergraduates planning a career in librarianship are advised to register for at least three of the 101 to 105 series of courses while undergraduates, and they are invited to visit the Library School office, 3 Walter Library, for advice.

The only terminal course of study designed to prepare students for career service in the field of librarianship is the Master's degree program offered by the Library School through the Graduate School. Admission requirements for the degree may be found in the *Library School Bulletin* and the *Graduate School Bulletin*.

A special 24-cr program leading to certification for school library work is also offered. Undergraduates in the College of Education may take this program as a minor.

Students who wish to work in college, public, or special libraries immediately after graduation with a B.A. should call at the Library School office, 3 Walter Library, for advice.

Arts College undergraduates who wish to prepare for school librarianship should register in the College of Education, since a teacher's certificate is required in addition to library science certification courses. Postgraduates who hold teachers' certificates are also eligible for this certification program. Liberal Arts graduates without certificates who wish to work in school libraries should inquire at the Library School office about a special program.

UPPER DIVISION COURSES

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

101 Library Administration

3 cr; Berninghausen

Introduction to principles of library administration, organization, and management.

102 Reference I

3 cr; Smith, Turner, Van der Boom

Intensive study of some 150 outstanding and useful reference books and tools most frequently used by students and librarians. Landmark reference books, indexes, and periodical guides. Theory and practice of reference work.

103 Cataloging and Classification

3 cr; Samanisky, Simonton

Basic principles of descriptive cataloging, rules of entry, subject headings and classification in libraries, for all types of libraries.

104 Selection of Library Materials

3 cr; Freeman, Smith

Theory, principles, and techniques of selection; introduction to basic tools for selection of books, magazines, pamphlets, phonograph records, films, etc., for all types of libraries.

105 History of Libraries and Librarianship

3 cr; Shove

Library development from ancient times to present; library service in United States in 19th and 20th centuries. Libraries as social agencies.

114 Reading, Listening, and Viewing Guidance for Youth in Libraries

3 cr; prereq 104; Olson

Philosophy and objectives of library service in schools and children's departments; guidance techniques; planning library programs. Review of relevant research related to reading, viewing and listening, and a survey of professional literature from various fields

pertinent to understanding children and adolescents.

171 Reading Guidance for Children

3 cr; prereq 104; Olson

Reading interests of children and various kinds of materials that meet these interests. Knowledge of sources, selection, evaluation, and methods of introducing books to children.

172 Reading Guidance for Adolescents

3 cr; prereq 104; Kromer, Olson

Library's relationship to teenager in terms of his interests and needs. Method of introducing books and developing and guiding reading.

173 Reading Guidance for Adults

3 cr; prereq 104; Freeman

Selection and evaluation of materials in terms of adult learning, reading ability and interests; reading guidance techniques and programs used with adults in public libraries.

194 Non-Print Materials in Libraries

3 cr; prereq 104; Kittilson

Selection, organization, and administration of non-print materials in library programs; emphasis upon instructional and recreational use of non-print materials.

195 Print Materials in the Library

3 cr; Olson

Selection, evaluation, and use of books, periodicals and other printed sources of information and recreation for youth in school and public libraries; reading patterns of children and adolescents and implications for selection of printed materials to meet requirements, purposes, and abilities of different age groups.

Linguistics (Ling)**● Major Sequence in Arts College—***Prerequisites:*

Ling 50-51, 52

Requirements:

A. Ling 60-61-62

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B. At least 21 additional cr in linguistics courses (or others listed below) numbered 50 or above, including at least 6 cr in history and/or structure of language chosen under C.

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.

● **Minor Sequence in Arts College**—Students intending to minor in linguistics under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

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 80H, 81H, 82H. 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

1f-2w-3s Introduction to Study of Language
2-2-2 cr; may not be used as prerequisite for advanced courses in linguistics; Lehn

Synchronic and diachronic study of language, applications of linguistics, relationship of language to other aspects of culture, history of linguistics.

UPPER DIVISION COURSES

50f-51w Introduction to Linguistic Science
3-3 cr; Law
Introduction to synchronic (50) and diachronic (51) linguistics.

101-102-103 Phonology
3-3-3 cr; prereq 62 or #; Lehn
Survey of theory and practice in phonologic analysis.

52s Phonetics
3 cr; prereq 50 or Δ
General phonetics with laboratory work in recognition, production, and transcription of speech sounds.

104f-105w-106s Mathematical Linguistics
3-3-3 cr; prereq 62 or #; Hutchinson
Elementary set theory, symbolic logic, theory of relations, grammars and automata.

55f Linguistics for Foreign Language Teachers
3 cr, §Ling 1, 50, Ger 60; J Penn
Introduction to linguistics as applied to foreign language teaching.

107 Field Methods in Linguistics
3 cr; prereq 62 or #; offered when feasible
Methods of collecting linguistic data from informants.

60f-61w-62s Linguistic Analysis
3-3-3 cr; prereq 50 and 52 or Δ; Law
60: Analysis and description of phonologic.
61: Grammatic systems.

110f-111w-112s Tagmemic Analysis
3-3-3 cr; prereq 62 or #; Law
Theory and practice in tagmemic analysis.

62: Methods and models in linguistic analysis.

120f-121w-122s Transformational Grammar
3-3-3 cr; prereq 62 or #; Hutchinson
Theory and practice in transformational grammar.

80Hf, 81Hw, 82Hs† Honors Course: Linguistics
3,3,3† cr; prereq candidacy for honors in linguistics

123 Generative Phonology
3 cr; prereq 62 and 121 or #; Lehtinen
Basic theory and practice.

130-131 American Indian Linguistics

3-3 cr; prereq 62 or #; Law
Genetic and typological survey of representative languages.

140 Methods in Diachronic Linguistics

3 cr; prereq 62 or #; offered when feasible
Theory and practice in historical study of language.

141-142 Comparative Indo-European Linguistics

3-3 cr; prereq 140 and #; offered when feasible

172 Applied Phonetics

3 cr, §52; prereq 170 or #; no credit for linguistics majors; Robinett
Primarily for teachers of English as a second language.

173 Language and Communication

3 cr; prereq 62 or #; J Penn
Place and function of language in communication models derived from fields such

as information theory, social psychology, and psychiatry.

175-176 Psycholinguistics

3-3 cr; prereq 62 or #; J Penn
Introduction to the field including problem of meaning, language and cognition, models of language use and acquisition, and neurolinguistics.

178-179 Philosophy of Science in Linguistics

3-3 cr; prereq 62 or #; Hutchinson
Introduction to nature of scientific explanations and theories; philosophical positions within linguistics.

180 Contrastive Linguistics

3 cr; prereq 170 and 172 or #; Robinett
Contrastive analysis of English and other languages.

190f, 191w, 192s Tutorial

1-3 cr per qtr; prereq major and #; Lehn, others

Courses referred to under B above may be selected from the following, subject to approval by the student's major adviser:

Anthropology

85 Language and Culture
180-181† Method and Theory in Anthropological Linguistics

182 Field Methods in Anthropological Linguistics

Classics

CiPh 115 Introduction to Classical Philology
CiPh 116G History of Greek

CiPh 116L History of Latin
CiPh 120G Greek Dialects

East and South Asian Languages

East Asian

Chin 105, 106, 107 Introduction to Chinese Linguistics

Jpn 105-106-107 Introduction to Japanese Linguistics

South Asian

Ben 75 Structure of Bengali
Ben 106 Bengali Syntax
Guj 75 Structure of Gujarati
Hndi 75 Structure of Hindi
Hndi 106-107 Hindi Linguistics
Hndi 108 Semantic Structure of Hindi
Hndi 205 Seminar: Indian Languages

Lch 201 Structure of Standard Okinawan
Lch 202 Readings in Okinawan Linguistics
Lch 203 Comparative Luchuan Linguistics
Mar 75 Structure of Marathi
Mar 106 Marathi Syntax
Mar 107 Marathi Generative Phonology
Skt 55 Sanskrit Sandhi

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Education

EdCI 185 Advanced Course in Teaching of Modern Languages

EdCI 189 Materials and Curriculum Construction in Modern Languages

English

60 Introduction to English Language
133 American Social Dialects
165 Structure of Modern English

166 History of English Language
174 American English

German

80 History of German Language
107-108-109† Structure of Modern German
114-115† Methods of Comparative Ger-

manic Linguistics
122-123† History of German Language

Mathematics

112 Elementary Set Theory

112A-B-C Mathematical Logic

Middle Eastern Languages

Arab 105 Structure of Arabic
Arab 121-122-123 Readings in Arab Gram-
marians

Heb 114 Introduction to Comparative Study
of Semitic Languages

Philosophy

154 Elements of Symbolic Logic
155 Intermediate Symbolic Logic

156 Philosophy of Logic
162 Philosophy of Language

Psychology

Psy 118 Verbal Behavior

CPsy 183 Language Development

Romance Languages

Fren 107, 108, 109 Structure of Modern
French
Rom 114 Introduction to Romance Philol-
ogy

Span 107, 108, 109 Structure of Modern
Spanish

Scandinavian

124 Structure of Scandinavian Languages
125 History of Scandinavian Languages
126 Scandinavian Linguistics

134 Structure of Finnish
135 History of Finnish

Slavic and East European Languages

Russ 107-108-109 Structure of Modern Russian Russ 125-126-127 History of Russian Language

Speech, Communication and Theatre Arts

Spch 67 Phonetics SSPA 121 Acoustic Phonetics
SSPA 120 Anatomy and Physiology of Speech and Hearing Mechanisms SSPA 122 Voice Science

Lithuanian/see Slavic and East European Languages

Marathi/see East and South Asian Languages

Marriage/see Family Studies

Mathematics (Math)/Institute of Technology

● Major Sequence in Arts College—

Prerequisites:

Math 15, 42-43-44

Requirements:

A. Math 55, 106, 107-108 or 125A-125B or 130A-130B

B. At least 21 additional cr in Upper Division mathematics, including at least one 2-course sequence in algebra, geometry, or topology in courses numbered 100 and above

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*.

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)/*Major recommendation:* Entrance credit in solid geometry or equivalent; Math 15, 42-43-44, 60 and 21 additional Upper Division cr. For specific requirements see *College of Education Bulletin*. *Minor recommendation:* Entrance credit in solid geometry or its equivalent; Math 15, 42-43-44, or 60, and 9 additional Upper Division cr.

● **Placement of Students**—The placement decision in beginning mathematics courses is made for every freshman student at the time of admission,

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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 of analytic geometry are referred to the School of Mathematics for an exemption test in Math 15 if their placement score is outstanding.

Honors Courses. There will be offered each year four 2-credit companion courses to Math 15, 42-43-44, designated as Math 15H, 42H-43H-44H. 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 125A-B. A student who enters the University and begins his regular mathematics program with Math 42 is still eligible to take Math 15H.

Graduation with Honors. The Department of Mathematics has a departmental program for honors in mathematics. Application for admission to the program may be made by any well-qualified Arts College major in mathematics, preferably early in his junior year. More detailed information is available at the departmental office, 207 Main Engineering.

Mathematics Courses in Institute of Technology. Certain mathematics courses are specifically set up for students of engineering and the other curriculums in the Institute of Technology. These courses are listed below without descriptions. For descriptions see the *Institute of Technology Bulletin*. Students who begin the sequence 21A-22A-23A, 31-32-33 are advised to remain with the sequence at least through Math 31. Students who begin sequence 15, 42-43-44, 55, 106 should remain with the sequence at least through 44. Students who have completed 31 or 44 can be considered to have completed either one.

P-N Grading System. All students registering for mathematics courses numbered less than or equal to 43 must register on the A-F basis.

LOWER DIVISION COURSES

Zf,w,s Preparatory Mathematics

No cr; supplements background in algebra for students whose background is insufficient; no prereq; 5 hrs per wk; special fee

Covers most of material of high school elementary and higher algebra courses; emphasis on the latter.

Tf,w,s Trigonometry

3 cr; prereq plane geometry, high school higher algebra and Mathematics Placement score; §10

Analytic trigonometry emphasizing identities, equations, and properties of the functions; right and oblique triangles without logarithmic computation.

1f-2w-3s Mathematics

3-3-3 cr, §40, 42 or above for 1...§43 or above for 2-3; 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.

5A-Bf,w,s 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

Includes logical and axiomatic basis of rules for arithmetical operations with integers, rational numbers, and real irrational numbers; real number line and inequalities as necessary background for teaching arithmetic in elementary school, topics from geometry and congruences; with some attention to history of subject and its role in our culture and civilization.

8 Solid Geometry

See *Institute of Technology Bulletin*

10f,w,s College Algebra and Analytic Geometry

5 cr, §10A, 15; 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 quarters of mathematics should take Math 15 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.

10Af,w,s Algebra, Analytic Geometry and Elementary Functions

5 cr, §10, 15, 21A; 1st course of a 2-qr sequence, for students in pre-business administration curriculum and for other students requiring introduction to algebra, analytic geometry, elementary functions, and calculus of one and several variables...students who plan to take several quarters of mathematics should register for Math 15, 42-43-44 sequence; prereq high school higher algebra and T or trigonometry, Mathematics Placement score

Inequalities and elementary set theory, functions and graphs, quadratic equations in two variables, conic sections, complex numbers, theory of equations, mathematical induction, general systems of linear equations, combinations, permutations and probability, vectors and lines and planes in space.

11 Intermediate Algebra

See *Institute of Technology Bulletin*

12 College Algebra and Trigonometry

See *Institute of Technology Bulletin*

14 Laboratory

See *Institute of Technology Bulletin*

15f,w,s College Algebra

5 cr, §10, 10A, 21A; prereq high school higher algebra and T or high school trigonometry and Mathematics Placement score

Standard 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 theorem, probability, mathematical induction, determinants.

20w,s Mathematics of Investment

5 cr; prereq 10 or 15

Simple interest and simple discount, compound interest, annuities with simple data, extinction of debts by periodic installments, bonds, depreciation, perpetuities, capitalization, general annuity formulas.

21A-22A-23A Calculus and Analytic Geometry, I, II, III

See *Institute of Technology Bulletin*

21H-22H-23H Honors Courses: Calculus and Analytic Geometry

See *Institute of Technology Bulletin*

30 Fortran Survey and Orientation

See *Institute of Technology Bulletin*

31-32-33 Calculus and Analytic Geometry IV, V, VI

See *Institute of Technology Bulletin*

31H-32H-33H Honors Courses: Calculus and Analytic Geometry

See *Institute of Technology Bulletin*

40f,w,s Calculus

5 cr, §22A, 40A, 42; for those wishing brief introduction of calculus, including some integration; prereq 15 or 10 and T or high school trigonometry

Students planning further work should take Math 42, functions and limits, differentiation of algebraic, trigonometric, exponential and logarithmic functions with applications to velocity and acceleration, maxima and minima, approximations by differentials. Integration with standard forms with applications to area, volume; simple differential equations.

40Af,w,s Introduction to Calculus of One and Several Variables

5 cr, §22A, 40, 42; a 2nd course of a 2-qr sequence, for students in pre-business administration curriculum and for other students requiring introduction to algebra, analytic geometry, elementary functions, and calculus of one and several variables; students who plan to take several qtrs of mathematics should register for Math 15, 42-43-44 sequence;

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prereq 10A or 15 or 10, T or high school trigonometry

Limits and derivative differentiation of elementary functions of one and several variables; applications to rates of change, maxima and minima, approximations by differentials, integration with standard forms and applications to area volume, simple differential equations.

42-43-44f,w,s Analytic Geometry and Calculus I-II-III

5-5-5 cr, §22A, 40, 40A; 43-44 count as Upper Division cr to all except mathematics and physics majors; may enter 43 from 40 or 40A if grade in 40 is A or B; prereq 15 or 10 or 10A and either T or high school trigonometry

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, dif-

ferentiation of algebraic, trigonometric, inverse trigonometric, exponential and logarithmic functions with application 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 integrals in two and three dimensions.

15Hf-42Hw-43Hs-44Hf 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 42 or beyond are eligible to enter 15H; prereq 15 or §15 for 15H...42 or §42, 15H or § for 42H...43 or §43, 42H for 43H...44 or §44, 43H for 44H

Covers material not in regular courses.

UPPER DIVISION COURSES

Math 55, 60, 63, 106, 107-108 are open to Lower Division students who have an average grade of at least C in the prerequisite courses. Other Upper Division courses are open to sophomores under conditions explained at the beginning of Section II.

55f,w,s Intermediate Calculus

3 cr; prereq 44

Advanced topics in partial differentiation, total differentials, directional derivatives, maxima and minima of functions of several variables, applications of multiple integrals, Taylor's theorem for functions of several variables, elements of differential equations.

57 Actuarial Science Principles—Life and Health Insurance (same as Ins 113)

3 cr; prereq 40A or §

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.

60f,s Synthetic Metric Geometry

3 cr; prereq 21 or 42

Euclidean geometry including ruler and compass constructions and theorems on triangle and circle not studied in high school course in plane geometry.

63 Linear Algebra

3 cr, §149; prereq 1 qtr calculus

Vectors, system of linear equations, matrices, determinants. Groups of transformations, conics, normal forms of matrices.

65 Introduction to Programming Modern Digital Computers

See *Institute of Technology Bulletin*

66A-B The Groups of Plane Geometry

3-3 cr, §60, 80C; prereq 23A or 43

Reflections. Transformation groups, homogeneous spaces. Circle. Metric Geometry. Similarities. Geometric inequalities. Circular transformations. Hyperbolic geometry.

70f, 71w, 72s History of Mathematics

2,2,2 cr; for student with general knowledge of mathematics and some curiosity about historical development of mankind; prereq for any qtr 43 or 23

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. 70: Greek mathematics 71: Creation of calculus 72: Topics in history of mathematics.

80Af Foundations of Arithmetic

3 cr; prereq 44

Sets, relations, order. Real number system. Continuous functions.

80Bw Foundations of Algebra

3 cr; prereq 44

Groups, rings, fields. Applications to number theory and polynomials.

80Cs Foundations of Geometry

3 cr; prereq 60

Axiomatics. Non-Euclidean geometry. Theorems of Desargues and Pappus.

99 Seminar: Mathematical Problems

3 cr; prereq 32; 3 rec hrs per wk

Problems ranging from elementary algebra and geometry through undergraduate mathematics assigned and discussed weekly.

104 Variational Problems in Engineering

3 cr; prereq 153 or 148 or 150 or #

Euler-Lagrange equations, isoperimetric problems, geodesics. Fermat's and Hamilton's principles, vibration and stresses in elastic bodies, methods of Rayleigh-Ritz, Galerkin, Kantorovich, etc., eigenvalues and eigenfunctions.

106f,w,s Differential Equations

3 cr, §32; prereq 55

Problem course, methods for solving ordinary differential equations of various types with necessary theory for developing these methods.

107f,w-108,w,s Advanced Calculus

3-3 cr, §151, 153; prereq 32 or 55

Introduction to analytic theory of limits and continuity, uniform convergence; partial derivatives; differentials; Taylor's theorem for several variables, relative and absolute extrema. Lagrange multipliers; transformations for 2-space and 3-space; basic theory of Riemann single and multiple integrals; line and surface integrals; introduction to vector analysis; theorems of Green and Stokes, divergence theorem; improper integrals; beta and gamma functions.

109s Theory of Numbers

3 cr; prereq 31 or 44

Elementary properties of integers; prime and composite numbers; Euclid's algorithm; congruences; theorems of Fermat and Wilson; primitive roots; indices; Diophantine equations.

110f,w,s Tutorial Course in Advanced Mathematics

Cr ar; prereq 32 or 55

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.

111 Development of Number System

3 cr, §111A-B; prereq 31 or 44

Systematic construction of real number system by extension from natural numbers via rational numbers to irrational numbers; negative numbers; properties of the system; operation with numbers and laws governing operations.

111A-B Development of Number System

3-3 cr; prereq 31 or 44

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.

112f Elementary Set Theory

3 cr; prereq 31 or 44

Basic properties of operations on sets, cardinal numbers, simply ordered sets, well-ordered sets, ordinal numbers, axiom of choice, axiomatics.

112A-B-C Mathematical Logic

3-3-3 cr; prereq 32 or 55 or Phil 155 or #

Propositional and predicate calculi, models for systems of logic, recursive functions, decision and completeness problems.

115A-B-C Differential Geometry

3-3-3 cr; prereq 32 or 55 and 131A or ¶131A

Curves in plane and in space; Frenet formulas, foundations of calculus of variations. Theory of surfaces; fundamental forms; curves on surfaces. Surfaces of constant curvature, non-Euclidean geometry and trigonometry. Minimal surfaces. Deformations; introduction to theory of continuous transformation groups. Differential geometry of n-dimensions; parallelism, affine connection, curvature.

116A-B-C Modern Geometry

3-3-3 cr; prereq 131A or ¶131A for 116B

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 of transformation groups, mathematical analysis of space problem.

117A, B, C Geometry

3,3,3 cr; prereq 31 or 44 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.

119 Topics in Finite Groups

3 cr; prereq 44 or equiv

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.

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120 Group Representations

3 cr; prereq 131A

Elementary theory of finite groups and of infinite Abelian groups with some application to permutation and crystallographic groups; representation by matrices, characters.

125A-W-Bs Critical Reasoning in Mathematical Analysis

3-3 cr; prereq 31 or 44

Notions of limit, sequence, series, function, derivative and integral. Gives more mature understanding of these concepts. Technique of developing accurate proofs; intuition and logic in connection with these techniques.

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 32 or 55
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.

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; preq 32 or 55

Theory of real numbers; elements of point set theory; limits; continuity; infinite sequences and series; integration and differentiation; vector analysis.

Stat 131-132-133 Theory of Statistics

3-3-3 cr; prereq ¶Math 55 for 131, ¶107-108 for 132-133, or equiv

131: Probability models, univariate and bivariate distributions, independence, basic limit theorems.

132-133: Statistical decision theory, sampling, estimation, testing hypotheses, parametric and non-parametric procedures for one-sample and two-sample problems, regression, analysis of variance.

131A-B-C Linear Algebra and Group Theory

3-3-3 cr, §149, 142-143, 180; prereq 31 or 44

Finite dimensional vector spaces; linear transformations and matrices over the real or complex fields; linear equations; determinants; characteristic values; canonical forms; bilinear and quadratic forms; applications; introduction to abstract concepts of modern algebra; more detailed study of finite groups, including Jordan Hölder theorem and basis theory for Abelian groups.

133B-134B Probability with Technological Applications

3-3 cr; prereq Stat 131 and §

Spectral analysis of stationary processes, linear and nonlinear transformations, prediction and smoothing, recurrent events, random walk and diffusion, Markov chains, Poisson processes.

135 Integral Equations

3 cr; prereq 32 or 106

Introduction to integral equations; emphasis on applications and techniques of solution including 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.

136 Solid Analytic Geometry

3 cr; prereq 31 or 43 or ¶31 or ¶43

Algebraic treatment of planes and lines; direction cosines; systems of planes. Cylinders; surfaces of revolution. Quadratic surfaces; tangent planes, ruled surfaces. Coordinate transformations, invariants. General equation of second degree.

140 Projective Geometry

3 cr; prereq 32 or 44

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.

142-143 Vector and Matrix Theory with Applications

3-3 cr, §149, 131A-B-C; prereq 31 or 44

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.

144-145-146 Fourier Series and Orthogonal Functions

3-3-3 cr; prereq 108 or 153 or §

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.

147 Vector Analysis

3 cr; prereq 32 or 55

Scalar and vector products, derivatives, geometry of space curves, del operator, line and surface integrals, divergence and Stokes' theorem, transformation of coordinates, dyadics, applications.

148 Differential Equations

3 cr, §150; prereq 32 or 106

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.

149 Determinants and Matrices

3 cr, §63, 131A; prereq 32 or 55

Determinants, matrices, linear equations, vector spaces, quadratic and bilinear forms, characteristic roots, applications to systems of ordinary differential equations.

150 Ordinary Differential Equations

3 cr, §148; prereq 32 or 106

Linear equations of second order, successive approximations. Existence theorems, systems of ordinary differential equations. Numerical integration and solution by series.

151 Advanced Calculus I

3 cr; prereq 32 or 55

Limits, properties of continuous functions of one and several variables, partial differentiation, implicit functions, maxima and minima, Taylor's theorem, transformations and mappings, integrals containing parameter or variable limits, Stieltjes integral.

153 Advanced Calculus II

3 cr, §108; prereq 151

Infinite series, computation with series, series with variable terms, uniform convergence, power series. Improper integrals. Fourier series and orthogonal functions. Special functions.

155-156 Tensor Analysis with Applications

3-3 cr; prereq 147, 149...or 131A, 147... or #

157-158-159 Methods of Applied Mathematics

3-3-3 cr; prereq 108 or 153 or 130C or #

Integrated study of analytic tools used in applications of mathematics; emphasis on technique. Real and complex variables, matrices, ordinary and partial differential equations, calculus of variations, asymptotic expansions, etc.

161-162-163 Analytical Dynamics

3-3-3 cr; prereq 147, 149...or 131A, 147...or #

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, extremal properties of eigenvalues. Hamilton's equations, transformation theory, separable systems.

164 Theory of Programming Modern Digital Computers

3 cr [cr can be obtained after completion of Math 65]; prereq 32 or 55 or #
Number systems. Complement arithmetic. Logical organization of computer. Basic and advanced absolute machine language programming. Arithmetic operations. Scaling. Introduction to symbolic programming.

165 Theory of Programming Modern Digital Computers

3 cr; prereq 164

Logical operations. Bit and character manipulation. Assembly programs. Symbolic assembly programming. Interpretive languages. Simulators. Libraries. Application. Input-output. Fortran and mixed language programming.

166 Theory of Programming Modern Digital Computers

3 cr; prereq 165

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.

167 Fourier Series and Boundary Value Problems

3 cr, §173; prereq 32 or 106

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.

168A Elementary Theory of Complex Variables

3 cr; prereq 151, 153 or 147, 148, 149 or 108 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.

168B Applications of Complex Variables

3 cr; prereq 168A or #

Conformal mapping, Schwarz-Christoffel transformations, Laplace transforms, and applications.

169 Mathematical Theory of Fluid Flow

3 cr; prereq 146, 174, or 147, 168A, 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.

173-174-175 Elementary Partial Differential Equations

3-3-3 cr, §167, 168A; prereq 32, 55 or 106 or #

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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 to heat, wave, and Laplace equations.

178 Probability

3 cr; prereq 31 or 44

Elementary principles of probability, total and compound probability, expectation, repeated trials, and as time permits topics chosen from following: Stirling's formula, probability integral, geometrical probability, probability of causes, Bayes's theorem, errors of observation, principle of least squares.

178A-B-C Introduction to Probability

3-3-3 cr; prereq 108 or 153 or Stat 133 or #

Logical development and various applications of probability. Probability spaces, random variables, central limit theorem; Markov chains.

179 Lebesgue Integral

3 cr; prereq 107, 108 or 130A, 130B or 151, 153, or #

Basic limit theorems. Comparison with Riemann integral. Lebesgue measure. Absolute continuity.

180 Group Theory

3 cr; prereq 143 or #

Permutation groups; groups related to geometrical configuration; invariant subgroups, Jordan-Hölder composition theorem, Sylow groups, Abelian groups, elementary divisors, representation theory, applications.

181-182-183 Selected Topics in Theory of Numbers

3-3-3 cr; prereq 108 or 153 or #

181A-B Topology of Cartesian Plane

3-3 cr; prereq 32 or 55; 3 rec hrs per wk

Limit points, coverings, compactness, connectedness, arcs, simple closed curves, mappings, Peano continua, Jordan curve theorem.

184 Elementary Numerical Analysis in Engineering

3 cr; prereq 32 or 106

Finite differences, interpolation, summation of series, numerical integration, Euler-

MacLaurin formula and asymptotic expansions. Numerical solutions of systems of algebraic and transcendental equations. Newton's and Graeffe's method.

185-186 Numerical Analysis in Engineering

3-3 cr; prereq 184 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.

187 Non-Euclidian Geometry

3 cr; prereq 31 or 44

Foundations of Euclidean geometry, Euclid's fifth postulate and its implications. Hyperbolic plane geometry and trigonometry. Elliptic plane geometry and trigonometry. Consistency of non-Euclidean geometry.

188 Topics in Topology

3 cr; for undergraduate and beginning graduate student who has not had a course in topology; prereq 31 or 44; 3 hrs per wk

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.

190A-B-C General and Algebraic Topology

3-3-3 cr; prereq 131A or ¶131A

General topological and metric spaces. Function spaces. Fundamental group and covering spaces. Singular and simplicial homology theory. Betti and torsion groups. Fixed point theorems and applications to analysis. Classification of surfaces.

192 Theory of Approximation in Numerical Analysis

3 cr; prereq 168A or 175, 185, or #

Orthogonal functions, Chebyshev approximations, rational approximation, approximations in several variables, use of approximation in computing.

193A Axiomatic Geometry

3 cr; prereq 108 or 153 or #

Axiomatic presentations of Euclidean and non-Euclidean geometries. Vector spaces and metric spaces.

193B Elementary Projective Geometry

3 cr; prereq 108 or 153 or #

Projective space as a global manifold. Homogeneous coordinates and classical pro-

jective spaces. Lattice description of projective space. Theorems of Desargue, Pappus, and Pascal. Quadratic surfaces.

193C Elementary Differential Geometry

3 cr; prereq 108 or 153 or #
Curves and surfaces in Euclidean 3-space. Frenet-Serret formulas for curve. First and second fundamental forms for a surface, Gauss curvature, Meusnier, Euler, Dupon theorems.

196-197-198 Special Functions in Mathematical Analysis

3-3-3 cr; prereq 168A or 175 or #

Asymptotic expansions. Gamma and beta functions. Hypergeometric functions as solutions of differential equations. Bessel functions using Sommerfeld's contour integrals. Legendre functions.

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)/College of Medical Sciences

● Major Sequence in Arts College—

Requirements:

- A. GeCh 4-5†,6; 57A, 57B; OrCh 61, 62, and either OrCh 63 or Biol 60.
- B. Math through 23 or 44.
- C. Phys 7-8-9 (recommended) or 4-5-6.
- D. Biol 49, 50, 51 (recommended) or 1-2†.
- E. Microbiology (total cr 28): 53 or 153, or VMic 53 or Biol 52; MicB 116, 116A, and 121. Additional Upper Division credits in microbiology or acceptable recommended courses to a total of 28 cr.

Honors Program: Microbiology Majors—Information may be obtained in the microbiology office.

Note—MicB 1, Elementary Microbiology (offered through General Extension Division, winter quarter, to Hennepin County Hospital nurses and mortuary science students), is open to students of occupational therapy 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.

53f,w,s 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 biologi-

cal sciences, or #; Schmidt, Johnson, Lindorfer

Lectures, demonstrations, and laboratory instruction in morphology, physiology, taxon-

** Microscope required. Students may obtain use of microscope by purchasing \$3 microscope cards from bursar.

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omy, and ecology of bacteria. Practical applications of fundamental principles.

102s** Medical Microbiology

4 cr; for other than med students; prereq 116; Chapman

Pathogenic bacteria, fungi, and viruses in relation to disease; principles of infection, pathogenesis, and immunity; microbiological techniques for laboratory diagnosis and antibiotic determination.

103s Ecology of Soil Microorganisms (same as Soil 127 and Ecol 138)

4 cr; prereq 53 or 153, or Biol 52 and #; offered 1968-69 and alt yrs; Schmidt

Soil as microhabitat; nature of microbial population of soil; interactions among microorganisms in soil ecosystem, and significant activities of soil microorganisms. Lectures and laboratory.

110s Microbial Genetics

3 cr; prereq 53 or 153 or #; offered 1968-69 and alt yrs; Bradley

Genetic mechanisms in bacteria, bacteriophages, fungi, protozoa, and algae. Mutation; selection; adaptation; cytoplasmic inheritance; patterns of genic recombination; fine structure of genetic material.

111s** Advanced Microbiology

4 cr; for microbiology majors and others interested in biological and chemical aspects of microbes; prereq 53 or 153 and 121 or #; offered 1969-70 and alt yrs; Dworkin

Advanced laboratory in comparative morphology, taxonomy, and physiology of bacteria. Stresses enrichment, isolation, identification, cultivation, structure, and function of microorganisms.

112s General Mycology

3 cr; prereq 53 or 153 or #; offered when feasible; Bradley

Physiology; genetics; development; ecology; evolution; taxonomy; economic importance of yeasts, molds, actinomycetes, and other fungi.

116w Immunology

3 cr; prereq 53 or 153; Muschel

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 diseases; homotransplantation and tumor immunity; mechanisms of natural and acquired immunity.

116Aw Immunology Laboratory

2 cr; prereq 116; Muschel

121w Physiology of Bacteria

3 cr; required of all grad students in microbiology and open to others by #; prereq 53 or 153 (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 oxidations and fermentations; nutritional requirements; antimicrobial agents; autotrophic mechanisms; and microbial differentiation.

124f Biology of Viruses

3 cr; prereq 53 or 153 and 121; 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.

152f,w,s Special Problems

Cr ar; prereq #

153f** Biology of Microorganisms

4 cr, §53; prereq 5 cr in biological sciences, OrCh 61-62 or #; Dworkin, Bradley

Lectures, demonstrations, and laboratory exercises in taxonomy, anatomy, physiology, biochemistry, and ecology of microbes. Emphasis on fundamental properties of bacteria.

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

** Microscope required. Students may obtain use of microscope by purchasing \$3 microscope cards from bursar.

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. and M.A. in Arabic and a B.A. in Hebrew.

General Program—Courses especially recommended for general education purposes are Arab 74-75-76, 77-78-79, 81-82-83, 91, 161, 162, 163, and Hebrew 74, 75.

Arabic (Arab)

● **Major Sequence in Arts College**—Arab 51-52-53, 81-82-83, 101-102-103, 9 cr in courses numbered 50 or above.

LOWER DIVISION COURSES

1f-2w-3s Introduction to Arabic Grammar and Reading
5-5-5 cr
Vocabulary forms and syntax, intensive graded reading and speaking facility.

4f-5w-6s Beginning Spoken Arabic
5-5-5 cr; ¶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.

51f-52w-53s Intermediate Arabic
4-4-4 cr; prereq 3 or #
Readings in simple, classical, and modern prose; constant review of grammar.

78: Various branches of Muslim scholarship in medieval times.

79: Revivalist period from 19th Century to present with reference to transmission of ideas and to various intellectual movements.

54f-55w-56s Dialect Analysis
3-3-3 cr; prereq 5
Study of differences in various Arabic dialects, contrasting at least two of these.

81f-82w-83s Survey of Arabic Literature
3-3-3 cr; prereq 63 or #; knowledge of Arabic required of majors only
Pre-Islamic, Umayyad, Abbasid, and modern prose and poetry at advanced level.

61f-62w-63s Arabic Composition
3-3-3 cr; prereq 53 or #
Introduction to various styles of prose compositions in Arabic, and setting themes for compositions in Arabic.

91s Asian Civilization: Islamic World
3 cr; prereq soph with #, or jr

74f-75w-76s History of Arabs
3-3-3 cr; prereq # for 74; Chejne

101f-102w-103s Advanced Literary Arabic
3-3-3 cr; prereq 53 or #; Chejne
Reading and analysis of both early classical texts and modern writings. Emphasis on structure, syntax, and style.

74: From pre-Islamic days to downfall of Umayyads of Damascus.

75: From Abbasids to fall of Baghdad in 1258.

76: From Crusades to modern times.

105w Structure of Arabic
3 cr; prereq 2 yrs of Arabic or #
Descriptive analysis of main structure of Arabic, classical and colloquial.

77f-78w-79s Intellectual Life in Islam
3-3-3 cr; prereq # for 77...78 or # for 79; Chejne

77: Rise of Muslim scholarship during 1st Century of Islam.

**121f-122w-123s Readings in Arab Gram-
marians**
3-3-3 cr; prereq 103

150 / Course Offerings and Major Requirements

- 131f-132w Readings in Classical Arabic Literature**
3-3 cr; prereq 103
- 141f-142w-143s Readings in Legal Texts**
3-3-3 cr; prereq 103 or #
- 145f-146w-147s Readings in Islamic Theological and Philosophical Texts**
3-3-3 cr; prereq 103 or #
- 151f-152w-153s Directed Readings**
1-3 cr per qtr; for advanced students wishing to work on special problems; prereq 63 or #
Reading and periodic consultations.
- 154f-155w-156s Seminar: Development of Arabic Language and Literature**
3-3-3 cr; prereq # for 154
- 154:** Early state of Arabic language from pre-Islamic times to middle of 8th Century.
155: Development in Golden Age of Abbasid.
156: Decline of language and its revival in modern times.
- 157f-158w-159s Arabic Literature in the 19th-20th Centuries**
3-3-3 cr; prereq 103 or #
- 161f Hispano-Arabic Literature and Culture: Arab Philosophy in Spain**
3 cr; prereq #; Chejne
- 163s Hispano-Arabic Literature and Culture: Hispano-Arabic Literature**
3 cr; prereq #; Chejne
- 166 Hispano-Arabic Poetry**
3 cr; prereq 163 or #
- 167 Ibn Hazm of Cordova**
3 cr; prereq 163 or #
- 168 Ibn Khaldun**
3 cr; prereq 163 or #
- 191H-192H-193H Honors Course: Research**
1-3 cr per qtr; prereq 153 or #
Individual studies for honors work at advanced level.

Aramaic (Aram)

UPPER DIVISION COURSES

- 101f-102w-103s Aramaic**
3-3-3 cr; for students preparing for Biblical studies, ancient history majors, and students specializing in semitic languages; prereq Arab 53 or #
- Introductory course stressing fundamentals of grammar and fluency in reading of Biblical and ancient Aramaic, including Aramaic parts of Daniel and Ezra, inscriptions and papyri from Syria, Egypt, Mesopotamia and Persian Empire.

Hebrew (Heb)

- Major Sequence in Arts College—61-62-63; 64-65-66 and at least 12 other cr in courses numbered above 53 with the exception of 74, 75, and 78, of which only 3 cr may be applied toward the major.

LOWER DIVISION COURSES

- 1f-2w-3s Beginning Hebrew**
5-5-5 cr; Paradise
- Introduction to Biblical Hebrew. Fundamentals of grammar, written and oral exercises, stressing basic vocabulary of Biblical Hebrew. Reading of selected chapters of book of Genesis. May serve as foundation for Modern Hebrew.
- 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.

UPPER DIVISION COURSES

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

51f-52w-53s Intermediate Hebrew

4-4-4 cr; for students wishing to further their Hebrew studies beyond elementary level; open to qualified Lower Division students; prereq 3 or qualifying exam
Selected readings from narrative portions of *Bible*; readings in medieval and modern prose.

61f-62w-63s Advanced Hebrew**

3-3-3 cr; prereq 53 or ‡; Toledano
Intensive reading in prose and poetry from entire range of Hebrew literature. Regularly assigned compositions and class discussion conducted chiefly in Hebrew.

64f-65w-66s Survey of Biblical Literature**

3-3-3 cr; prereq 53 or ‡; Paradise
Extensive reading of selected biblical books designed to acquaint advanced student with variety of literary genres in *Bible* and to expose him to some of scholarly trends in Biblical studies.

64: Historical books.

65: Prophetic literature.

66: Poetical books.

67f-68w-69s Problems in Biblical Studies**

2-2-2 cr; for majors and others adequately prepared to read *Bible* in Hebrew; prereq 66 or ‡; Paradise

71f-72w-73s Rabbinical Texts**

2-2-2 cr; prereq 63 or 66 or ‡; offered 1968-69; Toledano
Selections from Talmud, Midrash, and Codes

74f, 75w 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. Special attention to bearing of civilizations of ancient Mesopotamia and Egypt on cultural and social aspects of *Bible*.

78 Post-Biblical Jewish Thought

3 cr; no knowledge of Hebrew required; Toledano

Development of philosophical, ethical, and legal concepts from Talmudic times through medieval period. Introduces student to

major works of such Jewish thinkers as Philo, Josephus, Saadia, Halevy, Maimonides, and others.

81f-82w-83s Medieval Hebrew Literature**

2-2-2 cr; prereq 63 or 66 or ‡; not offered 1969-70; Toledano

Survey of representative writers and thinkers.

81: *belles lettres* with emphasis on Halevy, Ibn Gabriol, and Al-Harizi.

82: Philosophic texts—*Moreh Nebukim*, *Kuzari*.

83: Medieval Exegetes—Rashi, Kimchi, Ibn Ezra, Nachmanides.

91H-92H-93H Honors Course

3-3-3 cr; prereq candidate for honors in Hebrew

Organized around significant theme or problem in Hebrew studies (e.g., various interpretations of phenomenon of Biblical prophecy in post-Biblical thought). Different staff members lecture and conduct discussions on assigned reading within area of their special competence. Writing honors papers under guidance of those professors whose areas have been chosen.

94 Modern Hebrew Essay

2 cr; prereq 63 or ‡; not offered 1968-69; Toledano

Studies of selected essays of Ahad Ha'am, Krochmal, Berditchevsky and Frischmann.

95 Modern Hebrew Short Story

2 cr; prereq 63 or ‡; not offered 1969-70; Toledano

Readings from prose of 19th and 20th centuries including selections from Mendele, Peretz, Agnon and others.

96 Modern Hebrew Poetry

2 cr; prereq 63 or ‡; not offered 1968-69; Toledano

Selections from work of important modern Hebrew poets, such as Bialik, Tehernichovsky, Lamdan, and others.

104f-105w-106s Postbiblical Literature

3-3-3 cr; prereq 53 or ‡; Toledano
Selections from various genres of post-Biblical literature including philosophical, literary, legal, and religious texts.

** Students wishing to enter course out of sequence must consult with instructor.

152 / Course Offerings and Major Requirements

114s Introduction to Comparative Study of Semitic Languages

3 cr; prereq grad or # and 1 yr of two semitic languages, ¶Heb 3; Paradise

Historical survey of linguistic development in semitic languages. Selected problems in phonology and morphology.

151f-152w-153s Directed Readings

1-3 cr per qtr; for advanced students wishing to work on special problem; prereq 53 or #

171f-172w-173s Northwest Semitic Inscriptions

3-3-3 cr; prereq 53 or #

Study of 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.

191H-192H-193H Honors Course: Research

3-3-3 cr (may be repeated for credit); prereq 153 or #

Independent research on topic of interest to student under guidance of faculty member.

Persian (Pers)

LOWER DIVISION COURSES

1f-2w-3s Introduction to Persian Grammar and Reading
5-5-5 cr

Vocabulary forms and syntax, intensive graded reading and speaking facility.

UPPER DIVISION COURSES

51f-52w-53s Intermediate Persian

4-4-4 cr; prereq 3 or #; offered when feasible

General review of essentials of grammar, some translation, and selected reading in medieval and modern prose.

Reading and analysis of both medieval texts and modern writings.

101f-102w-103s Advanced Literary Persian

3-3-3 cr; prereq 53 or #; offered when feasible

151f-152w-153s Directed Readings

1-3 cr per qtr; for advanced students wishing to work on special problems; prereq 53 or #; offered when feasible

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 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 the B.A. degree, or for credits outside the major and minor.

LOWER DIVISION COURSES

(Preprofessional Division)

Military Science I

11f 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.

12w 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.

13s 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.

UPPER DIVISION COURSES

(Professional Division)

Military Science III

131f 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.

132w 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.

Military Science II

21f 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.

22w 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.

23s Foundations of National Power

2 cr; prereq Δ ; Leadership Laboratory**
Discussion of levels of military force to include various types of military force.

133s 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.

Military Science IV

141f 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.

** 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.

154 / Course Offerings and Major Requirements

142w 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.

143s 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 applied music, theory, composition, music history and literature, and ethnomusicology. 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. This program is described in detail on page 15.

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, and music history and literature 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.

● **Requirements for Music Majors**—Students majoring in music must fulfill the requirements of both the Lower and Upper Divisions. A total of 144 cr in courses other than applied music (piano, voice, trumpet, etc., Mus 11 through 30 and 61 through 80) 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 glee club, or in a combination of any of these, for a minimum of 6 quarters.

Music majors are required to attend the weekly Music Hours and a minimum of five departmental concerts per quarter.

** 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.

156 / Course Offerings and Major Requirements

Mus 121-122-123—Advanced Harmony (6) Composition Major: Mus 127-128-129—
Mus 141-142-143—Orchestration (6) Composition (6) plus 9 elective Upper
Division cr in music

E. Piano Pedagogy—Total of 30 cr in Mus 11 and 61, Piano. A public performance is required.

(Credits shown in parentheses)

Mus 84—Form and Analysis (3) Mus 180-181-182—Piano Pedagogy II (6)
Mus 97-98-99—Counterpoint (6) 9 additional Upper Division cr in music
Mus 170-171-172—Piano Pedagogy I (6)

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 164.

● **Music Minors**—Students intending to minor in music under the OLD graduation requirements (see page 257) are invited to consult a departmental adviser.

For an appreciation of and cultural background in music, Mus 1 (or 50), 51, 52, 53, 31, 32, 33 are recommended. For those interested in performance (glee clubs, orchestra, chorus, band) elective credits granted for Mus 39 through 49 (open to students in all colleges; consent of instructor required).

LOWER DIVISION COURSES

1f,w Introduction to Music

5 cr, \$50 (see 50); Sutton

Introduction to music in repertory of our culture, exploring selected forms and styles from 17th through 20th centuries. Listening abilities developed through aural analyses of musical textures, recognition of articulation of phrases, periods, and sections leading to an understanding of relationships of large units of musical form. These listening techniques, along with discussion of aesthetic principles, are used to define musical styles.

1Tf, 2Tw, 3Ts Music Theory

3,3,3 cr; primarily for music majors and minors; Argento

Materials and structure of music; melody; tonality; rudiments of counterpoint; texture and form; harmony; sight singing and ear training.

4f,w,s Fundamentals of Music

2 cr; prereq nonmusic major; Lauritzen
Knowledge of piano keyboard, major and minor scales, triads, elementary ear training, rhythmic dictation.

4Tf, 5Tw, 6Ts Music Theory

4,4,4 cr; prereq 3T; Argento

(Continuation of 3T) Organization of materials covered in 1T-3T; melodic, harmonic, and rhythmic concepts; contemporary materials and procedures.

7Af-Bw-Cs Ear Training

2-2-2 cr; primarily for music majors, transfer students deficient in aural aspects of theory

Résumé of aural work included in 1T-6T.

31f, 32w, 33s Music Literature

2,2,2 cr; primarily for those not majoring in music; Kagan

Various styles, forms, types of music, including symphony, opera, chamber music, solo pieces. 31: Baroque and classical periods. 32: Romantic period. 33: Romantic and modern.

34f, 35w, 36s History of Music

3,3,3 cr; prereq 3T; Laudon

Musical styles and forms from 9th to 20th centuries; emphasis on their identification through listening practice. 34: Baroque through early classic. 35: Late classic through modern. 36: Middle Ages through Renaissance.

39f,w,s Women's Glee Club**

1 cr per qtr; prereq #; Schwartz

40f, 41w, 42s Orchestra

1,1,1 cr (music majors may earn total of 12 cr); prereq #; Fischer

Performance of orchestral literature; three concerts annually; players from all colleges are invited to participate.

43f,w,s Chorus**

1 cr per qtr; prereq #; Schwartz

Performance of major symphonic-choral works with Minneapolis Symphony Orchestra, University Symphony Orchestra, and University Concert Band.

43R Resident Oratorio Choir

1 cr; prereq non-credit participation in fall and winter quarter choir; Schwartz

Mixed chorus open to all residents of University campus. Performances each quarter of standard choral literature.

43Sf, 44Sw, 45Ss St. Paul Campus Chorus**

1,1,1 cr; prereq #; Kleinsasser

Prepares for at least one public appearance each quarter as well as for special events connected with St. Paul Campus.

44Af, 44Bw, 44Cs Ensemble

2,2,2 cr; Oberg

Performance of chamber music of great composers; sonatas, trios, quartets, quintets, etc. Includes various combinations of vocal and instrumental chamber ensemble materials.

46f, 47w, 48s Concert Band**

1,1,1 cr; open to men and women of all colleges; prereq #; Bencriscutto (Concert Band Ensembles); Bencriscutto (Symphony Bands I and II)

Rehearsals and appearances cover standard band literature; several appearances each quarter.

49f,w,s Men's Glee Club**

1 cr; open to students on both campuses; prereq #; Kleinsasser

Rehearsals and performances cover standard men's glee club material as well as special arrangements. Group appears for on- and off-campus functions.

Note—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 nonmusic majors.

Lower Division Applied Music

A student may not register for a course in applied music *for credit* (11 through 30) until he has passed the required entrance examination. (Students may not take special examinations in applied music for work done elsewhere while in residence at the University.) A placement test is prerequisite to registration for Upper Division courses in applied music (61 through 80).

Courses numbered from 11 through 30 (Lower Division) and 61 through 80 (Upper Division) carry either 2 cr per quarter (maximum of 10 private half-hour lessons) or 4 cr (maximum of 10 private hour lessons). A minimum of 12 cr is required in Lower Division applied music. A maximum of 36 cr in applied music may count toward a baccalaureate degree.

Applied music courses 11 through 30 and 61 through 80 are offered as electives for nonmusic majors.

● **Applied Music Entrance Requirements for Music and Music Education Majors and Minors—**

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

** Students may receive credit for 2 yrs or 6 qtrs of work completed at University of Minnesota.

158 / Course Offerings and Major Requirements

Haydn, Mozart, or Beethoven, and (c) one of the shorter pieces by a 19th- or 20th-century composer.

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 Nonmusic Majors**—A student who wishes to take applied music as an elective should perform two compositions that reveal his level of performance. When taken for no credit, place the letter v after the appropriate number.

11f,w,s Piano

2 or 4 cr; prereq entr exam; Weiser, Freed, McNab, Ivory

11Af-Bw-Cs ** Piano: Class Lessons

2-2-2 cr; prereq 4 (nonmusic majors), § (others) for 11A

Development of skills at keyboard in harmonization, improvisation, sight reading, accompanying, repertoire, technique.

12f,w,s Voice

2 or 4 cr; prereq entr exam; Schuessler, Knowles, Kroenlein

12Af-Bw-Cs Voice: Class Lessons**

2-2-2 cr; Robinson

13f,w,s Violin

2 or 4 cr; prereq entr exam; Sambuco, Saslav

14f,w,s Viola

2 or 4 cr; prereq entr exam; Fischer

15f,w,s Cello

2 or 4 cr; prereq entr exam; Jamieson

16f,w,s Double Bass

2 or 4 cr; prereq entr exam; Fitch

17f,w,s Flute

2 or 4 cr; prereq entr exam; Opava, Niosi

18f,w,s Oboe

2 or 4 cr; prereq entr exam; Angelucci

19f,w,s Clarinet or Saxophone

2 or 4 cr; prereq entr exam; Fitch, Minnetti, Williams

20f,w,s Bassoon

2 or 4 cr; prereq entr exam; Beckerman

21f,w,s Trumpet

2 or 4 cr; prereq entr exam; Chenette, Tetzlaff

22f,w,s French Horn

2 or 4 cr; prereq entr exam; Binstock

23f,w,s Trombone

2 or 4 cr; prereq entr exam; Weinman, Zellmer

24f,w,s Tuba

2 or 4 cr; prereq entr exam; Walton

** Arts College major students must take individual rather than class lessons in their major instrument. Music education majors will take individual lessons in their major but may take class lessons in their minor instruments. No student may take class lessons for more than 6 credits in 12A-B-C and 27A-B-C.

- 25f,w,s Percussion**
2 or 4 cr; prereq entr exam; Dahlgren, Fine
- 26f,w,s Harp**
2 or 4 cr; prereq entr exam; Miller
- 27f,w,s Organ**
2 or 4 cr; prereq entr exam; Fleischer
- 27Af-Bw-Cs** Organ: Class Lessons**
2-2-2 cr; prereq ‡; Fleischer
- Elementary organ technique, hymn playing, simple organ literature.
- 28f,w,s Harpsichord**
2 or 4 cr; prereq entr exam
- 29f,w,s, Guitar (Classical)**
2 or 4 cr; prereq entr exam
- 30f,w,s Accordion (Classical)**
2 or 4 cr; prereq entr exam; Malmberg, Hane

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*.

UPPER DIVISION COURSES

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

- 50w,s Introduction to Music**
5 cr, §1; open to jr and sr nonmusic students; Laudon
Similar to Mus 1 in organization and basic content but more extensive.
- 51f History of Musical Styles I**
4 cr (formerly 2 cr); for nonmusic majors; prereq 1 or 50; Godt
Romanesque, Gothic, Renaissance, mannerists, and baroque.
- 52w History of Musical Styles II**
4 cr (formerly 2 cr); for nonmusic majors; prereq 1 or 50; Godt
Preclassic, classic, and romantic.
- 53s History of Musical Styles III**
4 cr; for nonmusic majors; prereq 1 or 50; Godt
Late romantic and modern.
- 57f-58w-59s (formerly 66-67-68) Chamber Singers**
2-2-2 cr (may receive cr for 2 yrs or 6 qtrs work); prereq ‡; Schwartz
Small mixed vocal ensemble of select voices. Sacred and secular music from 16th-century to contemporary composers prepared for concert presentation.
- 60 Introduction to Orchestral Repertoire**
2 cr; primarily for nonmusic majors
Twice each week in Northrop Auditorium a distinguished guest conductor delivers a half-hour lecture, then conducts Minneapolis Symphony Orchestra in 2-hour demonstra-
- tion-concert of master works. Emphasis upon structure, elements of orchestral tone color, and roles of performer and conductor.
- 81f,w,s Music Calligraphy**
2 cr; prereq music or music education major; Snesrud
Techniques and forms of notation; manuscript preparation and layout; duplication methods; and general copyright procedure.
- 83su Piano Teachers Summer Workshop**
4 to 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. If teacher registers for 4 cr, he attends 2-hour period of lectures and demonstrations for each day of 5-week summer term. If teacher registers for 6 cr, he is given opportunity to teach, with guidance of instructor, group of four children for 1-hour group lesson twice a week. Lectures and demonstrations may be taken without credit. Credit not available for both 83 and 170-180 sequence.
- 84f,w,s (formerly 76) Form and Analysis**
3 cr; prereq 6T; Argento
Key, harmonic, and form analyses of important contrapuntal and homophonic music.
- 85f History of 20th-Century Music**
3 cr; prereq 36; Argento
Attitudes and accomplishments in 20th-century music.

** Arts College major students must take individual rather than class lessons in their major instrument. Music education majors will take individual lessons in their major but may take class lessons in their minor instruments. No student may take class lessons for more than 6 credits in 12A-B-C and 27A-B-C.

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86Aw Introduction to Musical Research

3 cr; prereq 36 or #; Laudon
Basic methods and materials to assist practicing musician and teacher in locating repertory, authentic editions, biographical material, rare texts, etc.

86Bs Individual Research Project

3 cr; prereq 36 or #; Laudon, others
Research centered on particular student's field of interest and specialization. Preparation of papers, reports, program notes, and similar projects using student's knowledge of theory, history, and research methods.

88Hf Interdisciplinary Honors Seminar: Music, Studio Arts, Theatre

2-4 cr, §ArtS 88H, Th 88H; prereq jr, sr honors cand, #; Argento

89Hw Interdisciplinary Honors Seminar: Music, Studio Arts, Theatre

2-4 cr, §ArtS 88H, Th 88H; prereq jr, sr honors cand, #; Argento

90f, 91w, 92s Ensemble

2,2,2 cr; Oberg
Performance of chamber music of great composers; sonatas, trios, quartets, quin-

tets, etc. Includes various combinations of vocal and instrumental chamber ensemble materials.

93f, 94w, 95s Music in Asian and Pacific Cultures

3,3,3 cr; Kagan
Introduction to the living music as well as ancient traditions of majority of Asia's civilizations. Survey of basic kinds of music and musical instruments, their use and function in Australia, New Guinea and Polynesia, South and East Asia, Southeast Asia and island cultures of Indonesia, Philippines, and Japan.

96Hf,w,s Honors Course: Independent Study

2-6 cr; primarily for departmental honor students; prereq 3.00 GPA
Culminates in senior thesis in music history and literature, or music theory, or normal piano, or an original composition, or a special outstanding recital.

97f-98w-99s Counterpoint

2-2-2 cr; prereq 6T; Fetler
Strict, 16th-century and Bach-style counterpoint in two and three parts; writing of canons, motets, inventions, fugues.

Upper Division Applied Music

12 cr in Lower Division and qualifying exam for Upper Division credit.

61f,w,s Piano

2 or 4 cr; prereq entr exam or placement test; Weiser, Freed, McNab, Ivory

62f,w,s Voice

2 or 4 cr; prereq entr exam or placement test; Schuessler, Knowles, Kroenlein

63f,w,s Violin

2 or 4 cr; prereq entr exam or placement test; Sambuco, Saslav

64f,w,s Viola

2 or 4 cr; prereq entr exam or placement test; Fischer

65f,w,s Cello

2 or 4 cr; prereq entr exam or placement test; Jamieson

66f,w,s Double Bass

2 or 4 cr; prereq entr exam or placement test; Fitch

67f,w,s Flute

2 or 4 cr; prereq entr exam or placement test; Opava, Niosi

68f,w,s Oboe

2 or 4 cr; prereq entr exam or placement test; Angelucci

69f,w,s Clarinet or Saxophone

2 or 4 cr; prereq entr exam or placement test; Fitch, Williams, Minnetti

70f,w,s Bassoon

2 or 4 cr; prereq entr exam or placement test; Beckerman

71f,w,s Trumpet

2 or 4 cr; prereq entr exam or placement test; Chenette, Tetzlaff

72f,w,s French Horn

2 or 4 cr; prereq entr exam or placement test; Binstock

73f,w,s Trombone

2 or 4 cr; prereq entr exam or placement test; Weinman, Zellmer

74f,w,s Tuba

2 or 4 cr; prereq entr exam or placement test; Walton

75f,w,s Percussion

2 or 4 cr; prereq entr exam or placement test; Dahlgren, Fine

76f,w,s Harp

2 or 4 cr; prereq entr exam or placement test; Miller

77f,w,s Organ

2 or 4 cr; prereq entr exam or placement test; Fleischer

78f,w,s Harpsichord

2 or 4 cr; prereq entr exam or placement test

79f,w,s Guitar (Classical)

2 or 4 cr; prereq entr exam or placement test

80f,w,s Accordion (Classical)

2 or 4 cr; prereq entr exam or placement test; Malmberg, Hane

100f,w,s Advanced Applied Music

2 or 4 cr; prereq entr exam

Advanced literature in piano, voice, organ, and orchestral instruments.

101A,B,C Voice Production for Theatre

2,2,2 cr; limited to grad theatre students, #; Schuessler

Development of voice for speaking and singing in theatre through singing techniques.

102Af, 102Bw, 102Cs Ensemble

2,2,2 cr; Oberg

Performance of chamber music of great composers; sonatas, trios, quartets, quintets, etc. Includes various combinations of vocal and instrumental chamber ensemble materials.

104f-105w-106s American Music

3-3-3 cr; prereq 36, or 9 cr in American history or American studies, #; Riedel

From early colonial times to present through reading and record listening. American Indian music, European folk music on this continent, origin and development of jazz and contemporary American music.

107f Georg Friedrich Handel: Life and Works

3 cr; open to sr and grad in music or music education; prereq 36 or #; offered 1969-70 and alt yrs; 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.

108f Heinrich Schütz: Life and Works

3 cr; prereq 6 cr in music history or history of art or German literature or political history to 1700, or #; offered 1969-70 and alt yrs; Riedel

Influenced by political events; Protestant hymn and psalm literature, its musical elaborations in his works; his importance in fields of madrigal and monody, sacred con-

certo and cantata, and passion: Schütz compared to Bach.

109w Lasso and Palestrina

3 cr; for majors in music, arts, history; prereq 6 cr in music history or Renaissance and baroque art, or political history to 1700, or general history of Western philosophy, or #; offered 1968-69 and alt yrs; Riedel

Council of Trent, its influence on writing and performance of sacred music of 16th century. Madrigal, mass, and motet writing as exemplified in their works; Lasso's cosmopolitan and Palestrina's *a cappella* styles of writing; *Palestrina Style* of 17th and 18th centuries; Caecilianism of 19th and 20th centuries.

110f Music Bibliography

3 cr; prereq one of following: 36, 56, 99, or #; Riedel

General reference sources. Music bibliographical materials in English and other languages; bibliographical drills in music history, theory and composition, music education, applied music.

111su Generalized Style Analysis

3 cr; Godt

Thorough and detailed examination of organizational and structural principles of style, synthesizing a unified approach to music of all periods. Student should be familiar with basic techniques of harmonic analysis, common forms of music, and score reading, and have experience in at least some areas of medieval, Renaissance and baroque music.

112f, 113w, 114s History of Vocal Art

2,2,2 cr; prereq 18 cr in 12 and 62, or #; Schuessler

Significant schools of singing from 1600 to present.

115f, 116w, 117s Vocal Literature

2,2,2 cr; prereq 12 cr in 12, or #; Schuessler

Preparation and performance of representative solo vocal works from major and minor composers.

118f, 119w, 120s Piano Literature

2,2,2 cr; prereq 12 cr in 11, or #; offered 1968-69 and alt yrs; Weiser

Keyboard literature suitable for piano performance from end of 16th century to present; its background and development. Performance illustrations by instructor, recordings.

121f-122w-123s Advanced Harmony

2-2-2 cr; prereq 6T; Argento

Chromatic harmony through analysis of representative 19th and 20th century works.

162 / Course Offerings and Major Requirements

124f-125w-126s History of Opera

3-3-3 cr; prereq 9 cr in history of music or history of art or history of theater or European history from 1600, or #; Argento

Origins of opera; its development as a musicodramatic form through analysis of libretto and music of representative masterpieces of late Renaissance, baroque, classic, romantic and contemporary periods.

127f-128w-129s Composition

2-2-2 cr; prereq 99 and 123; Fetler, Argento

Original work in various forms.

130f Symphonies of Classical Era

3 cr; prereq 6 cr in musical history or art history or political history since 1750 or English or German literature since 1750, or #; offered when feasible; Oberg

Through Mozart and Haydn; evolution of form and style in relation to contemporary thought and art through French Revolution.

130Af Early Romantic Music

3 cr; prereq 36 or #; offered 1968-69 and alt yrs; Riedel

1800-1848 literary and musical influences; form and subjects of Beethoven; orchestral, chamber, piano music; opera; Lied, choral music.

131w Symphonies of Beethoven

3 cr; prereq same as 130; offered when feasible; Oberg

Evolution of Beethoven's symphonic form and style as reflection of intellectual, political, and artistic currents of Napoleonic era.

131Aw Late Romantic Music

3 cr; prereq 36 or #; offered 1968-69 and alt yrs; Riedel

1848-1885. Neoclassicism, Brahms Wagnerian music drama; nationalism in music of Russia, Bohemia, Scandinavia, Spain; mid-19th century French music.

132s Symphonies of Romantic Era

3 cr; prereq same as 130; offered when feasible; Oberg

Schubert, Schumann, Mendelssohn, Berlioz, Liszt, Brahms, Franck, Dvorak, Tchaikovsky, Bruckner, Richard Strauss; their relation to dominant romantic trends of 19th century.

132As Neoromantic Music

3 cr; prereq 36 or #; offered 1968-69 and alt yrs; Riedel

1885-1917. Music of Bruckner, Mahler, Scriabin, Strauss, Schönberg, Reger, Elgar, Puccini, Leoncavallo, Charpentier, Franz, Cornelius, Wulf; impressionism.

133s Baroque Performance Practices

3 cr; prereq sr or grad, 6T, 36, or #; and ability to perform with some facility; offered when feasible; 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.

134f-135w-136s History of Church Music

3-3-3 cr; prereq 36 or #; Riedel

Trends. Relationship of music to various theologies and liturgies.

137f, 138w, 139s Keyboard Harmony

2,2,2 cr; prereq 6T, sr or grad, primarily for piano and organ majors; Oberg

Practical study of diatonic and chromatic harmony at the piano. Realization of figured bass (thorough-bass) music of 17th and 18th centuries. Playing of significant choral, orchestral, and chamber music literature of classical and early romantic periods from open score using all clefs.

140w Interpretation of Choral Masterpieces

3 cr; prereq sr or grad, 6T or #; offered when feasible

Musical and vocal techniques necessary for presentation of great choral composition from Renaissance to 20th century.

140E Interpretation of Choral Masterpieces

3 cr; offered when feasible; Schwartz

Short-term modification of Mus 140.

141f-142w-143s Orchestration

2-2-2 cr; prereq 6T; Argento

Scoring instruments of orchestra for ensemble combinations and full orchestra.

144f, 145w, 146s Bach Through Beethoven

3,3,3 cr; prereq 36; offered 1969-70 and alt yrs; Laudon

Transition from late baroque to galant and classical styles.

147f, 148w, 149s Opera Workshop

2,2,2 cr; prereq ability to satisfactorily sing an aria; Knowles

Student is given opportunity to prepare and perform operatic roles both standard and contemporary. A union of musical and dramatic interpretation is emphasized and student, in addition to his ensemble work, is given scheduled private instruction. All projects and roles sung in English language.

150 Organ Literature

2 cr; prereq grad organ and musicology students, sr with #; Fleischer

Development of organ literature and playing from 14th century to present. Mutual influence of organ construction and composition emphasized, as well as various national schools of organ playing. Demonstration on organ.

151f, 152w, 153s Introduction to Musicology

3,3,3 cr; prereq 110 or §; Riedel, Kagan Scope, aims, methods, and resources of research in musicology including fields of acoustics, psychology, sociology, theory, ethnomusicology, and anthropology. 153 is devoted to ethnomusicology.

154f-155w-156s Music in Middle Ages and Renaissance

3-3-3 cr; prereq 36; offered 1969-70 and alt yrs; Riedel
Monophonic music from period of Gregorian chant to English madrigal school.

157f, 158w, 159s German Lieder

2,2,2 cr; prereq 18 cr in 12 or 11, Ger 2, or §

Selected songs with regard to interpretation and style.

157: Schubert, Mozart, Beethoven.

158: Schumann, Brahms, Franz.

159: Wold, Strauss, Mahler.

160f Choral Composition and Arranging

3 cr; prereq 6T, 99, 143 or §
Composition and arranging for choral ensembles—choirs, glee clubs, and chamber groups.

161w-162s Band Arranging

3-3 cr; prereq 6T, 143 or MuEd 65 or §; offered 1969-70 and alt yrs; Bencris-cutto

Scoring for band instruments; creative arrangements for marching or concert bands.

163Af,Bw,Cs Seminar in Choral Techniques, Rehearsal and Performance Practice

2,2,2 cr; prereq §; offered 1969-70 and alt yrs; Schwartz

Art of choral conducting: coordination of hand techniques, breath and sound control, articulation, dynamics, etc.; preparation of choral programs: critical examination of scores for analysis of rehearsal and interpretive problems. Students work with selected groups from University choral ensembles.

164f-165w-166s Music in Baroque Era

3-3-3 cr; prereq 36; offered 1968-69 and alt yrs; Laudon

Development of vocal, instrumental, and sacred styles of baroque era.

170f-171w-172s Piano Pedagogy I

2-2-2 cr; prereq 2 yrs piano, 2 yrs theory, or §

Concerned primarily with group teaching of children both at beginning and advanced levels of piano in following situation: studio piano teacher; pre-piano classes or keyboard experience; piano in the public schools. In addition to demonstration and lecture classes there will be a required laboratory set-up whereby student teacher gains

practical, on-the-spot experience and training in teaching children.

173Aw-173Bs Instrumental Conducting

3-3 cr; prereq §
Advanced study of art of instrumental conducting—conducting techniques, score analysis, performance practice.

174f Advanced Ear Training

3 cr; prereq 6T or §; Fetter
Dictation of melodic, harmonic, and rhythmic materials in variety of styles. Introduction to contemporary sonorities.

175 Training in Advanced Musicianship

3 cr; prereq 6T; Fetter
Dictation of melodic, harmonic, rhythmic, and contrapuntal materials. Strong emphasis on 20th-century tone combinations, meters, and rhythms. Tonal, polytonal and atonal exercises. Training in tonal memory.

177s Analysis of Contemporary Music

3 cr; prereq 6T; Fetter
Twentieth-century styles and techniques including works of Bartok, Hindemith, Stravinsky, Schönberg, and others.

180f-181w-182s Piano Pedagogy II

2-2-2 cr; prereq 2 yrs piano, 2 yrs theory, or §

Concerned primarily with group teaching of adults both at beginning and advanced levels of piano in following situations: piano minor, piano major, music education piano major, nonmusic major, in college teaching. Also adult education and extension classes, along with public school teacher. In addition to demonstration and lecture classes there will be a required laboratory set-up whereby student teacher gains practical, on-the-spot experience and training in teaching adult students.

183Af-183Bw Choral Conducting

3-3 cr; prereq §; Schwartz
Advanced study of art of choral conducting—the study of hand techniques, sound control, articulation, breath control, intonation, etc.

184s Choral Literature: Small Forms

3 cr; prereq §; Schwartz
Survey of selected sacred music and secular choral music (small forms) from 16th century to present.

185f, 186w, 187s Collegium Musicum

1,1,1 cr; prereq §; Godt
Opportunity for student to realize in performance scores from various periods of our musical culture, medieval through present. Intended that this course will be taken in conjunction with music history. Music studied there will be performed by the Collegium.

164 / Course Offerings and Major Requirements

189f,w,s Performance in Conducting

3 cr; prereq 173B or 183B and #
Preparation and conducting, with documentation, of an ensemble program.

190 Hymnology

3 cr; prereq 6 cr in 34, 35, 36 or Art 56, 57, 58 or Phil 50, 51, 52 or Engl 66-67 or #; Fleischer, Riedel
History of hymn texts and tunes. Byzantine, Lutheran, Anglican, Baptist, Congregational, Methodist, Presbyterian, Unitarian and other hymns. History of hymn books.

191f, 192w, 193s Leiturgia

3,3,3 cr; prereq 34, 35, 36 or #; Riedel, Fleischer
Survey and discussion of liturgies and music from Gregorian chant to 20th century.

194f, 195w, 196s Graduate Piano Seminar

2,2,2 cr; required for all grad students with piano major; open to piano teachers wishing to qualify for MMTA certification; prereq #; Weiser, Freed, McNab
Recognition and discussion of problems in piano study, instruction and performance. Study of terminology, repertory, evolution of piano construction, and performance practice from baroque to contemporary literature.

197, 198, 199 Advanced Counterpoint

2,2,2 cr; prereq 99; Fetter
Analysis of Bach's *Art of the Fugue*; practice in technique of writing three- and four-voice fugues; contrapuntal devices and problems; analysis of polyphonic works of various periods.

Music Education (MuEd)/College of Education

The following course in music education is regularly open to Arts College students:

UPPER DIVISION COURSES

65f,w Instrumentation

3 cr; prereq Mus 6T
Theoretical study of orchestral and band instruments, in combination; revision of ma-

terials 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 1-2†,3 is intended for students desiring an introduction to the total field of science, 4-5† for those desiring an acquaintance with the physical universe. (Biol 1-2† is offered by the College of Biological Sciences for those wishing to explore the world of life.)

Students taking NSci 1-2†,3 may not receive credit for NSci 4-5†. Students who have taken the elementary course of any science department may not register for the corresponding portion of these courses.

LOWER DIVISION COURSES

1f-2w† Orientation in Natural Sciences

5-5† cr, §equiv courses in 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: Astronomy and physics.

2: Chemistry and geology.

3 Orientation in Natural Sciences

5 cr; prereq 2 or college physics and chemistry, or #; Graubard

Foundations of modern biology with stress on function, development, heredity, and evolution.

4f,w-5w,s† 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.

6s Physical World
4 cr; prereq 5 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.

171f, 172w, 173s 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 designed to give those students enrolled in the Naval ROTC program a background in naval subjects to prepare them upon graduation to receive a commission in the Navy, Naval Reserve, Marine Corps, or Marine Corps Reserve. This course, however, is available to the student in any college of the University. For information concerning the requirements 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

11f Naval Orientation
3 cr
Naval customs. Organization for national security. Naval leadership. Forms of modern naval warfare.

12w-13s Sea Power
3-3 cr; prereq 11 or ‡
Survey of sea power's influence on history from ancient times to present.

2nd Year

21f-22w-23s Naval Weapons and National Policy
0-3-3 cr; prereq 11, 13 or ‡
Underlying reasons and circumstances under which family of naval weapons is developed; impact of these developments on naval warfare; influence of weapons on national policy and those considerations of national policy which govern and influence development of weapons; integration of family of naval weapons into modern effective naval weapons systems, and possible courses of future development of naval weapons systems.

UPPER DIVISION COURSES

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

166 / Course Offerings and Major Requirements

I. Line Sequence

3rd Year

51f Naval Operations

3 cr

Elements of shipboard operations; relative motion, tactical communications, rules of nautical road, and naval maneuvering.

52w Naval Operations: Introduction to Navigation

3 cr

Fleet communications and meteorology. Dead reckoning, piloting, and electronic navigation.

53s Celestial Navigation

3 cr; prereq high school trigonometry or Math T or #

Theory and practical application of navigation using stars, sun, moon, and planets.

4th Year

61f Naval Engineering

3 cr; prereq high school trigonometry and algebra or Math Z and Math T or #

Beginning principles of marine engineering; stress on control so student can manage moderate-size steam plant. Basic thermodynamics and limitations; energy, entropy, temperature. Mass transfer, equilibrium, irreversibility of ideal gas state vs steam cycle. Derivation of statics and dynamics of floating hull.

62w Naval Engineering and Naval Management

3 cr; prereq 61 or #

Propulsion plant control: regulatory features, necessity, drawbacks, influence on plant economy; alternative methods of operation. Design problems. Principles and foundations of naval and personal management. Intent and application of Uniform Code of Military Justice.

63s Principles of Naval Leadership

3 cr; prereq 62 or #

Management psychology, individual differences, group dynamics, and art of manipulating these to produce a desired good.

II Marine Corps Sequence

3rd Year

54f Evolution of Art of War I

3 cr

Evolution of warfare from earliest recorded times to and including Mexican War.

55w Evolution of Art of War II

3 cr

Continuation of evolution of art of war, to include Civil War campaigns, World Wars I and II, plus consideration of U.S. military and foreign policy.

56s Modern Basic Strategy and Tactics

3 cr

Theoretical principles behind modern strategy and tactics.

4th Year

64f Amphibious Warfare I

3 cr

Evolution of current amphibious warfare techniques and doctrine from Gallipoli to Korean War.

65w Amphibious Warfare II

3 cr

Introduction to doctrinal techniques and present concepts to include planning, embarkation, rehearsal, support, and logistics.

66s Leadership

3 cr

Functioning of Uniform Code of Military Justice. Service leadership as pertinent to Marine Corps.

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, Sociology.

See under respective departments for courses.

Norwegian/see Scandinavian

Oriental/see East and South Asian Languages

Persian/see Middle Eastern Languages

Personal Orientation/see Psychology

Philology/see Classics

Philosophy (Phil)

● Major Sequence in Arts College—

Prerequisite:

Phil 1 and 2. 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 52 or 52H, 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 100 or above

Phil 1, 2, 3, and 4 are introductory. They may be taken singly or in any order. The sections of 1, 2, and 3 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 230).

LOWER DIVISION COURSES

1f,w,s Problems of Philosophy

5 cr; open to 3rd-qtr fr

Introduction to permanent problems; principal methods and schools of philosophy; historical and contemporary views.

2f,w,s Logic

5 cr; open to fr

Difference between logical and fallacious reasoning; functions and uses of language; rules of good definition and sound argument.

3f,w,s Ethics

5 cr; open to 3rd-qtr fr

Examination of problems that arise when human beings attempt to think systematically about conduct and values.

4f Political Philosophy

5 cr; Murphy

Nature of law and the state. Philosophical foundations of such political ideologies as democracy, communism, and fascism.

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.

168 / Course Offerings and Major Requirements

Attention is called to Indic 1, 2, 3, 10, 11, 12, 55 and 130 and Sanskrit 131-132-133 listed under East and South Asian Languages, and to Physics 150 (History of 20th Century Physics).

- 50f, 51w, 52s, 53f 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.
- 50:** Greek philosophy, pre-Socratics, Socrates, Plato, Aristotle.
- 51:** Stoicism, Epicureanism, and medieval Christian synthesis.
- 52:** Early modern philosophy from Descartes through Hume; impact of science; backgrounds of contemporary philosophical problems.
- 53:** Later modern philosophy from Kant through 19th Century.
- 50H, 51H, 52H, 53H Honors Course: General History of Western Philosophy**
4,4,4,4 cr; prereq §
Basic content same as Phil 50, 51, 52, 53. Students enrolled attend an honors recitation section and have special assignments.
- 70 Logic of Scientific Reasoning**
3 cr; prereq 2; Maxwell, Hanson
Introduction to principles of scientific method, including survey of various contemporary approaches to scientific inference.
- 90H, 91H, 92H Honors Course: Undergraduate Seminar**
3,3,3 cr; prereq honors registration 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.
- 93H, 94H Honors Course: Thesis**
3,3 cr; prereq sr, honors registration in philosophy, GPA of 3.50 or better in previous work
Individual assignments carried out under direction of faculty member.
- 101f Principles of Philosophy**
4 cr, §1; prereq sr or grad; offered when feasible
Topics include knowledge, meaning, truth, reality, mind and nature, human values, and action.
- 105f Introduction to American Philosophy: Puritanism to Pragmatism**
3 cr; especially for students of American history and literature; offered when feasible
Puritanism, the Revolutionary period, transcendentalism, and evolutionism.
- 106w American Philosophy from William James**
3 cr; prereq Phil 1 or 1 qtr history of philosophy or §; Potter
Among philosophers discussed: Peirce, James, Dewey, Lewis.
- 107 Philosophy in 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.
- 108w Political and Social Ethics**
3 cr; prereq 3 or §; offered 1969-70 and alt yrs; Mason, Murphy
Ethical principles, theoretical and practical, at basis of social order.
- 109f History of Ethics: British Moralists**
3 cr; prereq Phil 3 or 1 qtr history of philosophy or §; offered 1969-70 and alt yrs; Terrell
Ethical theory as developed in Great Britain from 17th through 19th centuries.
- 110f History of Ethics: Selected Classical Moralists**
3 cr; prereq Phil 3 or 1 qtr history of philosophy or §; offered 1968-69 and alt yrs
Moral philosophy outside of British tradition (see 109). Specific topics announced in *Class Schedule*.
- 112f Plato**
3 cr; prereq 50 or §; Cohen
Philosophy of Plato based on analysis of major dialogues.
- 114w Aristotle**
3 cr; prereq 1 qtr history of philosophy or §; Matthews
Philosophy of Aristotle based on analysis of selected passages from his works; attention given to his relationship to Plato.
- 116 Plato and Aristotle**
3 cr; prereq 50 or §; offered when feasible; Cohen, Matthews
Comparative presentation of their metaphysical and epistemological views; special reference to problem of universals.
- 118 Medieval Philosophy**
3 cr; prereq 50, 51 or §; Matthews
Selected topics in writings of several medieval philosophers (e.g., Augustine, Anselm, Aquinas, Scotus, and Ockham).

120 Rationalism
3 cr; prereq 52 or #; offered when feasible

Philosophies of Descartes, Spinoza, and Leibniz.

121 Descartes
3 cr; prereq 52 or #; offered 1968-69 and alt yrs; Lewis

Analysis of philosophical works.

122 Spinoza
3 cr; prereq 52 or #; offered when feasible

Philosophy of Spinoza based primarily on analysis of his *Ethics*.

123 Leibniz
3 cr; prereq 52 or #; offered when feasible; Lewis

Philosophy of Leibniz based on analysis of selected philosophical writings.

129 Locke
3 cr; prereq 52 or #; offered 1969-70 and alt yrs; Lewis, Terrell

Detailed study of the *Essay Concerning Human Understanding*.

130 Berkeley
3 cr; prereq 52 or #; offered 1968-69 and alt yrs; Lewis, Terrell

Detailed study of Berkeley's philosophical works.

131 Hume
3 cr; prereq 52 or #; Terrell

Detailed study of Hume's *Treatise and Inquiry*.

132 Later Empiricism
3 cr; prereq 52 or #; offered when feasible; Terrell

Major developments in empiricist traditions, principally in Great Britain, between Hume and Russell.

134 Kant
3 cr; prereq 52 or 53 or #; Mason, Murphy

Philosophy of Kant based on analysis of selected passages from his major works.

136 Brentano
3 cr; prereq 52 or #; offered when feasible; Terrell

Philosophy of Franz Brentano, and its significance in background of contemporary philosophy.

137w Kierkegaard
3 cr; prereq 1 qtr history of philosophy or #; Mason

Detailed examination of major philosophical works.

138 Contemporary Existentialism
3 cr; prereq 52 or 53 or 137 or #; Mason

Selected topics in writings of existentialist philosophers since Kierkegaard.

140 Survey of Contemporary Philosophy
3 cr; prereq 52 or #

Current systematic and critical philosophies, as represented by their principal exponents.

141, 142, 143, 144, 145 Studies in Contemporary Philosophers
3,3,3,3,3 cr; prereq 52 or #

Intensive studies of works of selected individual philosophers. Specific topics will be announced in *Class Schedule*.

146, 147, 148, 149 Selected Topics in Philosophy
3,3,3,3 cr; prereq one qtr history of philosophy or #

Intensive studies of selected philosophical problems of contemporary interest. Specific topics will be announced in the *Class Schedule*.

150s Ethical Theory
3 cr; prereq 3 or #

Distinguishing characteristics of a moral judgment; examination of representative theories.

151w Principles of Aesthetics
3 cr; prereq 3 cr in philosophy or #; Gunderson

Sample topics: standards of evaluation; aesthetic experience; representation, meaning.

154f Elements of Symbolic Logic
4 cr; prereq 2 or #; Brodbeck, Cohen

Development of a formalized language. Syntax and semantics of sentential and first-order predicate logic, deductive systems.

155w Intermediate Symbolic Logic
3 cr; prereq 154; Brodbeck, Hanson

Axiomatic development of logic; properties of deductive systems.

156s Philosophy of Logic
3 cr; prereq 155 or Math 112A or #; Brodbeck

Selected issues: logic and reality; relation of logic to mathematics; theory of descriptions; paradoxes; identity.

157 Metaphysics
3 cr; prereq 1 qtr history of philosophy, or #; Brodbeck

Some recent attempts to discover general principles characteristic of reality.

158 Theory of Knowledge
4 cr; prereq 2 or #; Feigl

Logical structure and experiential roots of knowledge. Meaning, validity, truth, reason, reality.

170 / Course Offerings and Major Requirements

160 Philosophy of Science

4 cr; prereq 2 or #; Feigl
Meaning, methods, implications of modern science. Basic concepts, presuppositions, and procedures.

162 Philosophy of Language

3 cr; prereq 2, 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.

164 Philosophy of Social Science I

3 cr; prereq 15 cr in philosophy, social science, psychology, education, or history, or #; Brodbeck
Analysis of concepts, theories, and explanation of individual and group behavior; objectivity; purpose; function; freedom.

165 Philosophy of Social Sciences II

3 cr; prereq 164; offered when feasible; Brodbeck
More intensive study of certain topics in 164, plus analysis of models and measurement.

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.

168w Philosophy of Law

3 cr; prereq 1 and 2 or #; offered 1968-69 and alt yrs; Murphy
Concept of law with special focus on contemporary discussion.

169 Nonclassical Logic

3 cr; prereq Phil 155 or Math 112A or #; Hanson
Introduction to modal, many-valued, and intuitionistic logics and various approaches to problem of formalizing notion of entailment.

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.

172 Indian Logic

3 cr; prereq Phil 2 and 3 cr India courses or #
Introduction to Indian theories of argumentation and inference. Indian views on dimensions of language; applications of logic to philosophical problems.

173 Vedanta Philosophy

3 cr; prereq 171 or #
Survey of Vedantic thought from Upanishads to present; special attention to writings of Samkara, Ramanuja, Madhva and their schools.

174 Indian Buddhist Thought

3 cr; prereq 171 or #
Development of characteristic themes of Buddhist philosophy; special attention to major schools of Mahayana.

175 Indian Philosophy of Medieval Period

3 cr; prereq 171 or #
Philosophy of important sects of Hinduism, for example, Saiva Siddhanta, Virasaiva, Srivaisnava, Sikhs. Thought of such philosophers as Nimbaraka, Vallabha, Caitanya.

176 Contemporary Indian Thought

3 cr; prereq 171 or #
Contemporary trends in Indian philosophy; systematic thinkers of present who carry forward classical tradition.

182 Philosophy of Religion

3 cr; prereq 6 cr in philosophy; Matthews
Discussion of ground and sanctions of religion, according to various philosophies.

190f, 191w, 192s Seminar: Philosophy

3,3,3 cr; prereq sr, 9 cr, or #
Topics arranged according to students' interests.

193f, 194w, 195s Seminar: History and Philosophy of Theology

3,3,3 cr; prereq sr or #

Physical Education/College of Education

Physical Education for Men (PEM)

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 activity rating is suitable for the class selected for registration.

All classes meet for the first meeting as indicated in the *Class Schedule*.

A student forfeits his place in class if he is absent the first 2 days 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 fee of \$3 per quarter plus \$1 deposit, or a 3-quarter fee of \$7.50 plus \$1 deposit, starting fall quarter only, is charged students using physical education facilities in classes for which a uniform is required. Uniforms for class work or recreational activity may be rented for \$3 per quarter for PEM classes scheduled in Cooke Hall.

Physical Education for Women (PEW)

College of Liberal Arts 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 3 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 activity rating is suitable for the class selected for registration.

All classes meet for the first meeting as indicated in the *Class Schedule*.

A student forfeits her place in class if she is absent the first day the class meets unless she has notified the office at 101 Norris Gymnasium (373-3403) that she is unable to attend. If a class is closed when a student registers, she should report to the first class meeting for cancellations.

A towel and locker fee of \$3 per quarter plus \$1 deposit is charged students using physical education facilities for class use. Lockers may also be rented for recreational purposes.

Courses: 1 cr unless otherwise indicated

PEM	PEW	
		Adapted
f	f	1A Adapted Activities (prereq #)
w	w	1B Adapted Activities (prereq #)
s	s	1C Adapted Activities (prereq #)
f		1D Adapted Activities (prereq #)
w		1E Adapted Activities (prereq #)
s		1F Adapted Activities (prereq #)
		Aquatics
f	f	2A Diving, Springboard (prereq 5A or equiv—PEM) (prereq 5E or equiv—PEW)**
w		2B Diving, Springboard (prereq 5A or equiv)
s		2C Diving, Springboard (prereq 5A or equiv)

** Coed

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f,w,s	f,w,s	3A Scuba and Skin Diving (prereq 5B or equiv—PEM) (prereq 5C or equiv—PEW)** ††
f,w,s	f,w,s	4A Senior Lifesaving (prereq ability to swim 440 yds)
f,w,s	f,w,s	5A Swimming
f,w,s	f,w,s	5B Swimming (prereq ability to swim 100 yds—PEM) (prereq 5A or equiv—PEW)
	f,w,s	5C Swimming (prereq 5B or equiv)
	f	5D Swimming (prereq 5C or equiv)
	w,s	5E Swimming and Diving (prereq 5C or equiv)
	f,s	6A Synchronized Swimming (prereq 5C or equiv)
f,w,s	f,w,s	7A Water Safety Instructor (prereq current American Red Cross Life-saving Certificate)—2 cr
		Combatives
f,w,s	f,w,s	8A Judo** ††
f,s		8B Judo (prereq 8A or equiv)††
f,w,s	f,w,s	9A Karate** ††
s		9B Karate (prereq 9A or equiv)††
f,w		10A Wrestling
w		10B Wrestling (prereq 10A or equiv)
		Conditioning
f,w,s	f,w,s	11A Conditioning
f,w,s		12A Weight Training
	f,w,s	13A Posture and Individual Exercise
		Dance
f,w,s	f,w,s	14A Ballroom** *
s		14B Ballroom (prereq 14A or equiv)**
f,w,s	f,w,s	15A Folk and Square**
s		15B Folk and Square (prereq 15A or equiv)**
f,w,s	f,w,s	16A Modern** ††
f,w,s	f,w,s	16B Modern (prereq 16A or equiv)** ††
f,w,s	f,w,s	16C Modern (prereq 16B or equiv)** ††
s	s	16D Modern (prereq 16C or equiv)** ††
f	f	16E Modern—Composition (prereq 16C or equiv)—2 cr** ††
w	w	16F Modern—Composition (prereq 16E or equiv)—2 cr** ††
s	s	16G Modern—Production (prereq 16C or #)—2 cr** ††
w	w	16H Rhythmic Analysis (prereq 18A or #)** ††
		Foundations of Physical Activity
w,s		17A Foundations of Physical Activity—2 cr
		Fundamental Movement
f,w,s	f,w,s	18A Fundamental Movement**
		Gymnastics
f,w	f	19A Apparatus
s	w	19B Apparatus (prereq 19A or equiv)
	s	19C Apparatus (prereq 19B or equiv)
w	f	20A Tumbling, Floor Exercise and Trampoline
s	w	20B Tumbling, Floor Exercise and Trampoline (prereq 20A or equiv)
	s	20C Tumbling, Floor Exercise and Trampoline (prereq 20B or equiv)
		Individual and Dual Sports
s	s	22A Angling**
f	f	22B Angling (prereq 22A)**
f,w,s	f,w,s	23A Archery**
s	w,s	23B Archery (prereq 23A)**

** Coed

†† Rent Equipment

†† Furnish own equipment or uniform

f,w	f,w	24A Badminton**
s	w	24B Badminton (prereq 24A or equiv)**
f,w,s	f,w	25A Bowling** §§
f,w,s	f,w	25B Bowling (prereq 25A or 125 avg—PEM) (prereq 120 avg—PEW)** §§
s		25C Bowling (prereq 160 avg)§§
s	s	26A Camping**
s	s	27A Physical Education for Family Living**
f,w,s	f,w,s	28A Fencing**
w,s	w,s	28B Fencing (prereq 28A or equiv)**
f	s	29A Golf
w	s	29B Golf (prereq 29A or equiv—PEW)
s	s	29C Golf (prereq 29B or equiv—PEW)
f	f	30A Hunting**
f,w,s		31A Paddleball—Handball
	f,w	32A Riflemarksmanship §§
w	w	33A Skating, Ice** §§
w	w	33B Skating, Figure (prereq 33A or equiv)** §§
w	w	33C Skating, Figure (prereq 33B or equiv)** §§
w	w	33D Skating, Ice Dancing (prereq 33B or equiv)** §§
w	w	34A Skiing** †† §§
w	w	34B Skiing (prereq 34A or equiv)** †† §§
f,w,s	w	35A Squash Racquets
f,w,s	s	36A Tennis
f,s	s	36B Tennis (prereq 36A or equiv)
s	s	36C Tennis (prereq 36B or equiv)
w,s	s	37A Track and Field
s	s	37B Track and Field (prereq 37A or equiv)
Team Sports		
f,w	w	38A Basketball
w	w	38B Basketball (prereq 38A or equiv)
w	w	39A Curling** §§
f	f	40A Field Hockey**
w		41A Hockey, Ice (prereq 33A or equiv)
	s	42A LaCrosse
f	w	43A Officiating, Touch Football-Basketball (PEM)
		Officiating, Basketball-Volleyball (prereq 38A or 46A or equiv—PEW)
f,w		43B Officiating, Hockey-Basketball-Volleyball
s		43C Officiating, Swimming-Wrestling-Softball-Track
f		44A Soccer
f		44B Soccer (prereq 44A or equiv)
s	s	45A Softball, Slow Pitch (PEM) Softball (PEW)
s		45B Softball, Fast Pitch (prereq 45A or equiv)
f,w	f,w	46A Volleyball**
s	f,w	46B Volleyball (prereq 46A or equiv)
Freshman and Varsity Sports		
s		48A, 49A Freshman, Varsity Baseball (prereq #)
w		48B, 49B Freshman, Varsity Basketball (prereq #)
f		48C, 49C Freshman, Varsity Cross Country (prereq #)
f		48D, 49D Freshman, Varsity Football (prereq #)
s		48E, 49E Freshman, Varsity Golf (prereq #)
w		48F, 49F Freshman, Varsity Gymnastics (prereq #)
w		48G, 49G Freshman, Varsity Hockey (prereq #)
w		48H, 49H Freshman, Varsity Swimming (prereq #)
s		48J, 49J Freshman, Varsity Tennis (prereq #)
s		48K, 49K Freshman, Varsity Track and Field (prereq #)
w		48L, 49L Freshman, Varsity Wrestling (prereq #)

** Coed

†† Furnish own equipment or uniform

§§ Additional charge

Physics and Astronomy/Institute of Technology

Astronomy (Ast)

● Major Sequence in Arts College—Ast 51, 52, 53, 104-105-106, and Math 42-43-44, 55 and 106.

Prerequisites:

Math T and at least 5 cr in chemistry, geology, or physics

For those who do not intend to pursue further studies in astronomy, either as a major or as a minor, the following two courses are recommended: Ast 11 for those who merely wish to become acquainted with the field, and who do not intend to go on in any other science; Ast 51 for those who, while not continuing in astronomy, are intending to take up some other field of science.

LOWER DIVISION COURSES

11 Descriptive Astronomy

5 cr, §51; 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

51 General Astronomy

3 cr, §11; prereq Math T or 10
Brief survey of known facts about our solar system; special emphasis on basic laws that govern motions of planets and some additional discussions of special phenomena such as eclipses, formation of tides. Slightly more mathematical than Ast 11.

servation with telescope as weather conditions permit.

104 Celestial Mechanics

3 cr; prereq Math 32 or 106
Central orbit theory. The two-body problem. Computation of ephemeris. Determination of an orbit from observations.

52 Astrophysics

4 cr; prereq Math 31 or 44 and Phys 50 or 9 with §
Deals mainly with physical characteristics of stars and manner in which these are derived from present-day observations, mainly of spectroscopic nature. Treating sun in more detail, it gives derivation of luminosities, temperatures, masses, and densities of stars with brief summary of thermonuclear processes going on in stars and probable course of stellar evolution.

105 Celestial Mechanics

3 cr; prereq 104
Restricted three-body problem. Gravitational field of earth. Numerical methods applicable to computations of special perturbations. First order theories of motion of moon and of motion of satellite of an oblate planet. Drag perturbed orbits.

53 Stellar Astronomy

3 cr; prereq Math 31 or 44 and Ast 11 or Phys 9
(Continuation of 52) Treats especially the statistical and dynamical picture of our stellar system, double stars, variable stars, and structure of galactic system. As much ob-

106 Celestial Mechanics

3 cr; prereq 105
Applications of contact transformations and Hamilton-Jacobi equation to computation of general perturbations. Delaunay and Hill-Brown theories of motion of moon. Motion of satellite of an oblate planet.

121-122-123 Astrophysics and Stellar Statistics

3-3-3 cr
Introductory course on motions of stars.

Physics (Phys)

● **Major Sequence in Arts College**—Phys 50-51, 100A-101A-102A, 103A-104A-105A, 123; plus 6 cr of a laboratory course chosen from 120, 121, 122, 133, 133A, 134, 136, 144, 146, 148; plus 3 additional cr of physics courses numbered 100 or above. In addition to these physics courses it is strongly recommended that a student study mathematics at least through advanced calculus (i.e., through Math 108 or 153). Students anticipating graduate study in physics should seriously consider selecting physics 108 and 110.

The student will normally prepare for the courses in the major sequence, with the sequence Phys 7-8-9 or with the sequence Phys 21, 21A-22, 22A-23, 23A. Freshmen beginning mathematics study with calculus (i.e., Math 42 or 21) may wish to begin the study of physics with 21, 21A-22, 22A-23, 23A; students beginning a study of physics as sophomores normally select Phys 7-8-9, having begun calculus study as freshmen.

In planning his program, a student should study the prerequisite requirements for the courses he expects to take. In particular, he should note that in order to start the major sequence at the beginning of his 3rd year, a student must have completed Phys 9 or 23, 23A and Math 32 or 106 by the end of his 2nd year.

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 7-8-9 and 50-51. For details of the curricula leading to these two majors see the *College of Education Bulletin*.

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, 1A-2, 2A-3, 3A; 4-5-6; 7-8-9; 21, 21A-22, 22A-23, 23A will not 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 24).

LOWER DIVISION COURSES

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, 1 or # for 2, 2 or # for 3; 3 lect hrs per wk

Demonstration lectures on principles of physics and physical phenomena underlying these principles.

- 1: Mechanics.
- 2: Heat, electricity, and magnetism.
- 3: Wave motion and light.

1A-2A-3A Introductory Physics Laboratory

1-1-1 cr; prereq 1-2-3 or ¶1-2-3; combination of 1-2-3 with 1A-2A-3A may

be used to fulfill laboratory science requirement in CLA but does not serve as prereq for advanced physics courses; 2 lab hrs per wk

Laboratory course given in conjunction with 1-2-3.

4-5-6 General Physics

5-5-5 cr; primarily for premedical students; prereq Math 40A or ¶Math 40A or equiv; 4 lect, 1 quiz, 2 lab hrs per wk

4: Mechanics. 5: Heat and Electricity. 6: Sound and light. Laboratory work is integral part of course.

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7-8-9 General Physics

5-5-5 cr; primarily for students majoring in physics, mathematics, or chemistry; prereq Math 22A or Math 42, Math 23A or ¶Math 23A or Math 43 or ¶Math 43 for 7; Math 44 or ¶Math 44 for 8; 4 lect, 1 quiz, 2 lab hrs per wk

7: Mechanics. 8: Heat, electricity. 9: Sound and light. Laboratory work is integral part of course.

20 Elementary Physics Acoustics

5 cr, §3, 6, 9 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.

21 General Physics

4 cr; prereq ¶21A, Math 22A or ¶Math 22A or Math 42 or ¶Math 42; 4 lect and 1 quiz hr per wk

Classical mechanics.

21A Physics Laboratory

1 cr; prereq ¶21; 2 lab hrs per wk
Laboratory exercises in mechanics.

22 General Physics

4 cr; prereq 21, ¶22A, Math 23A or ¶Math 23A or Math 43 or ¶Math 43; 4 lect and 1 quiz hr per wk
Thermodynamics, sound, geometrical and physical optics.

22A Physics Laboratory

1 cr; prereq ¶22; 2 lab hrs per wk
Laboratory exercises in heat, sound, and optics.

23 General Physics

4 cr; prereq 22, ¶23A; 4 lect and 1 quiz hr per wk
Electricity and magnetism.

23A Physics Laboratory

1 cr; prereq ¶23; 2 lab hrs per wk
Laboratory exercises in electricity and magnetism.

23H Honors Course: General Physics

4 cr; prereq 22, ¶24H, Δ ; 4 lect and 1 quiz hr per wk
Electricity and magnetism.

24H Honors Course: Physics Laboratory

1 cr; prereq ¶23H, Δ ; 3 lab hrs per wk
Parallel to Physics 23H.

UPPER DIVISION COURSES

50 Intermediate General Physics

4 cr; prereq 6 or 9 or 23, Math 31 or ¶Math 31 or Math 44 or ¶Math 44; 4 lect and 1 quiz hr per wk

Special relativity. Atomic view of matter, electricity and radiation. Bohr model of atom. X-rays. Introduction to wave nature of matter and radioactivity.

50A Physics Laboratory

1 cr; prereq ¶50; 2 lab hrs per wk
Parallel to 50.

50H Honors Course: Intermediate General Physics

4 cr; prereq 6 or 9 or 23, Math 31 or ¶Math 31 or Math 44 or ¶Math 44, Δ ; 4 lect and 1 quiz hr per wk

Special relativity. Atomic view of matter, electricity and radiation. Bohr model of atom. X-rays. Introduction to wave nature of matter and radioactivity.

51 Intermediate General Physics

4 cr; prereq 50 and Math 32 or ¶Math 32 or Math 55 or ¶Math 55; 4 lect and 1 quiz hr per wk

Elementary nuclear physics. Introduction to wave mechanics and solid state physics. Selected topics in modern physics.

51A Physics Laboratory

1 cr; prereq ¶51; 2 lab hrs per wk
Parallel to 51.

51H Honors Course: Intermediate General Physics

4 cr; prereq 50H and Math 32 or ¶Math 32 or Math 55 or ¶Math 55; 4 lect and 1 quiz hr per wk

Elementary nuclear physics. Introduction to wave mechanics and solid state physics. Selected topics in modern physics.

52H Honors Course: Physics Laboratory

1 cr; prereq ¶50H, Δ ; 3 lab hrs per wk
Parallel to 50H.

53H Honors Course: Physics Laboratory

1 cr; prereq ¶51H, Δ ; 3 lab hrs per wk
Parallel to 51H.

60-61 Intermediate Physics

3-3 cr; primarily for premedical students and students majoring in biological sciences; prereq 6 and Math 40 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.

70 Industrial Summer Employment

1 cr; prereq 3 yrs academic work plus department 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.

100-102-104 Mechanics, Electricity, and Magnetism

4-4-4 cr, §100A or MM 138 for 100; prereq 9 or 23, Math 32 or 55 for 100; 100 or MM 138 for 102; 4 lect hrs per wk

Theoretical course designed to prepare students for advanced work.

100A-101A-102A Introduction to Analytic Mechanics

3-3-3 cr, §100 for 100A, §100 or MM 138 for 101A; prereq 9 or 23, Math 32 or 55 for 100A; majors in fields other than physics may use MM 138 as prereq for 102A; 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.

103A-104A-105A Introduction to Electric and Magnetic Fields

3-3-3 cr; prereq 9 or 23, Math 32 or 55 for 103A

Classical theory of electric and magnetic fields making free use of vector algebra 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.

108-110-112 Principles of Modern Physics

3-3-3 cr; prereq 51, ¶Math 153 or 108
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.

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.

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.

120, 121, 122 Experimental Atomic and Nuclear Physics

3,3,3 cr; prereq 51 or ¶107 or 108, §; 6 lab hrs per wk; student 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.

123 Thermodynamics

3 cr; prereq 9 or 23, Math 32 or 55

Formulation of basic laws of thermodynamics concerning temperature, energy, and entropy; application to simple systems.

124 Statistical Mechanics

3 cr; prereq 123 or §

Introduction to transport phenomena; principles of statistical mechanics; applications to equilibrium properties of classical and quantum systems.

125 Introduction to Solid State Physics

3 cr; prereq 124 or §

Structure; thermal, magnetic, dielectric, and electronic properties of crystalline solids.

131 Geometrical Optics

3 cr; prereq 15 cr in physics, Math 23A or 43

Fundamentals of ray optics and study of its applications to optical instruments and their components.

133 Physical Optics

3 cr; prereq 15 cr in physics, Math 23A or 43

Wave theory of interference, diffraction, polarization and double refraction; study of their applications.

133A Physical Optics Laboratory

1 cr; prereq 133

Parallel to 133.

134 Experimental Optics Laboratory

3 cr; prereq 15 cr in physics, Math 23A or 43

Selected experiments on interference, coherence, diffraction, polarization and disper-

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sion; atomic spectra; electro and magneto optics; thin films; crystal optics; microwaves, optical pumping and lasers; holography; spatial filtering; nonlinear optics; imaging systems.

135 Contemporary Optics

3 cr; prereq 133 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. Nonlinear optics, electro- and magneto-optics, harmonic generation.

136 Spectrum Analysis Laboratory

3 cr; prereq 15 cr in physics, Math 23A or 43

Measurement of wave lengths, intensities and absorption coefficients in infrared, visible, and ultraviolet regions of spectrum.

144 Electrical Measurements

4 cr; prereq 9 or 23, Math 31 or 44; 3 lect and one 3-hr lab per wk

Ballistic and current galvanometers, magnetic flux measurements, potentiometers, D.C. and audio-frequency A.C. bridges, elementary D.C. and A.C. circuit theory.

146 Vacuum Tube and Transistor Circuits

4 cr; prereq 144 or #; 3 lect hrs and one 3-hr lab per wk

Basic amplifier and power supply circuits; emphasis on applications to physics research.

148 Application of Electronic Circuits

4 cr; prereq 146 or #; 3 lect and one 3-hr lab per wk

Use of tubes and transistors in amplifier, oscillator, and pulse generating circuits employed in physics research.

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 particle-wave questions up to von Laue (1912). Spectra and Bohr atom. Old Quantum Theory; Bohr, Sommerfeld, and others: correspondence principle, multiplet structure (Zeeman and Stark effects), exclusion principle and spin. Compton effect and transition to quantum mechanics. Heisenberg and matrix mechanics. L. de Broglie, Schrödinger, and wave mechanics. Contributions of Born, Dirac, and others. Uncertainty principle. Conclusions.

165 Introduction to Physics of Atmosphere

3 cr; prereq 50, Math 32 or 55

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.

166 Meteorology I

3 cr; prereq 165 or #

Quantitative description of large-scale atmospheric motions. Basic equations of meteorological hydrodynamics are introduced and applied in actual weather situations.

167 Meteorology II

3 cr; prereq 166, 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.

171A-B-C Classical Physics

4-4-4 cr; prereq 104 or both 102A and 105A, Math 153 or 108, #; 3 lect and 1 problem session per wk

Classical mechanics, special theory of relativity, and classical electrodynamics. Application of advanced mathematical techniques to these subjects.

181A-B-C Quantum Mechanics

4-4-4 cr; prereq 110 or equiv, Math 153 or 108 or equiv, #; 3 lect and 1 problem session per wk

Development from first principles. Schrödinger equation, angular momentum, scattering, matrix representations, spin, approximation methods, interaction with the electromagnetic field, systems of identical particles, applications to atomic systems.

190 Introduction to Elementary Particle Physics

3 cr; prereq 181B, #

Discussion and analysis of experiments used to study properties of elementary particles and theoretical ideas currently being used to interpret experimental results.

192 Atomic and Molecular Structure

3 cr; prereq 181C or #; offered 1968-69 and alt yrs

Discussion of atomic and molecular structure; emphasis on interpretation of quantum numbers and selection rules in terms of symmetry. Experimental data will be summarized and compared to theoretical predictions.

194 Introduction to Contemporary Problems in Cosmic Ray and Space Physics

3 cr; primarily for students specializing in other branches of physics; prereq #; offered 1968-69 and alt yrs

Discussion of cosmic rays, their characteristics, and their motion in interplanetary and interstellar medium. Topics in X-ray and radio astronomy.

196 Propagation and Detection of High Energy Particles and Electromagnetic Radiation

3 cr; effectively the 1st qtr of cosmic ray sequence but may be taken by students specializing in other branches of physics; prereq 112, 171C or #

Propagation of energetic particles and electromagnetic radiation through different types of matter, relativistic collisions, considerations relating to particle counting and detection, and various types of detectors.

198 Introduction to Astrophysics

3 cr; prereq 110 and 124 or equiv, or #; offered 1968-69 and alt yrs

Fundamental physics required for understanding astrophysics. Equations of state of normal and degenerate matter, physics of energy generation by nuclear processes, stellar opacity, equations of stellar structure, and cosmic astrophysics.

Physiology (Phsl)/College of Medical Sciences

● Major Sequence in Arts College—Phsl 55-56; 20 cr in approved Upper Division courses in related fields.

LOWER DIVISION COURSES

2w Human Physiology

4 cr (will not count for cr 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, 3 hrs demonstration per wk; King

UPPER DIVISION COURSES

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

51w Human Physiology

5 cr; primarily for nursing and physical therapy students; prereq 1 yr chemistry, biology; 4 hrs lect, 2 hrs demonstration per wk; Love

oral reviews prepared and discussed on tutorial basis.

92H Problems in Physiology

Cr and hr ar; open to honors candidates in physiology only; may be taken 1 or more qtrs; Visscher, others

Laboratory problems selected for each student; written reports prepared and discussed.

55f-56w 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.

101w Human Physiology

8 cr; primarily for dentistry students; prereq courses in physiological chemistry and human or mammalian anatomy; 5 hrs lect, 1 hr conf, 6 hrs lab per wk

60w Human Physiology

6 cr; primarily for medical technology students; prereq college course in organic chemistry, biology, and physics; 5 hrs lect, 2 hrs demonstration per wk

106s Human Physiology

7 cr (4 cr without lab); prereq courses in biology, organic chemistry, and neuroanatomy; 5 hrs lect, 6 hrs lab per wk; Visscher, others

91H Readings in Physiology

Cr and hrs ar; open to honors candidates in physiology only; may be taken 1 or more qtrs; Visscher, others

Topics selected for each student; written or

107f Human Physiology

8 cr (5 cr without lab); cr given independently for 106 and 107; prereq same

180 / Course Offerings and Major Requirements

as for 106; 5 hrs lect, 6 hrs lab per wk;
Visscher, others

110-111 Physics for Biologists

3-3 cr; primarily for premedical students
and students majoring in biological sci-
ences; prereq 6 and Math 40 or Δ ; 3
hrs lect per wk; J S Beck

Atomic molecular and nuclear physics em-
phasizing implications for biological sci-
ences. Topics selected from atomic, molecu-
lar, and nuclear structure; interaction of
electromagnetic radiation with matter; ra-
dioactivity; hydrodynamics; thermodynamics;
kinetic theory and elementary statistical me-
chanics; transport phenomena; reaction
kinetics.

Polish/see Slavic and East European Languages

Political Science (Pol)

● Major Sequence in Arts College—

Prerequisites:

12 cr, composed of Pol 1-2 (6 cr) and A-B (6 cr)

The foregoing preparatory work is 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 50 through 199).
- 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. That seminar experience will include a research paper, and it will replace the former requirement of a non-credit major paper.

● **Majors in International Relations (Foreign Service Training, Area Studies)**—Special programs in international relations and foreign areas will be arranged for students of good standing who desire a general introduction to these fields. Courses are drawn from political science, economics, history, geography, and related departments. Those intending to take the examinations for the United

States Foreign Service are advised to follow such a program and to prepare themselves adequately in modern foreign languages. See page 123 in this bulletin and see the special bulletin, *Programs in International Relations and Area Studies*; consult Professors Sapin, McLaughlin, Turner, Holt, Riggs, or Blue.

Public Administration Program—A distinct field of public administration is not offered by the department, but a number of courses in administration are included in the field of American Governmental Systems and Processes (Pol 120, 121, 122, 130, 131, 176), and one in the field of Comparative Government and Politics (Pol 158). Graduate and professional training in public administration is offered by the Public Administration Center (see page 192).

Honors Program—A departmental honors program is open to students who have a 3.00 grade point average overall, a 3.00 grade point average in Lower Division political science work, and who obtain departmental approval. Honors candidates must complete 33 Upper Division cr in political science. Of these, 24 will be allocated to the satisfaction of modified field requirements; at least two fields must be included, and not more than 12 cr can be taken in any one field. In addition 9 cr will be taken in special honors courses: a junior seminar in the scope and problems of political science (90H; 3 cr), a senior seminar on research preparation, design, and methods in political science (91H; 3 cr), and a senior honors thesis (92H, 93H, or 94H; 3 cr). Candidates for honors must also pass an oral examination by a faculty committee. For admission to the program consult the department's director of honors program.

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation*: at least 36 cr in political science including Pol 1-2, A-B, 25, 40, and at least 18 cr in Upper Division courses.

In lieu of a teaching minor, students will be required to take at least 48 cr in other social science departments. For further information see *College of Education Bulletin*.

● **Note for Graduate Students**—Courses in political science numbered from 100 through 199 may be taken by graduate students for credit, subject to the requirement of additional work over and above that assigned to undergraduates. However, these credits cannot be used to satisfy course requirements for graduate majors in political science. These requirements are stated wholly in terms of graduate seminars (200-level courses), although students deficient in undergraduate training may be required to take as extra work any prerequisite 100-level courses. The 100-level courses 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*.

General Education—Except for Pol 35, 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 or minors in political science. All of the courses in political science, except those numbered 90-99, are available to non-majors on the P-N grading system.

182 / Course Offerings and Major Requirements

LOWER DIVISION COURSES

Af,w-Bw,s The State in Modern World

3-3 cr; nonmajor students may enter either qtr; Lippincott, Fogelman
Examination of principles, structure, operation of modern state. Emphasis on nation state: historical development, democratic government and totalitarian government.

Dw, Es Tutorial: The State in Modern World

3,3 cr; prereq A or B with grade of B or better
Intensive work in selected topics drawn from subject matter of Pol A-B.

If,w,s-2w,s American Government and Politics

3-3 cr
Analysis of principles, organization, procedures, functions of government in United States—national, state, and local. Attention given throughout to current issues.

7w, 8s Tutorial: American Government and Politics

3,3 cr; prereq 1 or 2 with grade of B or better
Intensive work in selected topics drawn from subject matter of Pol 1-2.

25f,w,s World Politics

3 cr; Blue, Riggs

Introduction to contemporary international relations; policies of great powers; nationalism; internationalism.

26f,w American Foreign Policy

3 cr; Blue, Penikis, Sapin
Introduction to institutions and processes which determine American foreign policy.

30s American Public Policy

3 cr; Eidenberg, Eyestone
Analysis of policy to meet major foreign and domestic issues facing American political system; emphasis on forces molding government policy on civil rights, labor and business, military and diplomatic strategy, foreign aid.

35s Quantitative Materials in Political Science

3 cr; prereq soph and 2 or B; Flanigan, RePass
Introduction to techniques of analysis in major areas of political science; emphasis on interpretation of survey studies, scales, blocs, aggregate statistics.

40s Contemporary Political Ideologies

3 cr; Cooperman, Fogelman, Lippincott
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.

UPPER DIVISION COURSES

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

Nonelective Courses

90Hs Honors Course: Research in Political Science

3 cr; open only to majors who have been admitted to political science honors program

Survey of discipline of political science, its central problems and unifying concerns; introduction to important research methods and data available to political scientists.

91Hf Honors Course: Senior Honors Seminar

3 cr; prereq 90H
Readings in great issues and major literature of political science.

92Hf, 93Hw, 94Hs Honors Course: Work in Selected Fields

Cr ar; prereq 18 cr in political science; consult major advisers

95f,w,s Major Paper

No cr; required of all majors except those who complete honors program or one of advanced tutorials, 99A-F; consult major advisers

96f, 97w, 98s Individual Reading and Research in Selected Fields

3,3,3 cr; in exceptional cases only and with consent of advisers, students may register under these numbers to obtain credit for supervised individual reading and research; prereq major and §; consult adviser

Not an organized course.

Political Theory

99A Advanced Tutorial: Political Theory

3 cr; prereq jr or sr, 9 cr in Upper Division courses in political theory field, and §

Training in advanced analysis, with supervised research and writing, in selected areas of political theory.

160f American Political Thought

3 cr; prereq B or 9 cr in social science or §; Cooperman, Shaw

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.

161w Problems of Democracy

3 cr; prereq B or 9 cr in social science or §; Cooperman, Shaw

Analysis of postulates and implications; moral foundations; democratic theory and the economic order; liberty and authority; equality; representation; spiritual order, critics of democracy.

162s Recent Political Thought

3 cr; jr, sr only; prereq B or 9 cr in social science or §; Cooperman, Shaw

Main currents from Marx to present; Marx, Marxism, and their critics; non-Marxist socialism; syndicalism; anarchism; Catholic and Protestant theories; conservatism; pacifism; political thought in law and literature.

163s Political Theory and Utopia (same as Hum 163)

3 cr; prereq B 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.

164f Development of Political Thought: Ancient

3 cr; prereq B 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.

165w Development of Political Thought: Middle Ages

3 cr; prereq B 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.

166s Development of Political Thought: Early Modern

3 cr; prereq B or 9 cr in social science or §; Sibley

Machiavelli; idea of sovereignty; Protestant conceptions; English civil war; Hobbes, Spi-

noza, Locke, idea of progress; Godwin, Burke, Rousseau, rise of romanticism; German idealism.

Comparative Government and Politics

60f, 61w Introduction to Legal Systems (see Public Law)

99C Advanced Tutorial: 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

Training in advanced analysis, with supervised research and writing, in selected areas of comparative government and politics.

141f-142w European Government and Politics

3-3 cr; prereq B or 12 cr in social science or §; Schwarz

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.

143s Government and Politics of Soviet Union

3 cr; prereq B 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.

145f Government and Politics of Scandinavian Countries

3 cr; prereq 6 cr or 12 cr in social science

146w Social Legislation and Social Institutions in Scandinavian Countries

3 cr; prereq 2 or Soc 1

148f Government and Politics of African Countries

3 cr; prereq B or 12 cr in social science or §; Pirro

Political institutions of 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.

149f-150w 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.

184 / Course Offerings and Major Requirements

153f Japanese Government and Politics

3 cr; Benjamin, Turner

Constitutional and political development in Japan; political ideas, government, political parties, and problems.

154w Chinese Government and Politics

3 cr; Benjamin, Turner

Constitutional and political development in China; political ideas, government, political parties, and problems.

155f Latin-American Government and Politics I

3 cr; prereq 2 or #

Analysis of factors such as colonial institutions, economy, social structure, which condition constitutional and political organization.

156w Latin-American Government and Politics II

3 cr; prereq 155 or #

Survey of contemporary political systems; analysis of factors underlying political instability and political change in Latin America.

157s Government and Politics of Developing Areas

3 cr; prereq C or 15 cr in any combination of economics, sociology, and/or anthropology; Holt

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.

158s Bureaucracy and Administration in Developing Countries

3 cr; prereq B or #

Analysis of administrative processes of developing nations; socio-economic influences upon administrative personnel; problems of planning; impact of technical assistance and programmed change upon traditional structures.

159Aw-159Bs Comparative Governmental Systems: Principles and Problems

3-3 cr; prereq 6 cr in any Upper Division comparative government courses or #

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.

196s Proseminar in East and South Asia (see International Relations)

International Relations

99B Advanced Tutorial: International Relations

3 cr; prereq jr or sr, 9 cr in Upper Division courses in international relations, and #

Training in advanced analysis, with supervised research and writing, in selected areas of international relations.

171 Scandinavian Foreign Policy

3 cr; prereq 6 cr in history or political science or #; offered when feasible

175f Diplomacy

3 cr; Penikis

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.

176w U.S. Foreign Affairs Administration

3 cr; Penikis

Control of foreign relations; treaties and executive agreements; structure and functions of foreign affairs agencies. Coordination of agencies; Foreign Service and other overseas agencies.

177s U.S. Foreign Policy

3 cr; Penikis

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.

180f-181w†-182s International Law (Peace)

3-3†-3 cr; McLaughlin

180-181: Relation of international law to individuals, states, international community; jurisdictional problems; survey of principles developed in diplomatic practice, national courts, international adjudications.

182: Status of diplomatic agents and consuls, treaties, arbitration, treatment of aliens, pacific settlement.

183s International Law (Conflict)

3 cr; prereq 181 or #; offered when feasible; McLaughlin

War and hostile measures short of war, military occupation, war crimes, neutrality, collective security sanctions.

184f International Politics I

3 cr; Pirro

Study of state action in international relations; forms of state action; foreign policy-making analysis; capabilities analysis.

185w International Politics II

3 cr; Pirro

Analysis of systems of interaction among nation-states; balance of power, bipolar, and

other types of international system; conflict and cooperation.

186s Regional International Systems

3 cr

Examination and comparison of selected regional systems, past and contemporary; stability and change.

187f International Organization I

3 cr; Riggs

Organization of interaction among nation-states; decision making in international organizations; comparison of national and international political institutions; world organization for collective security and peaceful settlement of disputes.

188w 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.

189s Regional International Organization

3 cr; Riggs, Schwarz

Analysis and comparison of selected regional international organizations; regional defense, social and economic cooperation; relationship between regional and world organizations; economic and political integration.

196s Proseminar in East and South Asia

3 cr; prereq sr; interdepartmental staff (same as Anth 196, Geog 196, Hist 196, Ortl 196) Integrating course for students majoring in East and South Asia area studies program.

Politics and Behavior

51f Field Work in Politics

3 cr; prereq 2; see also 52w, 53s under heading American Governmental Systems and Processes; Backstrom

Field study of political organization, leadership, and activities in local community and state. In election (even-numbered) years course deals with legislative candidates; in alternate (odd-numbered) years, with interest groups.

67f Political Behavior Laboratory

2 cr; prereq 167 or ¶167; Flanigan, RePass

Laboratory exercises illustrating subject matter of political behavior. Analysis of survey research data on political attitudes and voting behavior.

99D Advanced Tutorial: Politics and Behavior

3 cr; prereq jr or sr, 9 cr in Upper Division courses in politics and behavior, and #

Training in advanced analysis, with supervised research and writing, in selected areas of politics and behavior.

137f American Political Parties

3 cr; prereq 2 or #; Sorauf

Role and functions of the party in American government; party composition and organization; process of nomination and policy formulation; regulation of party organization and activities.

138s American Political Campaigns and Elections

3 cr; prereq 2 or #; Backstrom

Examination of national, state, and local campaigns and elections, including field work in local political parties and election campaigns.

167f-168w Political Behavior

3-3 cr; Flanigan, RePass

Political personality and public opinion. Role of attitudes, interests, and values. Voting behavior and elections. Group and organizational behavior. Mass society, elite theory, and group theory. Conceptual approaches and advanced analytic techniques.

American Governmental Systems and Processes

52w, 53s Field Work in Government

3,3 cr; prereq 2; 53 offered when feasible; see also 51 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.

80f National Government in United States

3 cr, §2; not open to sophomores

Special reference to current problems and developments.

81w State and Local Government and Politics

3 cr, §2; not open to sophomores

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.

99E Advanced Tutorial: American Governmental Systems and Processes

3 cr; prereq jr or sr, 9 cr in Upper Division courses in American governmental systems and processes, and #

186 / Course Offerings and Major Requirements

Training in advanced analysis, with supervised research and writing, in selected areas.

107f The American Chief Executive

3 cr; prereq 2 or #; Eidenberg
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.

108w Legislative Organization and Procedure

3 cr; prereq 2 or #; Backstrom, Eidenberg
Congress and state legislatures at work.

109s Judicial Process

3 cr; prereq 2 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.

115f State Government

3 cr; prereq 2 or #; Crew
The states in American federal system; inter-governmental relations with national and local governments; governmental institutions and processes.

116f Introduction to Community Politics

3 cr; prereq 2 or #; Scott
Community political systems in their legal, political, social, and economic environments. Community political behavior and decision making.

117w Community Power Structures

3 cr; prereq 2 or #; Scott
Analysis of political elites and leadership in various kinds of communities.

118s Metropolitan Government and Politics

3 cr; prereq 2 or #; Scott
Development of political and governmental problems in metropolitan areas. Analysis of politics of metropolitan reform.

120f Government and Economic Order

3 cr; prereq 2 or #; Eyestone
Analysis of relation of government to major areas of economy; policy decision making emphasized.

121w Administrative Regulation

3 cr; prereq 120 or 102 or #
Administrative development of regulatory programs; problems of bureaucracy, interest groups, and safeguards.

122w Government and Domestic Public Policy

3 cr; prereq 2 or #
Federal, state, and local policy making in welfare, education, agriculture, labor, business.

123 American Defense Policy

3 cr; prereq 2 or #; Schoettle
Contemporary strategic theory; general and limited war capabilities of United States; American defense policy-making process.

130f Administrative Process I

3 cr; prereq 2 or #
Organization theory and administrative behavior. Problems of centralization, rationality, bureaucratic processes.

131w Administrative Process II

3 cr; prereq 130
Analysis of budgeting, planning, and personnel administration.

176w United States Foreign Affairs Administration

(see International Relations)

Public Law

60f, 61w 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. 60: Roman law and European derivatives. 61: Anglo-American law.

99f Advanced Tutorial: Public Law

3 cr; prereq jr or sr, 9 cr in Upper Division courses in public law, and #
Training in advanced analysis, with supervised research and writing, in selected areas of public law.

101f Principles of American Constitution I

3 cr; prereq 2 or equiv; Chase
Nature of constitutions, judicial review, national-state and interstate relations.

102w Principles of American Constitution II

3 cr; prereq 101 or equiv; Chase
Organization and powers of national government.

103s Principles of American Constitution III

3 cr; prereq 101 or 102 or equiv; Chase
Constitutional rights, due process and equal protection of law.

109s Judicial Process

(see American Governmental Systems and Processes)

180f-181w†-182s International Law (Peace)

(see International Relations)

183s International Law (Conflict)

(see International Relations)

Portuguese/see Romance Languages

Psychology (Psy)

All students contemplating a major in psychology must pick up a set of instructions in room 108 Psychology Building.

● Major Sequences in Arts College—

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.

Course program:

Prerequisites: Psy 1-2†, 4-5†

Requirements:

- A. 6 cr from the following: Psy 100, 104, 105, 117, 118, 119, 128-129, 132-133
- B. 6 cr from the following: Psy 120-121†, 125-126†, 140, 144-145†, 162
- C. 6 cr from the following: Psy 127, 148, 149, 150, 151
- D. 3 cr in Psy 90 and 3 cr in Psy 191 or 169
- E. Special project: Psy 190H

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, such as interviewer, personnel technician, mental health worker, and research technician. This research project is to result in a thesis of high quality.

Credit for this work is received by registration in Psy 190H.

Students are required to participate in departmental honors seminars organized in conjunction with fulfilling the requirements of the Psy 190H project.

Additional Upper Division courses in psychology will be elected with consent of the adviser, leading to a total of no more than 39 cr.

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.

188 / Course Offerings and Major Requirements

Course program:

Prerequisites: Psy 1-2†, 4-5†

Requirements:

- A. 6 cr from the following: Psy 55, 75, 100, 104, 105, 117, 118, 119, 127, 128-129, 132-133†, 148, 149, 150, 151
- B. 6 cr from the following: Psy 120-121†, 125-126†, 140, 144-145†, 162, CPsy 80, 81
- C. 6 cr in Psy 90 and 91
- D. 9 to 21 additional cr in Upper Division psychology courses

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 10 (or 15) and 40.

Psy 90 and 91 should be taken as early as possible in the junior year. Further courses in statistics (such as PubH 110, 111, 112 with laboratories, Psy 168, 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 development combined.

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.

Many of the courses numbered below 200 are designed for nonmajors as well as majors in psychology. This department particularly recommends Psy 55, 75, 140, and 144-145† as courses contributing to the general education of all students. Honors sections in many of these courses are available to qualified students.

For courses in child psychology see page 63.

LOWER DIVISION COURSES

1f,w-2w,s† 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.

4f,w-5w,s†-6s Introductory Laboratory Psychology

2-2†-2 cr; prereq soph, 1-2† or ¶1-2†; Fox, others

Experiments illustrating contemporary subject matter such as human and animal learning, motivation, verbal behavior, problem

solving, visual perception, psychological measurement, personality and social psychology.

10s Application of Psychology

3 cr; not intended for students planning to major in psychology; not open to any student who has had any psychology or educational psychology course over 100; prereq 2; Hewer, Loper

Review of research findings and individual techniques in vocational choice and personal adjustment; particular emphasis on psychology of college students.

UPPER DIVISION COURSES

Psychology courses numbered between 50 and 75 are open to sophomores who have an average grade of at least C in all their courses.

55s Sensation and Perception

3 cr; prereq 2; Overmier, Roberts

Roles of stimulus, receptor organ and brain, and of learning and motivation, in man's perception of his world. Lectures and demonstrations.

75s Introduction to Psychology of Learning

3 cr; prereq 2; Overmier, Trapold

Basic methods in study of learning. Development of fundamental concepts and principles governing the learning process.

90f,w,s Introduction to Statistical Methods

3 cr; prereq 5 or equiv; J. Campbell, Dawis, Dunnette

Central tendency and variation, correlation methods, bivariate regression, introduction to problems of sampling and hypothesis testing.

91f,w,s Introduction to Psychological Measurement

3 cr; prereq 90; J. Campbell, Dawis, Dunnette

Concepts of reliability and validity; how tests and rating scales are constructed; methods of measuring abilities, traits, sensory magnitudes, attitudes, information, meaning.

100f Theories of Learning

3 cr; prereq 75 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.

101f Advanced Experimental Psychology: Human Learning

3 cr; prereq 2, 5, 90 or equiv; not offered 1968-69; Jenkins, LaBerge

Current research topics and experimental techniques in study of human learning, including verbal learning, memory, discrimination learning, concept formation, choice learning, and probability learning. Class designs, executes, and analyzes one or two experimental projects.

102w Advanced Experimental Psychology: Perception and Psychophysics

3 cr; prereq 2, 5, 90, or equiv; not offered 1968-69; LaBerge, Yellott

Modern approaches to study of perception and psychophysics, including topics such as stimulus detection, recognition, discrimination, scaling, attention, stimulus generalization, reaction time and vigilance. Class designs, executes, and analyzes one or two experimental projects.

104w Human Learning A

3 cr; prereq 75 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.

105s Human Learning

3 cr; prereq 75 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.

117f Analysis of Behavior

3 cr; prereq 75 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.

118w Verbal Behavior

3 cr; prereq 117 or ‡; MacCorquodale

Account of an individual's verbal behavior in terms of his past history and current circumstances.

119s Analysis of Complex Behavior

3 cr; prereq 117 or ‡; Thompson

Experimental analysis of complex behavior repertoires based upon systematic formulation presented in 117. 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.

120w-121s† Personality

3-3† cr; prereq 9 cr in psychology; Tellegen

Presentation and discussion of several major theories and concepts.

125f-126w‡ Differential Psychology

3-3‡ cr; prereq Psy 90, or Psy 5 and 5 cr in statistics; Darley, Dunnette, Jenkins

Introduction to methodology. Quantitative studies of nature of psychological traits and influence of age, sex, heredity, and environment. Causation of individual differences in ability and temperament.

190 / Course Offerings and Major Requirements

125Hf-126Hw† Differential Psychology

4-4† cr; prereq Psy 90, or Psy 5 and 5 cr in statistics; Darley, Dumnette, Jenkins (see description 125-126)

127s Introduction to Behavioral Genetics

3 cr; prereq 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.

128w-129s Psychology of Learning

3-3 cr; prereq 75 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.

130s Vocational Psychology

3 cr; prereq 90 or equiv; Dawis

Analysis of individuals and work environments with reference to selection of, adjustment to, and behavior in work; historical and current developments in technology of vocational psychology.

132w-133s† 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. Motivation in complex situations involving set, level of aspiration, Zeigarnik effect, frustration, etc.

135f Counseling Psychology I: History and Theory

3 cr, prereq sr...9 cr or ‡; Lofquist

History of counseling psychology; theories of counseling; theories of vocational development, work and work adjustment.

136w Counseling Psychology II: Tests and Measurements

3 cr; prereq 135, 126 or ¶126 or ‡; Warnken

Psychological tests and measurements; construction, selection, interpretation of selected objective instruments measuring intelligence, academic ability, special aptitudes, interest, and personality; emphasis on testing of adult.

137s Counseling Psychology III: Interviewing

3 cr; prereq 136 or ‡; Warnken

Dynamics of counseling interview; interview techniques; diagnosis and appraisal; use of occupational information; psychological report writing.

140w Social Psychology

3 cr; prereq Psy 2, Psy 5 and 9 cr in social science; Miller

Survey of theories and evidence. Effects of other persons, mass communications, social class, and group membership upon individual's attitudes and behavior.

140H Social Psychology

3 cr; prereq ‡; Berscheid, Miller (see description 140)

144w-145s† Abnormal Psychology

3-3† cr; prereq 9 cr or 6 cr plus Biol 2 or 12 cr in a social science; Garnezy

Normal and abnormal behavior contrasted. Dynamics and determinants of personality maladjustments.

144H-145H Abnormal Psychology

0 cr-6 cr—sequence will be completed in 1 qtr; prereq 9 cr or 6 cr plus Biol 2 or 12 cr in a social science or ‡; Phillips

(see description 144-145)

148f Fundamentals of Physiological Psychology

3 cr; prereq 2, 5 or Biol 2 or ‡; Roberts

Physiological and neuroanatomical mechanisms underlying behavior of higher vertebrates. Sleep, wakefulness, and attention processes. Effects of drugs on behavior.

149s Neuropsychology of Motivation and Learning

3 cr; prereq 148 or ‡; Roberts

Brain mechanisms of aggression, fear, pain, hunger, thirst, reproductive behavior, learning, and discrimination processes.

150f Perception

3 cr; prereq 55, 90 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.

151s Animal Psychology

3 cr; prereq 2, 5 or equiv in another science; Roberts

Historical, philosophical, and biological foundations; consciousness; motivation; learning; reasoning; judgment; abnormal behavior; social influences.

156f,w Psychology of Advertising (same as Jour 156)

3 cr; prereq 2; 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.

160 Personnel and Industrial Psychology
3 cr; prereq Psy 2, Psy 5, 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.

161 Psychology of Individual Behavior in Organizations

3 cr; prereq 160 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.

162f 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.

163w Behavior of Organizations

3 cr; prereq 162; Weick

Theory, simulation, and observation of intergroup and organizational processes. Survey of central concepts of organization, and critical analysis of underlying behavioral assumptions.

168f Quantitative Methods in Psychology

3 cr; prereq §; Yellott

Elementary set theory, probability theory, matrix algebra, difference equations; ap-

plications to construction and evaluation of behavior models.

169w Quantitative Models for Learning

3 cr; prereq 168 or §; Yellott

Introduction to mathematical models for learning, stochastic operator models, stimulus sampling theory, models for stimulus detection and recognition.

171w-172s† Clinical Psychology

4-4†; prereq 145 or NPsy 200, and course in mental measurement or statistics; Meehl, Schofield

Theory of personality appraisal, especially of deviant individuals and in psychiatric context. Emphasis on fundamental concepts, methodological principles, and research problems rather than specific clinical instruments currently in use.

190f,w,s Project in Psychology

Cr ar; prereq sr, §

Individual library study or experimental investigation.

190Hf,w,s Project in Psychology

Cr ar; prereq sr, §

Individual library study or investigation.

191 Psychological Measurement: Theory and Methods

3 cr; honors candidate or grad student; prereq 90 or equiv; J Campbell, Dawis, Dunnette, Weiss

Types of measurement (tests, scales, inventories, Q-sort) and their construction; theory and measurement of validity.

192 Psychological Measurement: Multivariate Methods

3 cr; prereq 191 or §; Weiss, Lykken

Multivariate regression and discrimination (linear and nonlinear models); dimensional analysis, including cluster and factor analysis.

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

1f,w,s 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 examina-

tions, and improving reading ability. Attention to orientation of students in attitudes and motivation, and relation of these to satisfactory performance.

192 / Course Offerings and Major Requirements

11f,w,s 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.

Public Administration (PA)

Professional education for public administration is at the graduate level—see *Graduate School Bulletin* and special bulletin on *Graduate Education for Public Administration*.

Public Health (PubH) / College of Medical Sciences

● Major Sequence in Biometry in Arts College—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

3f,w,s Personal Health

2 cr, §2, 50; Thomson
Normal body function; causes and prevention of disease.

of exemption exam (exemption from 2 or 3 on basis of military service does not serve as a prereq); Smith

4s Health Problems of Community

2 cr; prereq 2, 3, or successful passing

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.

50f,w,s Personal and Community Health

3 cr, §2, 3, 4, 51, 52, 100A; Thomson
Fundamental principles of health conservation and disease prevention.

102Aw Environmental Health

2 cr; prereq 100A or §; Bond, others
General principles of urban and rural sanitation; problems encountered by official health agencies.

51w Community Hygiene

3 cr, §4, 5, 50, 52, 53, or 100 or those excused from 3 on basis of military service; prereq 2, 3, 3A; Smith
Community programs for disease control.

103f,w,s Public Health Bacteriology

Cr ar; prereq MicB 102, 116 and §; Bauer
Bacteriologic and serologic diagnosis, public health laboratory administration and methods.

75s 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.

106w Public Health Administration

3 cr; prereq 100A; G Anderson
Structure, basic functions, and activities of public health agencies.

100Af Elements of Public Health I

3 cr; prereq 3 or 50, or equiv and course in bacteriology; G Anderson, Schuman, Thomson

Physiological Hygiene

Occurrence and prevention of communicable, degenerative, and industrial disease; protection of food, water, and milk; maternal and child health.

91f Physiological Hygiene

4 cr (to receive cr for this course 92 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.

92w Physiological Hygiene

4 cr; prereq 91 or equiv; Taylor
 Effects of exercise, nutrition, environment, and age on performance and health.

95f,w 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.

125f,w Public Health Education

2 cr; prereq #; Craig, Ellis

Planning educational aspects of community health programs; group procedures; public relations; selection, development, and use of mass media.

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.

192w Physiology of Exercise

Cr ar; prereq Phsl 106, 107 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*.

Radio and Television

Courses relating to radio and television are offered by the School of Journalism and Mass Communication, and the Department of Speech, Communication, and Theatre Arts to juniors and seniors who have had the appropriate prerequisite courses. Usually students wishing to prepare for radio and television production and performance enroll as speech majors; those directed toward broadcast advertising, journalism, and public affairs programming enroll as journalism majors; supporting work comes from the alternate department and from other areas.

Religious Studies

Many courses offered in the College of Liberal Arts are devoted wholly or in significant part to some aspect of religion. Since there are many courses, and they are offered by several departments, such courses are not listed here. A complete list of courses may be obtained in Room 225 Johnston Hall.

Students interested in pursuing a major in religious studies should read carefully the information relating to interdepartmental majors on page 12 of this bulletin.

Rhetoric (Rhet)/College of Agriculture, Forestry, and Home Economics

LOWER DIVISION COURSE

47f,w,s Efficient Reading

1 cr for Arts College students; prereq score above 30th percentile on a stand-

ard reading test; not a remedial course; Brown
 Increases reading rate, comprehension, and vocabulary.

Romance Languages

Romantic (Rom)

UPPER DIVISION COURSE

114s Introduction to Romance Philology

3 cr; required of all departmental majors; prereq Fren or Ital or Port or Span 54 or §; Mantini and others

Origins of Romance Languages. Factors that influenced their growth and structure examined in early and significant literary texts of Catalan, French, Italian, Portuguese, Provençal, Roumanian, and Spanish.

French (Fren)

● Major Sequence in Arts College—

Major: 33 Upper Division cr in French above 54, including:

A. Fren 55, 60, 61, 62

B. Fren 65, 66, 67 or 65H, 66H, 67H

C. Fren 85, 86, 87; 114

The 85, 86, 87 sequence, required for Arts College majors, must be taken at the same time as the 65, 66, 67 sequence. In exceptional cases, students may be allowed by the department to elect work in literature on the 100 level instead of the corresponding Upper Division offerings.

Minor: Students intending to minor in French under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation:* Fren 30 and 45 cr in Upper Division courses above 54 including: Ling 55, Fren 55, 57, 58; 60, 61, 62; 65, 66, 67; 107, 108, 109; 104. *Minor recommendation:* 27 college cr of which 15 cr will be in courses numbered above 54 including: Fren 30, 55, 57, 58, 60, 61, 62.

LOWER DIVISION COURSES

Honors Program—See Fren 2H, 3H, 25H and consult major advisers.

If,w-2f,w,s-3f,w,s Beginning French

5-5-5 cr; students submitting 1 yr high school French for entrance must take 2 or 2H and those offering 2 yrs must take 3 or 3H; Mantini, others

Beginning course stressing pronunciation, aural comprehension, basic grammatical forms, patterns of French and ability to recombine them in new situations. Reading and writing skills developed as a complement to acquisition of spoken objectives.

1A-2A-3A Beginning French: Pre-Literary Sequence

5-5-5 cr; Lock, Waldauer and others
Emphasizes an audio-lingual approach to conversation, reading and writing; specifically designed to prepare for study of French literature and civilization.

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 §

Students in 2H and 3H attend Tuesday and Thursday sections of regular Fren 2 and 3, but meet in special groups on MWF. Discussion of at least one literary masterpiece each quarter.

25f,w,s Intermediate French

5 cr; prereq Fren 3 or 3 yrs high school French

Intensive review of grammatical forms and patterns principally through systematic analysis of variety of French texts.

25Hf,w,s Honors Course: Intermediate French

(see 2H-3H-25H)

26f,w,s Intermediate French (continued)

3 cr; prereq 25

Continuation of 25 with more advanced work on syntactic patterns and additional, more advanced analysis of French literary texts.

30f,w,s Introduction to French Literary Texts

3 cr; prereq 25 or 4 yrs high school French or #

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.

30H Introduction to French Literary Texts

3 cr; prereq 25 or 25H or 4 yrs high school French and successful completion of a proficiency examination

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II. Upper Division courses with numbers less than 100 are open to Lower Division students who have an average grade of at least C in the prerequisite courses. The surveys of literature courses or # are prerequisites for literature courses numbered above 100.

54f,w French Composition

3 cr; prereq 25 or equiv

cises based on material of course. Conducted in French.

55f,w,s French Conversation and Pronunciation

3 cr; prereq 25 or equiv; 3 rec and 1 lab hr

In addition to regular conversation course, an hour each week is devoted to practical phonetics and pronunciation drill.

65f Survey of French Literature: Rabelais to La Bruyère

3 cr; prereq 30...¶85 for majors; Renaud

65Hf Honors Course: Survey of French Literature: Rabelais to La Bruyère

3 cr; prereq 25H or 30 with an A, and #...¶85 for majors; Renaud

56f French Phonetics

3 cr; prereq 25 or #

66w Survey of French Literature: Age of Enlightenment

3 cr; prereq 30...¶86 for majors; Waldauer

56A Advanced French Conversation

(Taught summer sessions only at French House)

66Hw Honors Course: Survey of French Literature: Age of Enlightenment

3 cr; prereq 25H or 30 with an A, or 65H, and #...¶86 for majors; Waldauer

57s Advanced French Composition

3 cr; prereq 54 or #

58w,s Advanced French Conversation

3 cr; prereq 55 or #

67s Survey of French Literature: Romanticism to Surrealism

3 cr; prereq 30...¶76 for majors; Lock

59s Diction (French Play)

2-3 cr; prereq #; Sinval

Meets as a class one day a week to discuss a play from point of view of its literary as well as its dramatic significance. Everyone plays a role, is an understudy or writes a paper.

67Hs Honors Course: Survey of French Literature: Romanticism to Surrealism

3 cr; prereq 25H or 30 with an A, or 66H, and #...¶87 for majors; Lock

60f, 61w, 62s French Civilization and Culture

4,4,4 cr; prereq 55; Francis, Waldauer

Systematic study of development of French culture, with oral and written French exer-

70w French Diction

3 cr; prereq 56, #; Sinval

77f-78w-79s French Literature in English Translation

2-2-2 cr; for students with little or no knowledge of French but interested in

196 / Course Offerings and Major Requirements

- contribution of France to European and world literature; knowledge of French not required; does not count toward major in French
- Representative works, chosen from medieval times to present day, are examined through various movements, genres, or themes.
- 85f Sixteenth- and Seventeenth-Century French Literature**
2 cr; prereq 30 or #, ¶65; Renaud
- 86w Eighteenth-Century French Literature**
2 cr; prereq 30 or #, ¶66; Waldauer
- 87s Nineteenth- and Twentieth-Century French Literature**
2 cr; prereq 30 or #, ¶67; Lock
- 105s French Stylistics**
3 cr; prereq 57 or #; Mantini
- 107f, 108w, 109s Structure of Modern French: Phonology, Morphology, Syntax**
3,3,3 cr; prereq 57 or ¶57 or #; Mantini
- 110f French Romanticism**
3 cr; offered 1970-71 and every 3rd yr; Robinson
- 111w Nineteenth-Century Literature: Drama**
3 cr; offered 1968-69 and every 3rd yr; Francis
- 114s Introduction to Romance Philology**
(see Romanic, above)
- 118 Villon and Lyric Poetry of 15th Century**
3 cr; prereq 65 or 66 or 67; Claret
- 121f Poetry of Renaissance**
3 cr; offered 1968-69 and every 3rd yr; Renaud
- 123w Montaigne**
3 cr; offered 1968-69 and every 3rd yr; Renaud
- 124s Pascal**
3 cr; offered 1968-69 and every 3rd yr; Renaud
- 125f Renaissance and Baroque Drama: Corneille and Origins of Classical Drama**
3 cr; offered 1970-71 and every 3rd yr; Renaud
- 126s Classical Tragedy: Racine**
3 cr; offered 1968-69 and every 3rd yr; Francis
- 127f Classical Comedy: Molière**
3 cr; offered 1969-70 and every 3rd yr; Renaud
- 128w French Poetry from d'Aubigné to La-Fontaine**
3 cr; offered 1969-70 and every 3rd yr; Francis
- 129s Nevel of 17th Century**
3 cr; offered 1970-71 and every 3rd yr; Renaud
- 130f Poetry of Victor Hugo**
3 cr; offered 1968-69 and every 3rd yr; Robinson
- 131f Baudelaire and Parnassian Poetry**
3 cr; offered 1969-70 and every 3rd yr; Robinson
- 132f Symbolist Poets: Verlaine, Rimbaud, Mallarmé**
3 cr; offered 1970-71 and every 3rd yr; Robinson
- 140w Novel of 18th Century**
3 cr; offered 1968-69 and every 3rd yr; Waldauer
- 141s Eighteenth-Century Dramatic Literature**
3 cr; offered 1970-71 and every 3rd yr; Waldauer
- 142f Voltaire**
3 cr; offered 1970-71 and every 3rd yr; Waldauer
- 143s Diderot**
3 cr; offered 1968-69 and every 3rd yr; Waldauer
- 144f Rousseau**
3 cr; offered 1969-70 and every 3rd yr; Waldauer
- 148s Drama of 20th Century: Claudel, Giraudoux, Anouilh, Montherlant, Camus, Sartre**
3 cr; offered 1968-69 and every 3rd yr; Francis
- 149w French Dramatists of 20th Century**
3 cr; offered 1968-69 and every 3rd yr; Francis
Designed to reflect variety of experimentation in French theatre since Cocteau.
- 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.
- 153w Balzac**
3 cr; offered 1968-69 and every 3rd yr; Lock
- 154s Stendhal**
3 cr; offered 1970-71 and every 3rd yr; Lock

155w Flaubert, Maupassant and Narrative Techniques

3 cr; offered 1970-71 and every 3rd yr;
Lock

156w Zola, Goncourt, and Naturalistic Novel

3 cr; offered 1968-69 and every 3rd yr;
Lock

157w Short Stories of 19th Century

3 cr; offered 1968-69 and every 3rd yr;
Waldauer

158w Proust and Novel of 20th Century

3 cr; offered 1969-70 and every 3rd yr;
Lock

159w Existential Novel

3 cr; offered 1970-71 and every 3rd yr;
Francis

Stress upon novelists from 1930s to present whose work reveals concern for what Malraux calls the human condition: Malraux, Céline, Sartre, Camus, Blanchot, and Beckett.

161s Forms of Novel in 20th Century

3 cr; offered 1970-71 and every 3rd yr;
Lock

Emphasis upon innovations in novelistic form, from Gide's *Les Faux-Monnayeurs* to novels of Nathalie Sarraute and Alain Robbe-Grillet.

162 Le Nouveau Roman: Representative French Novelists Since 1950

3 cr; offered 1969-70 and every 3rd yr;
Lock

Includes last existentialist novels and innovations of Nathalie Sarraute, Alain Robbe-Grillet, Michel Butor, and others.

165w Poetry in 20th Century: Apollinaire, Valéry, Eluard

3 cr; offered 1968-69 and every 3rd yr;
Francis

170 Rabelais

3 cr; offered 1969-70 and every 3rd yr;
Renaud

Gargantua and Pantagruel in original text.

172 Novel of l'Entre-Deux Guerras

3 cr; offered 1969-70 and every 3rd yr;
Francis

175f-176w-177s French Literary Doctrines from Pléiade to Present

3-3-3 cr; offered 1968-69 and every 3rd yr;
Francis

182f-183w-184s Mouvement des Idées

1-3 cr per qtr; prereq 60, 61, 62 or #;
offered 1969-70 and every 3rd yr

189f,w,s Independent Readings for Upper Division Students

1-3 cr per qtr; prereq # and consent of department chairman

Italian (Ital)

● Major Sequence in Arts College—

Major: 33 cr in Italian courses numbered above 54 including 114 and 3 additional cr chosen from the following:

- Fren 65, 66, 67, 121
- Engl 75; ClPh 133L
- Hist 103A, 104A, 105A
- Ital 159-160; 161-162

Minor: Students intending to minor in Italian under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

LOWER DIVISION COURSES

1f-2w-3s Beginning Italian

5-5-5 cr, §50

Stresses aural comprehension, correct pronunciation, basic grammar, and practical reading knowledge.

25 Intermediate Italian

5 cr; prereq 3 or #; Seim

Conversational approach to review of grammatical forms and patterns. Literary texts analyzed and discussed in Italian.

30 Introduction to Literary Texts

3 cr; prereq 25 or #; Philmus

UPPER DIVISION COURSES

Upper Division courses are open to sophomores under conditions explained at the beginning of Section II. Upper Division courses with numbers less than 100 are open to Lower Division students who have an average grade of at least C in the prerequisite courses. The surveys of literature courses or consent of instructor are prerequisites for literature courses above 100.

- 53w Advanced Grammar**
3 cr; prereq 25; Philmus
- 54w Composition**
3 cr; prereq 25; Philmus
- 55 Conversation**
3 cr; prereq 25, ‡
- 56 Italian Phonetics**
3 cr; prereq ‡
- 57s Advanced Composition**
3 cr; prereq 54
- 58 Advanced Italian Conversation**
3 cr; prereq 55
- 60f-61w-62s Italian Civilization and Culture**
3-3-3 cr; prereq 25 or ‡
Systematic study of development of Italian culture; oral and written exercises in Italian based on material of course. Conducted mainly in Italian. 60: Middle Ages. 61: Renaissance. 62: Modern times.
- 65f Survey of Italian Literature: Middle Ages**
3 cr; prereq 30; Rohr
- 66w Survey of Italian Literature: Renaissance**
3 cr; prereq 30; Rohr
- 67s Survey of Italian Literature: Modern Times**
3 cr; prereq 30; Rohr
- 105 Italian Stylistics**
3 cr; prereq 57
- 114 Introduction to Romance Philology**
(see Romanic, above)
- 120 Italian Theatre from its Origins to Goldoni and Alfieri**
3 cr
- 130f-131w-132s Major Periods of Italian Literature**
3-3-3 cr
130: The Trecento. 131: Cinquecento. 132: Ottocento.
- 150, 151, 152 Modern Literature**
3,3,3 cr; Philmus, Pipa
150 (formerly 155): Narrative, Verga to Moravia.
151 (formerly 172): Drama: Pirandello, Betti, Fabbri.
152 (formerly 150): Poetry: Crepuscolari to Hermeticists.
- 155f Modern Short Story (Verga, Pirandello, etc.)**
3 cr; prereq 3 or ‡; offered 1968-69 and alt yrs; Pipa
- 160, 161, 162 Dante**
3,3,3 cr; prereq 65, 66, 67; Pipa
160: Inferno. 161: Purgatorio. 162: Paradise.
- 163 Dante's Minor Works (La Vita Nuova, Rhymes, Il Convivio)**
3 cr
- 164s Dante in English**
3 cr; prereq ‡; offered when feasible
- 165 Petrarch**
3 cr
- 167 (formerly 172) Boccaccio**
3 cr; prereq 65; Philmus
- 173 Poetry of Renaissance**
3 cr; Philmus
Lorenzo de Medici, Poliziano; Pulci, Boiardo, Ariosto, Tasso.
- 174w Prose Writers of Renaissance and Counter-Reformation Period**
3 cr; prereq 67; Philmus
Machiavelli, Guicciardini, Castiglione; Bruno, Campanella, Galileo.
- 175 Romantic Novel (Manzoni to Fogazzaro)**
3 cr
- 176 Romantic Poetry (Foscolo, Leopardi, Manzoni)**
3 cr
- 189f,w,s Independent Readings for Upper Division Students**
1-3 cr; prereq ‡ and consent of department 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 55; 60; 65, 66, 67; 85A or 86A or 87A; Port 55; 65, 66, 67; 114
- B. Span 55; 60; 63, 64; 74, 75, 76; 85B or 86B or 87B; Port 55; 65, 66, 67; 114

Minor: Students intending to minor in Portuguese under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

LOWER DIVISION COURSES**1f-2w-3s 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.

25f Intermediate Portuguese Grammar and Composition

5 cr; prereq 3 or #; Hamilton

Intensive review of grammar accomplished in part through careful reading and analysis of selected cultural and literary texts.

UPPER DIVISION COURSES**54 Composition**

3 cr; prereq 25, #

55w Conversation and Composition

3 cr; prereq 25 or equiv; Hamilton

Brazilian speech but continental Portuguese forms are also stressed.

65f, 66w, 67s Introduction to Literature of Portugal and Brazil

3,3,3 cr; prereq 30 or #; Hamilton

110, 111, 112 Topics in Portuguese Literature

3,3,3 cr; prereq 67; offered 1969-70 and alt yrs; Hamilton

114s Introduction to Romance Philology

(see Romanic, above)

120, 121, 122 Topics in Brazilian Literature

3,3,3 cr; prereq 67; offered 1968-69 and alt yrs; Hamilton

189f,w,s Independent Readings for Upper Division Students

1-3 cr per qtr; prereq # and consent of department chairman; Hamilton

Spanish (Span)

● Major Sequence in Arts College—

Major: Students may arrange major programs in either Sequence A (Spanish Literature) or Sequence B (Spanish American Literature):

- A. Span 54, 55; 60, 61, 62; 65, 66, 67 or 65H, 66H, 67H; 85A, 86A, 87A; 114
- B. Span 54, 55; 60, 63, 64; 74, 75, 76, or 74H, 75H, 76H; 85B, 86B, 87B; 114

200 / Course Offerings and Major Requirements

The 85, 86, 87 sequences, required for majors, must be taken at the same time as the corresponding literature survey sequence. In exceptional cases, students may be allowed by the department to elect course work in literature on the 100 level instead of the corresponding Upper Division offerings.

Minor: Students intending to minor in Spanish under the OLD graduation requirements (see p. 257) are invited to consult a departmental adviser.

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation:* 45 Upper Division cr in Spanish including: Ling 55; 55, 57, 58, 60, 61, 62 or 60, 63, 64, 65, 66, 67 or 74, 75, 76, 107, 108, 109, 114. *Minor recommendation:* 27 college cr including: 30, 55, 57, 58; 60, 61, 62, or 60, 63, 64 or 65, 66, 67 or 74, 75, 76.

LOWER DIVISION COURSES

Note—There are two beginning courses in Spanish, 1-2-3, and 1A-2A-3A. The student should study the description of each sequence and select the one most suited to his needs and interests.

1f,w-2f,w,s-3f,w,s Beginning Spanish

5-5-5 cr; students submitting 1 yr high school Spanish for entrance must take Span 2 and those offering 2 yrs must take Span 3

Beginning course stressing correct pronunciation, aural comprehension, basic grammar, and practical reading knowledge.

1Af-2Aw-3As Beginning Spanish: Conversational Approach

5-5-5 cr

Stresses conversation. Gives students a basic active speaking vocabulary, assurance in self expression, and facility in the spoken language. Ten class meetings a week; 5 hours demonstration (introduction to texts dealing with real-life situations and necessary grammar) plus 5 hours intensive conversational drill in sections small enough to insure for each student individual attention.

2Hw, 3Hs, 25Hf,w,s Honors Course: Beginning and Intermediate Spanish

5,5,5 cr; open to superior students on basis of performance in previous qtr or by §

Students attend TTh sections of regular Span 2 and 3, but meet in special groups on MWF. Includes discussion of at least one literary masterpiece each quarter.

25f,w,s Intermediate Spanish

5 cr; prereq 3 or 3A, or 3 yrs high school Spanish; Narváez

Intensive review of grammar accomplished to great extent through analysis of variety of cultural and literary texts.

25Hf,w,s Honors Course: Intermediate Spanish

(see 2H, 3H, 25H)

30f,w,s Introduction to Spanish and Spanish-American Literary Texts

3 cr; prereq 25 or 4 yrs high school Spanish or §; Rundorff

30Hf,w,s Honors Course: Introduction to Spanish Literary Texts

3 cr; prereq 25 or 25H or 4 yrs high school Spanish and successful completion of qualifying examination

UPPER DIVISION COURSES

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

54f,w Spanish Composition

3 cr; prereq 25 or equiv; Narváez

57s Advanced Spanish Composition

3 cr; prereq 55; Jones

55f,w,s Spanish Conversation

3 cr; prereq 25 or equiv; Narváez

58w,s Advanced Spanish Conversation

3 cr; prereq 57; Jones

56f Spanish Pronunciation

3 cr; prereq 25 or §; Narváez

59 Spanish Play

3 cr; prereq 3 or §

60f, 61w, 62s Spanish Civilization and Culture
4,4,4 cr; prereq 55; Pattison

63w, 64s Latin-American Civilization and Culture
4,4 cr; prereq 60 or #

65f Survey of Spanish Literature: Poema del Cid to Celestina
3 cr; prereq 30...¶85A for majors; Rundorff

65Hf Honors Course: Survey of Spanish Literature: Poema del Cid to Celestina
3 cr; prereq 30 with an A, and #...¶85A for majors

66w Survey of Spanish Literature: Golden Age
3 cr; prereq 30...¶86A for majors; Rundorff

66Hw Honors Course: Survey of Spanish Literature: Golden Age
3 cr; prereq 30 with an A, or 65H and #...¶86A for majors

67s Survey of Spanish Literature: Neoclassicism to Early 20th Century
3 cr; prereq 30...¶87A for majors; Rundorff

67Hs Honors Course: Survey of Spanish Literature: Neoclassicism to Early 20th Century
3 cr; prereq 30 with an A, or 66H, and #...¶87A for majors; Sullivan

74f, 75w, 76s Survey of Literature of Spanish America
3,3,3 cr; prereq 30...¶85B, 86B, 87B for majors; Floripe

74Hf, 75Hw, 76Hs Honors Proseminars: Survey of Literature of Spanish America
3,3,3 cr; prereq 30H or 30 with an A and #...¶85B, 86B, 87B for majors; Floripe

85Af Medieval and Renaissance Spanish Literature
2 cr; prereq 30 or #, ¶65; Rundorff

85Bf Colonial American Literature
2 cr; prereq 30 or #, ¶74; Floripe

86Aw Literature of Golden Age
2 cr; prereq 30 or #, ¶66

86Bw Romanticism to Modernismo
2 cr; prereq 30 or #, ¶75; Floripe

87As Modern Spanish Literature
2 cr; prereq 30 or #, ¶67; Sullivan

87Bs Contemporary Latin-American Literature
2 cr, prereq 30 or #, ¶76; Floripe

105s Spanish Stylistics
3 cr; prereq 57 or equiv; Narváez

107f, 108w, 109s Structure of Modern Spanish: Phonology, Morphology, Syntax
3,3,3 cr; prereq 57 or # or ¶57; Narváez
Scientific approach to structure of present-day Spanish; special attention to syntax. Phonology, word-formation, and dialectal differences.

110f, 111w, 112s Spanish Literature: 19th Century
3,3,3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs; Pattison

113 World Outlook in Spanish Novel (Krausismo to Existencialismo)
3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs; Rundorff

114s Introduction to Romance Philology
(see Romanic, above)

115f Spanish Literature of 17th Century: Drama
3 cr; prereq 65, 66, 67; offered 1969-70 and alt yrs

116w Spanish Literature of 17th Century: Novel
3 cr; prereq 65, 66, 67; offered 1969-70 and alt yrs

117s Spanish Literature of 17th Century: Poetry
3 cr; prereq 65, 66, 67; offered 1969-70 and alt yrs

120f Ballad
3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs

121 Celestina
3 cr; prereq 65, 66, 67; offered 1969-70 and alt yrs; Jones

125 Introduction to Spanish Mystic Literature of 16th and 17th Centuries
3 cr; prereq 65, 66, 67
Juan de Avila, Santa Teresa, P. Ribadeneira, Fr. Luis de León.

130 Cervantes: Don Quixote
3 cr; prereq 65, 66, 67; Jones

131w Picaresque Novel
3 cr; prereq 65, 66, 67; offered when feasible; Rundorff

134 Variations of Love Theme in 10 Spanish Masterpieces
3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs; Rundorff

135 Development and Metamorphosis of "Don Juan" Theme
3 cr; prereq 65, 66, 67 or #; Rundorff

202 / Course Offerings and Major Requirements

- 140f Latin-American Literature: Poetry**
3 cr; prereq 65, 66, 67 or 76; offered 1968-69 and every 3rd yr; Floripe
Silva, Dario, Nervo, Chocano, Herrera y Reissig, Lugones, Agustini, Mistral, Ibarbouro, Storni, López Verlarde, and Neruda.
- 141w Latin-American Literature: Essay, Short Story, Drama**
3 cr; prereq 65, 66, 67 or 76; offered 1968-69 and every 3rd yr; Floripe
Rodó, González Prada, Ricardo Rojas, Blanco Fombona, Ugarte, Vasconcelos, Alfonso Reyes, Quiroga, Gallegos, Florencio Sánchez.
- 142s Latin-American Literature: Novel**
3 cr; prereq 65, 66, 67 or 76; offered 1968-69 and every 3rd yr; Floripe
Gallegos, Azuela, Rivera, Guiraldes, Barrios, Cálvez, Lynch, Ciro Alegria.
- 143f, 144w, 145s Colonial and 19th-Century Latin-American Literature**
3,3,3 cr; prereq 65, 66, 67 or 76; offered 1969-70 and every 3rd yr; Floripe
- 146f, 147w, 148s Spanish-American Novel and Short Story**
3,3,3 cr; prereq 65, 66, 67 or 76; offered 1970-71 and every 3rd yr; Floripe
- 149 Contemporary Latin-American Novel**
2 cr; prereq 76 or §; offered 1969-70
- 155f Spanish Literature of 16th Century: Novel**
3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs
- 156w Spanish Literature of 16th Century: The Drama**
3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs
- 157s Spanish Literature of 16th Century: Poetry**
3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs
- Arab 161f Hispano-Arabic Literature and Culture: History of Islamic Spain**
3 cr; prereq §; Chejne
- Arab 162w Hispano-Arabic Literature and Culture: Arab Philosophy in Spain**
3 cr; prereq §; Chejne
- Arab 163s Hispano-Arabic Literature and Culture: Hispano-Arabic Literature**
3 cr; prereq §; Chejne
- 169 Valera**
3 cr; prereq 65, 66, 67 or §; Rundorff
- 171 Spanish Novel from Valera to Palacio Valdéz**
3 cr; prereq 65, 66, 67; Pattison
- 172 Modern Spanish Novel (1900-1936)**
3 cr; prereq 65, 66, 67 or §; offered 1969-70; Sullivan
- 174f Twentieth-Century Spanish Literature: Drama**
3 cr; prereq 65, 66, 67; offered 1969-70 and alt yrs; Pattison
- 175w Twentieth-Century Spanish Literature: Prose**
3 cr; prereq 65, 66, 67; offered 1969-70 and alt yrs; Pattison
Unamuno, Azorín, Baroja, Valle Inclán, Ortega y Gasset, Pérez de Ayala, Gómez de la Serna.
- 176s Twentieth-Century Spanish Literature: Poetry**
3 cr; prereq 65, 66, 67; offered 1969-70 and alt yrs; Pattison
Juan Ramón Jiménez, Unamuno, Antonio and Manuel Machado, Valle Inclán, García Lorca, Alberti, Moreno Villa, Aleixandre, León Felipe, Guillén, and Salinas.
- 182 Contemporary Spanish Novel (1935-1944)**
3 cr; prereq 65, 66, 67; offered 1968-69 and alt yrs; Sullivan
- 183 Contemporary Spanish Novel (1945-1965)**
3 cr; prereq 65, 66, 67 or §; offered 1968-69 and alt yrs; Sullivan
- 185 Unamuno and Existential Writers**
2 cr; prereq 65, 66, 67 or §
- 187 Un-Realism in Spanish Theatre: Cassona**
2 cr; prereq 65, 66, 67 or §
- 188 Contemporary Spanish Theatre: 1939-1968**
3 cr; prereq 65, 66, 67, or §; offered 1968-69 and alt yrs; Sullivan
- 189f,w,s Independent Readings for Upper Division Students**
1-3 cr; prereq § and consent of department chairman

Russian/see Slavic and East European Languages

Sanskrit/see East and South Asian Languages

Scandinavian (Scan)

● Major Sequence in Scandinavian Languages and Literature in Arts College —36 cr in courses numbered above 100, including Scan 121-122 or 124 or 125; 171 or 172; 191, 192, 193; and one additional course in literature. Nine cr may be taken in courses in other departments that deal with Scandinavia, for example art and history.

LOWER DIVISION COURSES

Danish (Dan)

1f-2w-3s Beginning Danish
5-5-5 cr; Bomash

4f Intermediate Danish
5 cr; prereq 3 or equiv; Bomash

Finnish (Fin)

1f-2w-3s Beginning Finnish
5-5-5 cr

4f Intermediate Finnish
5 cr; prereq 3 or equiv

Norwegian (Nor)

1f-2w-3s Beginning Norwegian
5-5-5 cr; Simpson, others

4f Intermediate Norwegian
5 cr; prereq 3 or equiv; Simpson, others

Swedish (Swed)

1f-2w-3s Beginning Swedish
5-5-5 cr; Saether, others

4f Intermediate Swedish
5 cr; prereq 3 or equiv; Saether, others

UPPER DIVISION COURSES

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

Danish

50w Advanced Composition
3 cr; prereq 4 or equiv
Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.

51w Reading Prose
3 cr; prereq 4 or equiv
Short prose fiction and nonfiction read to develop reading fluency in prose literature of the 19th and 20th centuries.

52s Reading Poetry
3 cr; prereq 4 or equiv
Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

Finnish

50w Advanced Composition
3 cr; prereq 4 or equiv
Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.

51w Reading Prose
3 cr; prereq 4 or equiv

Short prose fiction and nonfiction read to develop reading fluency in prose literature of 19th and 20th centuries.

52s Reading Poetry
3 cr; prereq 4 or equiv
Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

Norwegian

50w Advanced Composition
3 cr; prereq 4 or equiv
Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.

51w Reading Prose
3 cr; prereq 4 or equiv
Short prose fiction and nonfiction read to develop reading fluency in prose literature of 19th and 20th centuries.

52s Reading Poetry
3 cr; prereq 4 or equiv
Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

204 / Course Offerings and Major Requirements

Swedish

50w Advanced Composition

3 cr; prereq 4 or equiv
Short, original, expository compositions written on specific topics taken from essays, newspaper articles, etc.

51w Reading Prose

3 cr; prereq 4 or equiv
Short prose fiction and nonfiction read to develop reading fluency in prose literature of 19th and 20th centuries.

52s Reading Poetry

3 cr; prereq 4 or equiv
Lyric poems and excerpts from poetic drama studied to develop fluency in reading and comprehending poetry.

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; concentrates on those which have played a part in development of Western civilization.

Ger 113f Gothic

3 cr; prereq Ger 80 and 11 cr in German courses 70 and above or equiv; C Wood

Ger 114-115s† Methods of Comparative Germanic Linguistics

3-3† cr; prereq 113; C Wood

Soc 117s Scandinavian Folk Movements: Their Social and Political Significance

3 cr; prereq Soc 1 or ‡

Hist 118J, 119J, 120J History of Scandinavian Countries

3,3,3 cr; Oakley

Scan 121f-122w-123s 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 and of some familiarity with Old Danish and Old Swedish. Linguistic and literary study of texts from the Sagas and Eddas and of Runic inscriptions. Selected problems in Scandinavian philology.

Scan 124f 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.

Ger 125 Runic Inscriptions

3 cr; prereq ‡; C Wood

Scan 125w History of Scandinavian Languages

3 cr; prereq one Germanic language other than modern English; Hasselmo
External and internal history of Scandinavian languages; special emphasis on Proto-Scandinavian and syncope and umlaut periods and on development of separate standard languages.

Scan 126s Seminar: Scandinavian Linguistics

3 cr; prereq 124 and 125 or ‡; Hasselmo
Problems in synchronic and diachronic linguistics.

Scan 134 Structure of Finnish

3 cr; Lehtinen
Analysis of phonology, morphology, and syntax of modern Finnish.

Scan 135 History of Finnish

3 cr; Lehtinen
Internal history of Finnish; special emphasis on its relationship to other Finno-Ugric languages.

Phil 137w Kierkegaard

3 cr; prereq one course from Phil 50-51-52 or ‡; Mason

ArtH 140f Scandinavian Architecture

3 cr; prereq sr, grad or Δ; Nelson

ArtH 141w Scandinavian Painting

3 cr; prereq sr, grad or Δ; Nelson

ArtH 142s Scandinavian Sculpture and Minor Arts

3 cr; prereq sr, grad or Δ; Nelson

Pol 145 Government and Politics of Scandinavian Countries

3 cr; prereq 6, or 12 cr in social science

Pol 146s Social Legislation and Social Institutions in Scandinavian Countries

3 cr; prereq Pol 2 or Soc 1

Scan 150f Scandinavian Mythology

3 cr; prereq 8 cr in literature or ‡; reading knowledge of a Scandinavian language required for majors only; Hasselmo
Study of Scandinavian myths based on Poetic Edda and Prose Edda.

Scan 151w Icelandic Saga

3 cr; prereq 8 cr in literature or §; reading knowledge of a Scandinavian language required for majors only; Simpson
Literary study of Saga literature, its origins and development.

Scan 152s 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 153 Late Medieval and Renaissance Literature

3 cr; prereq major or minor in Scandinavian; good knowledge of a Scandinavian language required; offered when feasible
Readings in original of secular and religious literature from 14th to 17th century.

Scan 154f Holberg and Period of Enlightenment

3 cr; prereq 8 cr in literature or §; knowledge of a Scandinavian language required for majors only; Simpson
Representative figures of 18th century Danon-Norwegian and Swedish literature; emphasis on comedies of Ludvig Holberg, "the Molière of the North," and songs of Bellman.

Scan 161w 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, together with circumstances, intellectual and political, social and economic, from which it grew.

Scan 162s 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 of Knut Hamsun, Sigrid Undset, Hjalmer Bergman, Pär Lagerkvist, and others.

Scan 171f Ibsen and Beginnings of Modern Drama

3 cr; prereq 8 cr in literature or §; reading knowledge of a Scandinavian language required for majors only; Gustafson
Critical study of plays of Ibsen, especially with reference to role he has played as "founder" of modern European drama.

Scan 172w 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; Gustafson
Strindberg as master of naturalistic drama and as "father of modernity" in European and American theater since his day.

Hist 172G-173G-174G† Proseminar: Scandinavian History

3-3-3† cr; Oakley

Scan 173s Contemporary Scandinavian Drama and Theater

3 cr; prereq 8 cr in literature or §; reading knowledge of a Scandinavian language required for majors only; Gustafson
Examination of Scandinavian drama and theater of today, particularly with reference to experimental trends both in dramatic composition and staging.

Scan 191, 192, 193 Readings in Scandinavian Literature

3,3,3 cr; prereq good reading knowledge of a Scandinavian language
Intensive reading of representative Scandinavian texts. Designed especially for majors and minors in Scandinavian, each student fulfilling his reading requirements in his language of primary interest.

Serbo-Croatian/see Slavic and East European Languages

Slavic and East European Languages

General Program—Courses especially recommended for general education purposes are Russ 75-76-77 and 81-82-83.

206 / Course Offerings and Major Requirements

Bulgarian (Blgr)

LOWER DIVISION COURSES

1f-2w-3s Beginning Bulgarian
3-3-3 cr; offered when feasible on alter-

nating basis with Beginning Slovenian
and Macedonian

Macedonian (Mace)

LOWER DIVISION COURSES

1f-2w-3s Beginning Macedonian
3-3-3 cr; offered when feasible on alter-

nating basis with Beginning Slovenian
and Bulgarian

Polish (Plsh)

LOWER DIVISION COURSES

1f-2w-3s Beginning Polish
5-5-5 cr; Zamojska
Provides essentials for speaking, understand-
ing, and reading basic Polish.

4f-5w-6s Intermediate Polish
3-3-3 cr; prereq 3 or ‡; Zamojska
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.

71f-72w-73s Readings in Polish Literature
3-3-3 cr; prereq 6 or ‡; offered when
feasible

Reading and discussion of selected classic
and contemporary texts.

Russian (Russ)

● Major Sequence in Arts College—Russ 50-51, 56-57-58, 61-62-63, 71-72-73, and 6 cr from 75-76-77. (6 cr from Hist 118F, 119F, 120F may be substituted.)

● Requirements for a Teacher's Certificate—For a specialized curriculum see *College of Education Bulletin*.

LOWER DIVISION COURSES

1f-2w-3s Beginning Russian
5-5-5 cr; five class meetings a wk
Basic experience in speaking, reading, and
understanding Russian language and its
structure through acquisition of basic pat-
terns of speech.

5-5 cr; for students who have demon-
strated high ability and achievement
during 1st qtr; prereq Δ; Sjoberg

2Hw-3Hs Honors Course: Beginning Rus-
sian

4f-5w-6s Intermediate Russian
4-4-4 cr; prereq 3
Expansion of experience in speaking and
understanding Russian, and reading of con-
temporary texts.

UPPER DIVISION COURSES

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

50f-51w Introduction to Literary Analysis
3-3 cr; prereq 6; taught in Russian;
Kulesov

Selections from various genres will be read, analyzed, and discussed to familiarize student with basic techniques and terminology of literary analysis, in context of Russian literature.

56f-57w-58s Russian Conversation
3-3-3 cr; prereq 6 or §

61f-62w-63s Russian Composition
2-2-2 cr; prereq 6 or §; Kulesov

71f-72w-73s Survey of Russian Literature
3-3-3 cr; prereq 6 or §; Prokopov
Includes selected readings of representative Russian literature of various periods, in Russian. Discussion of material in Russian.

75f-76w-77s Russian Civilization and Culture
3-3-3 cr; prereq 10 cr in history or literature

Aspects of Russian culture (land, peoples, languages, institutions, intellectual and artistic trends and achievements).

81f-82w-83s Nineteenth Century Russian Literature in Translation
3-3-3 cr; knowledge of Russian required only for majors who will read assigned portions in the original; may be used for major or minor only with approval of department

81: Pushkin, Lermontov, Gogol.

82: Turgenev and Dostoevsky.

83: Tolstoy and period from 1880.

103f-104w-105s Russian Syntax and Composition
2-2-2 cr; prereq 63; Alexeev
Problems of syntax; practice in Russian prose composition.

107f-108w-109s Structure of Modern Russian
3-3-3 cr; prereq 6 or §; Kleiner

113f-114w-115s Soviet Russian Literature
3-3-3 cr; prereq §; Armes

125f-126w-127s History of Russian Language
3-3-3 cr; prereq 6 or equiv; offered when feasible; Kleiner
Linguistic analysis of historical development of Russian language.

131f-132w-133s Russian Poetry: 19th Century
3-3-3 cr; prereq 73 or §; offered when feasible

141f-142w-143s Dostoevsky
3-3-3 cr; prereq 9 cr in literature; offered when feasible; Hudgins
Analytic approach to study of novels of Dostoevsky.

151f-152w-153s Directed Readings
1-3 cr per qtr; prereq 73 or §; offered when feasible

160w-161s Plays of Anton Chekhov
3-3 cr; prereq 51 or §; offered when feasible; Hudgins

160: Early short works.

161: Full length major plays. Readings and discussions of plays (Russian majors will have separate meetings for reading some of plays in original), of Chekhov's letters pertaining to his drama, and of selected biographical and critical works. Attention will also be given to history of production of major plays.

170f 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.

Serbo-Croatian (Serb)

LOWER DIVISION COURSES

1f-2w-3s Beginning Serbo-Croatian
5-5-5 cr; Sjoberg

4f-5w-6s Intermediate Serbo-Croatian
3-3-3 cr; prereq 3 or §; Sjoberg

208 / Course Offerings and Major Requirements

Slavic (Slav)

UPPER DIVISION COURSES

71f-72w-73s South Slavic Literature
3-3-3 cr; offered when feasible

113f-114w-115s Old Church Slavic
3-3-3 cr; prereq Ling 55 or equiv; offered when feasible
Introduction to Slavic linguistics.

Slovenian (Slvn)

LOWER DIVISION COURSES

1f-2w-3s Beginning Slovenian
3-3-3 cr; offered when feasible on alter-

nating basis with Beginning Bulgarian and Macedonian

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.

LOWER DIVISION COURSES

Lower Division courses in this program are open to Upper Division students only by special permission of the instructor.

1f,w,s Personality
3 cr

Investigation of factors that influence individual human action. Topics studied include personality in nature, culture, society; personality as shaper of culture and history; American character; validation of theories and confirmation of findings.

2f,w,s Work
3 cr; prereq 1

Division of labor and economic organization studied within social framework. Social functions of economic systems. Historical

and social analysis of work ideals. Power and status in industrial societies. Comparison of economic systems.

2B Production and Distribution of Wealth
3 cr; prereq 1; Roshwald

3f,w,s Community
3 cr; prereq 1 or 2

Structures and patterns of human relations in traditional and modern societies. Varieties of group behavior: caste and class, kinship, urbanization, modernization, power distribution. Examination of social theories.

UPPER DIVISION COURSES

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

51f, 52w, 53s Personality, Technology, and Civilization, Community

4,4,4 cr, §corresponding quarter of 1,2,3
Similar to 1, 2, 3 except conducted on more advanced level; particular attention paid to social science methods.

62f,w,s 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; unem-

ployment, immobility, illiteracy, crime, and others. Private and public programs designed to alleviate poverty. Field work in depressed areas.

71f, 72w, 73s 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. Examine 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: 71: Law and social change (Maine, Holmes, Weber).

72: Idea of race in American thought and practice.

73: Culture wholes.

90f, 91w, 92s American Social History: Interdisciplinary Approach

3,3,3 cr, §Hist 90A-91A-92A; Smith. Urbanization in 19th and 20th centuries, and social institutions, ethnic communities and cultural conflict, religion and social change, family and educational socialization processes.

90 and 92: Lectures, readings and research.

91: Independent guided research.

Social Work (SW)

A major in Social Welfare leading to the B.A. degree has been approved and established in the College effective fall, 1968. It is a liberal education program designed to prepare for graduate professional education. It will also qualify one for employment in the field in those positions where the bachelor's degree is the educational requirement.

Professional study in the School of Social Work, which is part of the Arts College, 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, however, to social welfare majors. For entrance requirements see the *Graduate School Bulletin* and the *School of Social Work Bulletin*.

● **Major Sequence in Arts College—**

Prerequisites:

1. An introductory course in Statistics with laboratory (Soc 80—formerly Soc 45—recommended)
2. Humanities 4 or 54
3. Econ B-C or 1-2† or 50A-50B
 Psy 1-2†
 Soc 1
 Pol 1-2
 One introductory course from either Anth 2A or 100, or History (American preferred) or Geog 4 or 41.
4. An introductory course in at least five of the following: anthropology, economics, geography, history, political science, psychology or child psychology, sociology.
5. 12 upper division cr in each of two of the following: anthropology, economics, geography, history, political science, psychology or child psychology, sociology.

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(With departmental approval a 12 cr concentration in another subject area or department, may be taken for one of these two upon showing its relevance to social welfare and student career objective.)

Requirements:

1. Social Work: SW 90, 91, 124
2. Social Theory: one of the following: Soc 170, 171, 172, Pol 160, 161, 162
3. Social Organization and Process: Soc 140 or 144
4. Social History: one of the following: Hist 79, 80, 81, 139C, 140C, 141C, 139J, 140J, 141J, Soc 123
5. Culture and Personality:
 - A. CPsy 80
 - B. Psy 144-145†
 - C. One of the following: Psy 140, 162, Anth 150, 151, 165, Soc 120
6. The Family: one of the following: CPsy 89, Soc 126, 141, 154

UPPER DIVISION COURSES

Soc 90f,w,s American Social Welfare
5 cr; prereq Soc 3; Milstone, Walz, Wiebler

Analysis of American social welfare as basic social institution.

91f,w,s Introduction to Social Work Process
3 cr; prereq Soc 90 or consent of major adviser; Milstone, Walz, Wiebler

Analysis of nature of Social work helping process through study of development of social work theory and its implementation in field of practice.

95, 96 Field Experience

1-6 cr per qtr; prereq sr, 91; offered when feasible

Direct experience under supervision in a social welfare agency.

97, 98, 99 Independent Study

1-3 cr per qtr; prereq sr, 90, 124, ‡

124f Government and Social Welfare

3 cr; prereq Pol 2 or ‡

Philosophy, policy development, and administration of federal, state, and local programs in fields of social insurance, public assistance, welfare services, housing, and like public programs.

Sociology (Soc)

● Major Sequences in Arts College—

Sequence A

Prerequisites:

A. Soc 1

B. Total of 15 cr from sociology, anthropology, education, history, philosophy, political science, psychology, zoology

Requirements:

General sociology is built upon a core requirement of 21 cr as follows:

- A. Soc 53, 82, 111, 120, 145 or 162
- B. Soc 140 or 141
- C. Soc 170 or 171
- D. 9 additional cr in Upper Division sociology courses selected with approval of major adviser.

Sequence B, Pre-Social Work Major

Prerequisites:

- A. Soc 1, 3
- B. Pol 1-2 or 80
- C. Psy 1-2†
- D. Anth 2A or 100
- E. Econ B-C or 50A-B

Sequence B is an interdepartmental sequence recommended as preparation for graduate study in the School of Social Work as well as preferred preparation for some beginning positions in social welfare agencies. The interdepartmental sequence may be taken as a substitute for the major and minor sequences required for the B.A. degree.

Requirements:

- A. Soc 53, 90, 91, one of the following: 112, 118, 152, 153, and any two of 123, 140, 144, 145, 146, 162; and 126 or 141
- B. Anth 165 or Soc 120
- C. CPsy 80 and 81
- D. Hum 54 or 6 Upper Division cr in the humanities, approved by adviser
- E. SW 124 or Soc 103 and one of following: Pol 161, 162, Soc 170, 171, 172
- F. Psy 144-145†

A student majoring in this sequence must earn a minimum of 60 cr in Upper Division courses.

Education for social work is offered on three levels: (a) undergraduate study that includes a broad range of the social sciences and some courses of primarily informational nature that deal directly with social work; (b) 2 years of graduate social work study involving theory, field practice under tutorial

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supervision, and research culminating in the M.S.W. degree, and (c) 2 additional years of study and research leading to the Ph.D. degree. For information about graduate professional preparation for social work see the *Graduate School Bulletin* and the *School of Social Work Bulletin*.

Sequence C

Prerequisites:

- A. Soc 1, 3
- B. Anth 2A
- C. Econ B-C or 50A-B
- D. Pol 1-2
- E. Psy 1-2†

Sequence C is an interdepartmental sequence recommended as preparation for graduate work in criminology and corrections as well as preferred preparation for work in delinquency control. The sequence may be taken as a substitute for the major and minor sequences required for the B.A. degree.

Requirements:

- A. Soc 53, 82, 100 or 102, 103, 118, 119, 123, 144, 145, 120; or Anth 165; Soc 126 or 141, one of following: Soc 170, 171, 172, Pol 161, 162
- B. CPsy 80 and 81
- C. Hum 54 or 6 Upper Division cr in the humanities, approved by the adviser
- D. Psy 144-145†

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation*: 30 cr in sociology including Soc 1, 3, 53, 80, 82 and at least 13 additional cr in courses numbered 50 and above.

See the *College of Education Bulletin* for additional required courses.

For a specialized minor curriculum in social studies see the *College of Education Bulletin*.

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 sections of courses offered each quarter as designated in the *Class Schedule*. He also must complete 6 cr in Soc 97, 98, or 99, for the honors thesis. For information and admission to the program, consult Professor Richard H. Hall.

For purposes of general education the department recommends the following courses: Soc 1, 2, 3, 14, 53, 144, and 145.

The department recommends that its majors take Gen 68 (Human Genetics and Social Affairs).

LOWER DIVISION COURSES**1, 1H, 2, 2H, 3, 3H Introduction to Sociology**

Introduction to field of sociology that constitutes an integrated sequence. Students may, however, elect to take one or more of these courses.

1f,w,s Man in Modern Society

3 cr; McNall

Characteristics of human group life. Analysis of factors associated with development of human group life and man's social environment; structure of social environment and its influence upon individual's behavior.

ID Man in Modern Society

4 cr; McNall, others

Same as 1 but with group discussion. Class will be offered with a discussion section for which student will receive one extra credit. Discussion sections will each have approximately forty students. Discussion sections will be handled by instructors who will review material presented in the video tapes and discuss assigned readings.

1Hf Honors Course: Man in Modern Society

3 cr; prereq #; Zwerman

2f,w,s American Community

3 cr; prereq 1 or 1H or 3; 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. Attempts to familiarize student with current research methods.

2Hw Honors Course: American Community

3 cr; prereq #; Zwerman

3f,w,s Social Problems

3 cr; Fulton, Haurek, Johnson, Rickson, Zwerman

Survey: Contemporary social problems; special emphasis on personal demoralization and social disorganization.

3Hs Honors Course: Social Problems

3 cr; prereq #; Zwerman

10w Sociology Laboratory

2 cr; prereq 1 or #1; Straus

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.

14s Rural Sociology

3 cr

Presentation of factual data necessary to an understanding of problems of rural social life.

14Af,w Rural Sociology

3 cr; for AFHE students

UPPER DIVISION COURSES

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

53f,w,s Elements of Criminology

3 cr; prereq 1 or 1A or 1H or #; Finestone, Ward

General survey of field of criminology.

80 Sociological Methods I: Descriptive Statistics

3 cr, §QA 5, Psy 70; some beginning algebra recom; 2 hrs lect, one 2-hr lab

Descriptive statistics as utilized in analysis of sociological data, measure of central tendency, deviation, correlation and regression, graphs, simple treatment of three and four variables, probability.

80H Sociological Methods I: Descriptive Statistics

3 cr, §QA 5, Psy 70; prereq #, some beginning algebra recommended

Honors students attend regular Soc 80 lecture sections; one laboratory section will be designated solely for honors students.

81 Sociological Methods II: Statistical Inference

3 cr, §QA 5, Psy 70; prereq 80 or equiv; 2 hrs lect, one 2-hr lab

Inferential statistics including a review of probability, tests of hypotheses about means and proportions for one and two samples, confidence limits, analysis of variance, non-parametric tests. Focus on utilizing statistical reasoning in reaching substantive conclusions in analysis of sociological data.

81H Sociological Methods II: Statistical Inference

3 cr, §QA 5, Psy 70; prereq 80H or equiv

Honors students attend regular Soc 81 lecture sections, with one laboratory section designated solely for honors students.

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- 82 Sociological Methods III: Research Methods**
3 cr; prereq 80 and 81 or equiv or #
Survey of data collection methods, including advantages of major methods and limitations when applied to specific types of problems.
- 90f,w,s American Social Welfare**
5 cr; prereq 3; Milstone, Walz, Wiebler
Analysis of American social welfare as basic social institution.
- 91f,w,s Introduction to Social Work Process**
3 cr; prereq 90 or consent of major adviser; Milstone, Walz, Wiebler
Analysis of nature of social work helping process through study of development of social work theory and its implementation in field of practice.
- 95 Introduction to Public Welfare**
3 cr; prereq 90 or consent of major adviser; offered when feasible
Public welfare function of American government with special emphasis on social security programs.
- 97f-98w-99s Tutorial and Honors Work in Selected Fields**
3-3-3 cr; prereq consent of major adviser in sociology
- 100w,s Contemporary Penology**
3 cr; prereq 1, 53, or #; Ward
Prisons as social organizations; description and evaluation of current treatment programs for adult offenders.
- 101f Criminological Theories: Historical and Contemporary**
3 cr; prereq 1, 53, or #
Evaluation of major historical and contemporary theories of criminal behavior.
- 102w,s Adult Parole and Probation**
3 cr; prereq 1, 53, or #; Finestone
Critical examination of problems and practices in supervision of adult criminals.
- 103s Law and Legal System for Correctional and Social Workers**
3 cr; prereq regis in Sequence C or B or #
Study of law and judicial process for social workers, particularly those engaged in correctional field.
- 104f Police Problems and Practices in United States**
3 cr; prereq 1, 53, or #
Personnel, organization, and public relations of police forces, with special attention to successful techniques of integrating police work with other community agencies.
- 105w Institutional Treatment of Juvenile Delinquents: Problems and Practices**
3 cr; prereq regis in Sequence C or B or #
Current problems of institutional treatment of juvenile offenders and contributions of different professions to treatment.
- 106f Planning (same as Arch 132)**
3 cr; prereq sr; Borchert, Iskander, Stone
Social, economic, political, geographic, and technical phases of modern city planning.
- 107f-108w-109s† Observation of Delinquency Control and Treatment**
1-1-1† cr; prereq sr, regis in Sequence C or #; offered when feasible
- 111w Population Theory**
3 cr; prereq 1 or #; Kennedy
Emphasizes cultural and social phases of population change; particular reference to birth rates, death rates, and migration. Implications of population change.
- 111H Honors Course: Population Theory**
3 cr; prereq #; Kennedy
(see description 111)
- 112s World Population Problems**
3 cr; prereq 1 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.
- 115w Social Aspects of Housing and Standards of Living**
3 cr; prereq sr, 1 or #
Analysis of housing of masses in relation to problems arising in urban overcrowding, population distribution, and standard of living as affected by distribution of national income, and factors related to personal and social disorganization.
- 117s Scandinavian Folk Movements: Their Social and Political Significance**
3 cr; prereq 1 or #
- 118f Delinquent Behavior**
3 cr; prereq 53; 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.
- 119w Modern Agencies for Control of Juvenile Delinquency**
3 cr; prereq 53 and 118
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 preven-

tion and modification of delinquent behavior.

120f,w,s Social Psychology

3 cr; prereq 1 or #; Rickson, Stone
Research and theory regarding relation of individual to 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.

120Hf Honors Course: Social Psychology

3 cr; prereq #; Stone
(see description 120)

121s Advanced Social Psychology

3 cr; prereq 120 or #
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.

122w Sociology of Conflict

3 cr; prereq 1 or #
Manifest forms of antagonism among group of persons; causes of conflict; methods of resolving through accommodations; role of conflict and social change.

123f,s Minority Group Relations

3 cr; prereq 1 or #; Finestone
Interaction of social and cultural groups in America; particular reference to Negro. Processes leading to group contact; characteristics and contributions of ethnic groups in United States; mechanisms and problems of group adjustment. Democratic theory and practice; sources of prejudice; contemporary status of principal minority groups; international implications; trends and proposed solutions.

124s Social Movements in a Changing Society

3 cr; prereq 1 or #
Examination of factors underlying social change in modern mass society. Consideration of recent researches on social movements, reform and revolution, culture contact, impact of rapid technological change. The individual and social structure under conditions of rapid social change.

125f Opinion and Communication: Social Factors

3 cr; prereq sr, 1 or 120 or Psy 140 or #...recommended that this course be taken as a 3-qr sequence with Psy 167 and Jour 115

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.

126f,w,s Family Development

4 cr; prereq 1, 120, CPsy 80 and #; Aldous, Hill, Tallman
Natural history of families, how they form, function, and achieve distinctive identities. Developmental growth of children and parents in interaction in seven stages of family life cycle, from engagement planning to family dissolution.

140f,w,s Social Organization

3 cr; prereq 1 or #; Haurek, Zwerman
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.

140Hf Honors Course: Social Organization

3 cr; prereq #; Hall
(see description 140)

141f,w,s The Family

3 cr; prereq 1 or #; Johnson
Evolution of family, development of unity or disunity, roles of the several members of family, methods of investigation of family.

141H Honors Course: The Family

3 cr; prereq #; Tallman
(see description 141)

142s Religion as Social Institution

3 cr; prereq 1 or #; Johnson, McNall
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.

143w Newspaper as Social Institution

3 cr; prereq 1 or #
Analysis of social structure and organizational patterns of newspapers. Types of newspapers and their changing functions and uses in modern society. Mechanisms of social control.

144f,w,s Social Stratification and Mobility

3 cr; prereq 1 or #; Fulton, Nelson
Analysis of form and content of hierarchical arrangements. Relationship of hierarchical arrangements to problems of social order and individual behavior.

144H Honors Course: Social Stratification and Mobility

3 cr; prereq #; Stone
(see description 144)

145f Urban Sociology

3 cr; prereq 1 or #; Stone

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Introduction to study of cities; urban ecology; urban institutions and urban way of life.

146w Formal Organizations

3 cr; prereq 1 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.

146H Honors Course: Formal Organizations

3 cr; prereq #; Hall
(see description 146)

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.

148w Comparative Rural Societies: Latin America

3 cr; prereq 10 cr in sociology, economics or political science, or #; Ellenbogen

Nomadic band, corporate and "open" communities, the plantation-dominated locality and market-town are viewed comparatively. Consideration given to demographic and ecological characteristics, institutional structure and its accompanying associations, linkages with "outside" and "world-view."

149f Latin American Societies in Transition

3 cr; prereq 10 cr in sociology, economics, or political science, or #; Ellenbogen

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. Metropolis is treated as important influence on modernization of hinterland.

150s Sociology of Popular Culture

3 cr; prereq 15 cr in sociology; McNall
Social preconditions and social effects of popular culture. Popular vs. nonpopular culture. Analysis of selected popular arts, institutionalized amusement systems, and popular holidays. Emphasis on both empirical research and socio-historical analysis.

151s Comparative Social Organization

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.

152f Sociology of Medicine and Medical Institutions

3 cr; prereq 1 or #; Fulton

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.

153w Sociology of Leadership and Group Action

3 cr; prereq 15 cr in sociology, psychology, anthropology, political science, history, or #

Survey of nature, function, and sources of leadership in modern society. Description and analysis of techniques of leadership and their role in group actions. Examination and application of instruments for evaluating leadership and participation within groups; organization and function of voluntary groups.

154f Comparative Family Organization

3 cr; prereq 1, Psy 1; Aldous, Straus

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.

155s Social Structure and Political Behavior

3 cr; prereq 1; Tallman

Analysis of structural and ideological conditions influencing legitimation of political institutions and relationships of this process to political participation, political apathy, and rise of mass movements.

160f Rural Community Organization

3 cr; prereq 1 or #

History, structure, and place of rural community in American society; analysis of community demography, ecology, stratification, urbanization, and processes of cooperation and conflict.

161s Rural Community Analysis

3 cr; especially for all persons interested in rural community organization, rural teaching, extension work, and related fields; prereq 1, sr or #; Donohue
Emphasis on tools, techniques, and methods of making community field studies.

170f Analytical Social Theory

3 cr; prereq 1 or #; Martindale

Major problems of sociological theory; main types of sociological theory (positivistic, rationalistic, idealistic); major theoretical concepts.

171w Social Life and Cultural Change

3 cr; prereq 1 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.

172s Backgrounds of Modern Social Thought

3 cr; prereq 1 or ‡; Martindale

Survey of major trends of social thought from Renaissance to 19th century; special attention to those factors contributing to origin of sociology.

173 Elements of Sociological Analysis

3 cr; prereq 9 cr in sociology; McNall

Examination and analysis of premises upon which social theories are developed; special emphasis on what theories are and how they differ in terms of explanatory power; examination of rationale behind use of certain models, and implications of certain statistical assumptions on development of social theories.

180H Honors Course: Methods of Social Research

3 cr; prereq ‡

Survey, including advantages of major methods and limitations when applied to specific types of problems.

181 Data Analysis

3 cr; prereq 180H and 182 or ‡; weekly lab

Theoretical and technological aspects of data manipulation needed to test theories.

182w Statistical Methods

3 cr; prereq 82 and 180H; McTavish

Concept of "distribution" is developed and major distributions of interest to sociological research are assessed. Idea of variance and its analysis including multiple regression is described with sociologically relevant data.

183s Problems in Social Measurement

3 cr; prereq 80 or 182 or equiv; Straus

Theoretical analysis of problems involved in measuring social variables, including consideration of problems of reliability, validity, and standardization in construction of new measuring instruments.

184w-185s†, 186f Field Work and Laboratory Training in Social Research

3-3†, 3 cr; prereq 80 or equiv, and 180H or equiv; Aldous, Straus, Tallman

Direct experience with variety of research techniques.

187w Quantitative Research Design

3 cr, §Geog 187; prereq Geog 87, Soc 80, ‡

Formulation of quantitative problems in social sciences for hypothesis-testing and data processing; applications and use of tabulating equipment and computers for projects selected by students.

188s Area Sampling and Analysis

3 cr, §Geog 188; prereq Geog 87, Soc 80, ‡

Design and selection techniques for areally-sampled information in social science research; evaluation of census, field and map methods for error control; literature survey and individual student project.

195 Sociology of Education (same as HED 190)

3 cr; prereq 1 or ‡; Bennett

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, East and South Asian Languages, Economics, Geography, History, Philosophy, Political Science, and Sociology.

See respective departments for course descriptions.

SPAN/see Foreign Study

Spanish/see Romance Languages

Speech, Communication, and Theatre Arts

● Major Sequences in Arts College—

I. Broadcasting (Spch) (see p. 221)

Prerequisites:

- A. Spch 5 or 2 and 6, Th 11, 12
- B. Psy 1-2†, Jour 1, 5

Requirements:

- A. Spch 61, 65, 66, 68, 69, 81, 106, 170, Jour 86 or equiv
- B. 3 cr each in two of the following four groups:
 - Spch 70, 171, 172, Th 63
 - Spch 173, 174
 - Spch 175, 176, 177
 - Spch 117
- C. 3 cr in other Upper Division speech and/or theatre courses

Recommended:

- Jour 84, 85, 90, 105, 111, 112, 114, 131, 162
- Psy 140, 156, Pol 167, 168, Soc 150

II. Communication (Spch) (see p. 222)

Prerequisites:

- A. Spch 5 or 2 and 6, Th 11
- B. Psy 1-2†

Requirements:

- A. Spch 52, 61, 101, 106, 165
- B. Spch 51 or 65 or 81 or 101A
- C. Additional Upper Division courses from communication sub-field to total 27 cr in major

III. Oral Interpretation (Spch) (see p. 223)

Prerequisites:

- A. Spch 5 or 2 and 6, Th 11, 12

B. Th 21 or 18, 19, 20

C. Psy 1-2†

Requirements:

A. Spch 81-82, 83, 105, 107, 108 or 181, 182 (senior project)

B. 9 additional cr in Upper Division speech and/or theatre courses

Recommended:

Engl 55-56 and other literature courses

IV. Rhetoric and Public Address (Spch) (see p. 223)

Prerequisites:

A. Spch 5 or 2 and 6, Th 11

B. Psy 1-2†

Requirements:

A. Spch 51, 52, 61, 101, 101A, 109, 125

B. 12 additional cr from Rhetoric and Public Address subfield.

V. Speech, Science, Pathology, and Audiology (SSPA) (see p. 224)

Prerequisites:

A. Spch 5 or 2 and 6

B. Psy 1-2†, 4-5†

C. Phil 2

D. Math 10

Requirements:

SSPA 99, 119, 120, 121, 122, 140, 143, 170, 171, 172

Recommended:

Lower Division students are urged to acquire a broad background in the natural and social sciences. Suggested courses are Anth 2A, Biol 1-2†, Soc 1, Econ 1. Students should plan on beginning their Upper Division programs in fall, spring, or summer terms.

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VI. Theatre (Th) (see p. 226)

Prerequisites: Spch 5 or 2 and 6, Th 11, 12, 21, 34

Requirements:

- A. Th 51A, 52A, 53A, 51B, 52B, 53B
- B. 6 cr from Th 90, 91 or 92
- C. Th 111, 113 or senior project
- D. Spch 81
- E. 12 cr in other Upper Division speech and/or theatre courses

Recommended:

Psy 1-2†; ArtS 20, 24, 60B; Clas 81, 82, 91, 92, 93 (or 181, 182, 191-192-193); Engl 55-56, 126, 127, 129; Ger 140, 141, 142; HE 22, 50, 125; Scan 171, 172, 173; Phil 151.

Requirements for 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. 16).

● **Requirements for a Teacher's Certificate**—Majors in the College of Education are offered two curricula in Speech, Communication, and Theatre Arts and one in Speech Pathology. For details see the *College of Education Bulletin*.

Honors Program—Students planning a major in Speech, Communication, and Theatre Arts who have a 3.00 grade point average, both overall and in the major department, are encouraged to apply for honors, preferably in the third quarter of their sophomore year. Application should be made at the Honors Division office, 115 Johnston Hall. The student should also inform his major adviser and consult with the department honors representative in 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.

Speech and Hearing Clinic—The University maintains a clinical service for students with speech or hearing defects. Students who desire treatment should visit the Speech and Hearing Clinic, 110 Shevlin Hall.

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 2, 3, 4, 5, 50, 51, 55, 61, 65, 81, 82, 83, 106, Th 11, 12, 171, 172, 173.

Speech-Communication (Spch)

LOWER DIVISION COURSES

2 Communication in Modern World: Interpersonal Communication

3 cr; D. H. Smith, D. K. Smith
Description of structure of acts of communication and of factors influencing occurrence, form, and effects of such acts. Analysis of relationship of communication forms in social structure.

3 Communication in Modern World: Mass Media

3 cr, §Jour 3; 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 and "mass culture."

4 Communication in Modern World: Performing Arts

3 cr; Ballet
Application of principles of communication to arts of film, theatre, television, and other media.

5 Fundamentals of Speech

5 cr; Shapiro, others

Development of basic skills in meeting variety of speech situations; extemporaneous speaking, oral reading, discussion. Development of basic understanding of speech processes and forms.

5H Honors Course: Fundamentals of Speech

5 cr; prereq 3rd qtr fr with B avg; Bart, Shapiro, D. H. Smith

6 Fundamentals of Speech

3 cr, §5; prereq 2 or ¶2; Shapiro, others
Emphasis on investigation and persuasion ranging from informal committee session to formal meeting requiring parliamentary rules.

6A Voice and Articulation

3 cr; prereq 5 or 6 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.

9 Freshman Discussion and Debate

1 cr; open to freshmen who qualify for Freshman Debate Squad; prereq fr with C avg; Brock

UPPER DIVISION COURSES

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

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.

122 Introduction to Research

3 cr; prereq sr, 5 or 6, Psy 2; Bormann
Graduate research in speech; selection of topics and methods of investigation. Required of all graduate majors in speech.

181, 182, 183 Readings in Speech

Cr ar; prereq 9 cr in Upper Division speech courses and #
Directed reading and preparation of reports on selected subjects.

Broadcasting (Spch)

65 Introduction to Broadcasting Production

3 cr; prereq 5 or 6; Bart, Browne, Goldstein

Fundamentals of practice and theory in radio and television. Emphasis on projects and exercises in performance and scripting; introduction to studio equipment and procedures. Historical and sociological aspects of broadcasting.

66 Laboratory Section: Broadcasting Production

1 cr; prereq 65 or ¶65; Bart, North
Arts and techniques of television. Basic experience with cameras, lighting, floor direction, and particularly planning and constructing television visuals and settings in on-the-air professional production environment.

68 Radio Production

3 cr; prereq 65; Browne
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.

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69 Television Production

3 cr; prereq 65; Bart, Browne, Goldstein
Introduction to problems of production. Equipment and staff organization; interrelationships with program design. Exercises in production.

70 Television Production: Drama

3 cr; prereq 69
Instruction and practice in specialized area of television production of drama. Aesthetics and techniques of use of television as dramatic medium.

117 Writing Radio and Television Drama

3 cr; prereq 65, #; Browne
Physical, psychological, and sociological aspects of radio and television and their influence on writer. Script writing in various forms from dramatic commercials to dramas and documentaries.

Th 141, 142, 143 Production of Television Drama

(see listing under Theatre)

170 Radio and Television Programming

3 cr; prereq 65; Bart, Browne, Goldstein
Theory and practice. Principles of program effectiveness; program policies of the industry. FCC and programming. Emphasis on talk and discussion.

171 Advanced Television Production I

3 cr; prereq 69; Bart
Students carry out creative problems in television production and direction. Special emphasis on advanced program design as well as lighting, audio, camera, and electronic techniques.

172 Advanced Television Production II

3 cr; prereq 171 and #; Bart, North
Advanced students solve production problems and apply creative techniques for regularly broadcast television programs. Currently offered with staff and facilities of KTCA.

173 Educational Television Production

3 cr; prereq 172 or #; Goldstein
Special emphasis on uses for instruction; review of research literature as applied to production of materials; experimental preparation of such materials.

174 Educational Television Programming and Administration

3 cr; prereq 170, 173 or #; Goldstein
Television applied to educational needs; current practices; significant research findings; relative effectiveness of differing types of television utilization; impact of various modes of transmission on programming and administrative concepts.

175 Comparative Broadcast Systems

3 cr; prereq 170 or #; Browne

Historical, sociological and political aspects of various systems of broadcasting throughout 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.

176 International Broadcasting

3 cr; prereq 12 cr political science or #; Browne

Broadcasting as an international medium of communication in U.S., Great Britain, U.S.S.R., Japan, other countries. 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.

177 Broadcasting and National Development

3 cr; prereq 175 or #; Browne
Purposeful employment of radio and television to effect changes in social, political, economic, and cultural life of various peoples and nations. Particular concentration on use of broadcasting by developing nations to improve agricultural practices, promote better hygienic standards, increase literacy, and develop awareness of civic responsibility.

Communication (Spch)

61 Process of Interpersonal Communication

3 cr, §161; prereq 5 or 6 or #, Psy 2; Piche, Shapiro, D. H. Smith
Basic orientation on place of speech and language in human behavior; discussion and nature and function of communication process.

101 Process of Persuasion

3 cr; prereq 5 or 6, Psy 2, 10 cr in social science or #; Howell
Theories of modern motivational communication. Analysis of process of social control through persuasive speech.

101A Persuasion Laboratory

2 cr; prereq 101 or §101; Howell, others
Practice and case study of varied methods of persuasive speaking.

106 Small Group Communication

3 cr; prereq 52 or #; Bormann
Study of communication and dynamics within small, task-oriented group. Group cohesiveness, leadership, role structure, information processing, and decision making.

111 Intercultural Speech-Communication

3 cr; prereq 61, Anth 2 or 100, or other course in cultural anthropology, or #; Howell

Survey of factors important to successful interpersonal communication across cultures. Linguistic and non-verbal variables. Emphasis upon North Americans abroad, communication with host nationals.

116 Communication in Human Organizations

3 cr; prereq 2 or 61, or 10 cr in social sciences or grad; Shapiro, D. H. Smith
Analysis of functions of communication in organizational settings. Study of organizational structure and dynamics and their effect upon communication process. Collateral readings and individual projects.

124 Quantitative Research in Communication

3 cr; prereq 61 or 161, 122 or #; D H Smith
Review and discussion of experimental and descriptive research; analysis of research design and procedures; individual research projects.

161 Advanced Process of Interpersonal Communication

3 cr, §61, but grad students must satisfy additional requirements by writing papers on advanced topics; Piche, Shapiro, D H Smith

162 Breakdowns in Interpersonal Communication

3 cr; prereq 61 or 161 or #; offered alternate years
Factors contributing to misunderstanding, not understanding, disagreement and cessation of contact in dyads.

165 Theories of Interpersonal Communication

3 cr; prereq 61 or 161 or #; D H Smith
Various theories of human communication. Analysis of their usefulness for particular purposes. Problems in developing communication theories.

169 Speech and Language in Human Behavior

3 cr; prereq 61 or 161; Piche
Basic orientation on place of speech and language in human behavior. Individual projects and collateral reading.

Oral Interpretation (Spch)

81-82, 83 Interpretative Reading

3-3,3 cr; prereq 5, jr or sr, or 6; 81 is prereq to 82 or 83; Thompson, Fredricks, others

Aesthetic theory of literature and of oral reading. Practice in reading for interpretation and mastery of technique.

105 Theory of Reading and Acting

3 cr; prereq 82, 83 and Psy 2; Fredricks, Thompson
Literature as an art; its various forms; psychology of creative imagination; speech elements in literature; origins and nature of speech symbols and techniques of their use.

107 Platform Reading

3 cr; prereq 82, 83; Fredricks, Thompson
Advanced course in oral interpretation of selected poems and plays. Speech melody, rhythm, platform techniques. Problems in aesthetic analysis. Group readings.

108 Classical Voices of Poetry: Epic, Lyric, Dramatic

3 cr, §Clas 108; prereq 82, or 83, or Th 61 or 3 cr Latin or Greek courses numbered 60 or above, or 3 cr in Upper Division courses in English literature or foreign literature, or #; Sonkowsky
Oral performance of selected Greek and Roman texts both in original language and in translation.

Rhetoric and Public Address (Spch)

50 Public Speaking

3 cr, §5; prereq Upper Division standing
Principles of preparing and presenting public speeches; directed practice in public speaking. Consideration of functions of public speaking in contemporary life.

51 Advanced Public Speaking

3 cr; prereq 5 or 6; Bart, Brock, Scott, Shapiro, D H Smith
Preparation and delivery of speeches on current public issues.

52 Discussion and Conference Methods

3 cr; prereq 5 or 6 or #; Bormann, Cashman, Howell
Cooperative thinking in task-oriented groups. Planning, preparing for, participating in and leading private and public meetings.

55 Speech Writing and Platform Speaking

3 cr; prereq 51 or #; Bormann, Piche
Essentials of speech writing, organization, style. Presentation of speeches from manuscripts.

67 Phonetics

3 cr; prereq 5 or 6
Sounds of American English as they occur separately and in connected speech. Strong and weak forms, stress, assimilation. Practice in ear training.

97 Intercollegiate Oratory and Debate

2 cr; open to students who represent University in annual contest of Northern Oratorical League, and to students who

224 / Course Offerings and Major Requirements

qualify for intercollegiate debate squad;
prereq soph with C avg, jr; Brock

97A Intercollegiate Oratory and Debate

3 cr; for students interested in inter-scholastic speech competition; recommended for majors in College of Education; prereq 5; Brock

101 Process of Persuasion

3 cr; prereq 5 or 6, Psy 2, 10 cr in social science or ♯; Howell

Theories of modern motivational communication. Analysis of process of social control through persuasive speech.

101A Persuasion Laboratory

2 cr; prereq 101 or ¶101; Howell, others
Practice and case study of varied methods of persuasive speaking.

102 Contemporary Political Persuasion

3 cr; prereq 5 or 6, 101 or ♯; Brock
Contemporary political speaking. Analysis of ideologies in political persuasion.

103 Argumentation

3 cr; prereq 5 or 6 or ♯; Brock, Howell, Scott
Role of reasoned discourse in social and governmental affairs. Logical methods of persuasion.

106 Small Group Communication

3 cr; prereq 52 or ♯; Bormann
Communication and dynamics within small task-oriented group. Group cohesiveness, leadership, role structure, information processing, and decision making.

109 Classical Rhetoric

3 cr; prereq 5 or 6; Scott
Greek and Roman theories of speech making; historical and philosophic context and influence on education.

110 History and Criticism of British Public Address

3 cr; prereq 5 or 6; Jensen
British orators, their works, historical setting. British rhetorical theory.

125 Introduction to Rhetorical Criticism

3 cr; prereq 5 or 6; 55 recommended; Bormann, Brock, Piche
Introduction to traditional and contemporary rhetorical theory and its application to contemporary public address.

126A History and Criticism of American Public Address

3 cr; prereq 5 or 6, Psy 2; Bormann
Survey: history and criticism of religious and reform speaking in United States from 1620 to 1920.

126B History and Criticism of American Public Address

3 cr; prereq 5 or 6, Psy 2; Bormann
Survey: history and criticism of political speaking in United States from time of Revolution to present.

126C History and Criticism of American Public Address

3 cr; prereq 5 or 6, Psy 2; Bormann
Survey: history and criticism of speaking on foreign policy issues in United States from Revolution to present.

Speech Science, Pathology, and Audiology (SSPA)

UPPER DIVISION COURSES

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.

101, 102, 103 Readings

Cr ar; prereq ♯
Directed readings and preparation of reports on selected topics.

119 Fundamentals of Sound

3 cr; Ward
Elements of acoustics necessary to understanding quantitative aspects of speech pathology or audiology. Vibrators, transmission systems and their mathematical counterpart.

120 Anatomy and Physiology of Speech and Hearing Mechanisms

3 cr; prereq 119 or ♯; Lassman, McDermott
Gross anatomy and function of structures related to respiration, phonation, articulation, and audition.

121 Acoustic Phonetics

3 cr; prereq 120 or ¶120
Physiological and acoustical variables differentiating speech signals. Various phonemic classification systems including I.P.A. and Distinctive Feature Analysis; phonemic transcription is practiced.

122 Voice Science

3 cr; prereq 121
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.

123 Laboratory Instrumentation

3 cr

Basic electronics from Ohm's Law to vacuum tube and transistor amplifier design. Designed to give speech student a basic knowledge of instrumentation he will encounter in his field.

140 Diagnosis and Evaluation of Speech Disorders

4 cr; prereq 99 and 121 or ¶121, and §; Gimmetstad, Martin

Consideration of research and clinical materials relative to construction, administration, and interpretation of various diagnostic instruments. Observation and participation in various diagnostic speech facilities.

141 Stuttering

3 cr; prereq 99 or §; Martin

Analysis of materials relating to development, characteristics, and treatment of stuttering. Class demonstrations and individual projects.

142 Voice Disorders

3 cr; prereq 99, 120 or §; Aronson, Starr

Voice disorders (pitch, loudness, quality), their symptomatology, etiology, diagnosis, and treatment.

143 Articulation Disorders

3 cr; prereq 99, 121 or §; McDermott

Research and theory of nature, etiology, and treatment of articulatory problems.

144 Neuromuscular Disorders

2 cr; prereq 120, 143 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.

145 Aphasia

2 cr; prereq 99, 120 or §; Schuell

In adults and children. Etiology, language, and associated nonlanguage problems; therapeutic considerations and procedures.

146 Cleft Palate

2 cr; prereq 120, 143; Starr

Survey of medical, dental, and communication problems that occur in conjunction with cleft palate.

147 Rehabilitation of the Laryngectomized

2 cr; prereq 99, 120 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.

150 Speech Retardation

3 cr; prereq 99; Siegel

Theory and experimental research dealing with speech development as related to delayed or retarded speech.

164, 165 Clinical Methods and Practice in Speech Pathology

1-3 cr per qtr; prereq 141, 142, 143 or §

166A Clinical Methods and Practice in Speech Pathology: Cleft Palate

1-3 cr; prereq 146 or §; Starr

166B Clinical Methods and Practice in Speech Pathology: Voice

1-3 cr; prereq 142 or §; Starr

166C Clinical Methods and Practice in Speech Pathology: Articulation

1-3 cr; prereq 143 or §; McDermott

166D Clinical Methods and Practice in Speech Pathology: Stuttering

1-3 cr; prereq 141 or §; Martin

166E Clinical Methods and Practice in Speech Pathology: Neuromuscular Disorders

1-3 cr; prereq 144 or §

166F Clinical Methods and Practice in Speech Pathology: Aphasia

1-3 cr; prereq 145 or §

166G Clinical Methods and Practice in Speech Pathology: Laryngectomy

1-3 cr; prereq 147 or §; Henrikson

166H Clinical Methods and Practice in Speech Pathology: Hearing Impaired

1-3 cr; prereq 170 or §

170 Hearing Disorders

3 cr; prereq 99 or 120, §; Lassman

Basic orientation to audiology. Symptomatology and pathology of hearing disorders, their medical and surgical treatment. Clinical and educational management. Psychological effects of hearing impairment.

171 Audiometry I

4 cr; prereq 170 or §; Chaiklin

Pure tone and audiometry; air and bone conduction; screening audiometry; hearing conservation program.

172 Communication Problems of the Hearing Impaired

3 cr; prereq 170 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.

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173 Audiometry II

2-3 cr; prereq 171 or #; Chaiklin, McClellan

Selected advanced audiometric procedures, their theoretical bases, and their relation to assessment of auditory disorders. Loudness matching (recruitment) procedures, bone conduction, masking, difference limen procedures, Bekesy audiometry, and adaptation tests.

174 Speech Audiometry

3 cr; prereq 122, 171 or #; Chaiklin

Use of speech signals in evaluating auditory system's function; types of stimulus materials, methods of administration, and interpretation of results; research on theoretical and applied aspects.

175 Galvanic Skin Response Audiometry

3 cr; prereq 173; Chaiklin

Galvanic skin response audiometry in differential diagnosis of auditory disorders; nature of CSR mechanism; historical aspects and conditioning literature relevant to audiometry. Includes laboratory experience.

176 Hearing Science

3 cr; prereq 119 or Psy 55 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.

177 Industrial Audiology and Occupational Hearing Loss

3 cr; prereq 171 or #; Ward

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.

180 Auditory Training

3 cr; prereq 171 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.

181 Speech for the Hearing Impaired

3 cr; prereq 170 or #

Speech problems resulting from impaired hearing. Survey of approaches of developing and teaching speech to the hearing impaired individual.

182 Lipreading and Lipreading Methods

3 cr; prereq 170 or #

Theory, principles, and methods of teaching lipreading. Considerations of visual perception and learning. Supervised practice in teaching lipreading to hard-of-hearing persons.

183 Language for the Hearing Impaired

3 cr; prereq 170 or #; Moores

Language problems resulting from impaired hearing. Survey of approaches of developing and teaching language to the hearing impaired individual.

190, 191, 192 Clinical Methods and Practice in Audiology

3,3,3 cr; prereq 173 or 174 or #; Chaiklin, others

Methods and supervised practice in analysis, diagnosis and habilitation of communication disorders of persons with auditory impairments.

Theatre Arts (Th)

LOWER DIVISION COURSES

11 Introduction to Theatre Arts

3 cr; Ballet

History and theory of plays and production as well as various arts and crafts of theatre.

12 Laboratory Section: Introduction to Theatre

1 cr; prereq 11 or ¶11; Adey

Practice of arts and crafts of theatre; scenery and particularly construction and painting, stage operation, publicity and promotion, theatre lighting, costuming, or make-up.

13H Honors Course: Introduction to Theatre

1 cr; prereq 11 and #

Enrichment honors course for students who have completed Th 11 with outstanding work in class.

18-19-20 Voice Production for Theatre

2-2-2 cr; prereq soph, 12 or ¶12; Corrigan

Physical exercises designed to improve voice production. Work on prose, poetry and drama. Vocal exercises with piano.

21 Beginning Acting: Creative Approach

3 cr; prereq fr with Δ or soph, 12 or ¶12; Herstand, Klein

Creation and presentation of original scenes and skits. Stresses ability to respond to

Speech, Communication, and Theatre Arts / 227

imagined situation with individuality and effectiveness.

22 Beginning Acting: Creating a Role

3 cr; prereq 21; Herstand, Klein
Application of creative techniques to analysis, understanding, and theatrically effective communication of roles from dramatic literature.

23 Beginning Acting: Technique

3 cr; prereq 21 or #; Moulton

Fundamentals of body movement, rhythms, and acting technique. Individual and group performances.

24 Stage Make-up

1 cr; prereq 12 or ¶12
Theory and practice in art of stage make-up.

34 Stagecraft: Construction and Painting

3 cr; prereq soph, 12; Adey, others
Theory and practice in construction, painting, and shifting of stage scenery.

UPPER DIVISION COURSES

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

51A, 52A, 53A Our Theatre Today

½, ½, ½ cr; prereq acceptance as an undergrad theatre major or #; required of jr theatre majors

Discussion and analysis of current trends, problems and achievements in theatre of the present day.

51B, 52B, 53B Our Theatre Today

½, ½, ½ cr; prereq 53A; required of sr theatre majors

Discussion and analysis of current trends, problems and achievements in today's theatre.

54, 55, 56 Stage Fencing and Combat: History and Execution

1, 1, 1 cr; prereq 12 or ¶12, #
History of weapons through the ages; fighting and fencing with these weapons—their use in stage combat.

61-62, 63 Advanced Acting

3-3, 3 cr; 61f open only to students in major sequence; 61w,s open to others; prereq 22 or 23; 61 prereq for 62 or 63
61: Characterization, styles of acting, and stage technique. Presentation of scenes from great plays.

62: Continuation with emphasis upon stage dialects.

63: Acting for radio and television.

74 Play Production in Secondary School

3 cr; prereq 12; Adey
Technical fundamentals: stagecraft, design, lighting, and costuming.

75 Play Production in Secondary School

3 cr; prereq 74; Adey
Fundamentals including the analysis and production of selected scenes.

76 Play Production in Secondary School

3 cr; prereq 75 or 112 or #; Adey
Administration of dramatics program in high school. Direction of full-length play.

77 Theatre Dance

3 cr; prereq 23 or #
To acquaint actors with specific dance techniques and practice and performance of dances in the theatre.

88H, 89H Interdisciplinary Honors Seminar: Music, Studio Arts, Theatre

2-4 cr per qtr, §ArtS 88H, Mus 88H, ArtS 89H, Mus 89H; prereq jr, sr honors candidate, #

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.

90 Costuming

3 cr; prereq 34
Theory of design, and construction of costumes for theatrical production.

91 Scene Design

3 cr; prereq 34; Josal
Theory and practice of designing scenery for theatrical production.

92 Stage Lighting

3 cr; prereq 34; Scales
Theory and practice of lighting for theatrical production.

94H, 95H, 96H Honors Course: Tutorial Seminar in Theatre Arts

3, 3, 3 cr; prereq theatre honors candidate and Δ; #
Independent reading, thesis preparation, and discussion of research in selected fields.

100 Introduction to Research

3 cr; prereq sr, Spch 5 or 6, Psy 2; Bormann
Graduate research in theatre arts; selection of topics and methods of investigation.

101, 102, 103 Theatre Practicum

2-6 cr per qtr; prereq Δ, #

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Directed individual creative projects meeting approval of a faculty committee in one or more of these areas: playwriting, directing, acting, and design.

101A Showboat Laboratory
2-6 cr; prereq Δ , $\#$; Moulton, Corrigan

111-112-113 Stage Direction
3-3-3 cr; prereq sr, 21, 6 cr from 90, 91, 92 and $\#$; Balk, Whiting

111: Theory of direction. Exercises in blocking and production of short scenes.

112: Rehearsal problems and direction of two one-act plays.

113: Problems of theatre management and staging; direction of full-length play.

114 Theatre Management and Promotion
3 cr; prereq 12 or ¶12 or $\#$; Loppnow
Theory and practice in ticket office procedures, house management, publicity and promotion; special problems in college, community, children's and professional theatre.

115-116-117 Playwriting
3-3-3 cr; prereq 21 or $\#$; Thompson, Nolte

After evidence of thorough groundwork in established techniques of well-made play, student is encouraged to use other, more experimental forms.

115: One-act play.

116-117: Full-length play.

118-119-120 Voice Production for Theatre
2-2-2 cr; prereq grad and theatre major; Corrigan

Physical exercises designed to improve voice production. Work on prose, poetry, and drama. Vocal exercises with piano. Required attendance at taped listening sessions.

121-122-123 Problems in Acting
3-3-3 cr; prereq 62 and $\#$; 5 hrs per wk; Graham, Herstand, Klein

Acting problems stemming from differences in genres and styles of dramatic production from Greeks to present. Emphasis on intensive scene and character analysis and on skill in communicating character and concept to audience in individual and group performance.

127, 128, 129 Production for Lyric Stage
3,3,3 cr; ¶Mus 147, 148, 149; prereq $\#$; Balk

Problems in acting, staging, and administration for lyric stage.

131 Creative Dramatics
3 cr; prereq 12 or ¶12, or elementary education major, or $\#$...21 recommended; Graham

Principles and methods of developing original dramatizations with children. Observa-

tion of children's classes in creative dramatics. Readings, projects, term papers.

132 Children's Theatre
3 cr; prereq 12 or ¶12, or $\#$; Graham
Selection, direction, and production of plays for children's audiences, coordinated with current productions of Young People's University Theatre.

141-142-143 Production of Television Drama
3-3-3 cr; prereq 63, 111, 112, $\#$; offered 1969-70 and alt yrs

Televised drama produced and analyzed with reference to adaptation of techniques and theory from stage production. Intended primarily for theatre majors.

151 Theatre Symposium
6 cr; prereq grad or $\#$; Ballet, others
Intensive study of art of theatre with particular emphasis on productions and production methods of Tyrone Guthrie Theatre. Conducted by professional critics, actors, directors and designers as well as University faculty members.

171, 172, 173 History of Theatre
3,3,3 cr; prereq sr, 12 and 100 or $\#$; Balk, Klein, Nolte
Plays, arts, and crafts of theatre from their beginnings to present. Reports and projects.

174-175-176 History and Technique of Stage Movement
3-3-3 cr; prereq 171, 172, 173 and $\#$; Moulton

Application of historical research in areas of manners, games, and dances to techniques of body movement for stage.

177, 178, 179 Theatre Backgrounds
3,3,3 cr; prereq sr with $\#$, grad, 11 or equiv plus 9 Upper Division cr in Speech-Theatre, English, Classics or modern languages; offered when feasible; Ballet

Selective examination of plays as part of living theatre. Chronological, comparative study of development of theatrical elements in drama from its origins through present time.

180 American Theatre
3 cr; prereq 12 or grad; offered when feasible; Nolte, Woods
Theatre as aspect of American culture from 1752 to present.

181, 182, 183 Readings in Theatre Arts
Cr ar; prereq 9 cr in theatre and $\#$
Directed reading and preparation of reports on selected subjects.

190 Advanced Problems in Costuming
3 cr; prereq 112 or $\#$; offered alt yrs with 290
Theory and design of costumes; special projects.

191 Advanced Problems in Scene Design
 3 cr; prereq 112 or #; Josal
 Theory and design of stage scenery; special reports and projects.

192 Advanced Problems in Stage Lighting
 3 cr; prereq 112 or #; Josal
 Theory and design of stage lighting; special reports and projects.

Statistics (Stat)

● **Major Sequence in Arts College**—Calculus through Math 108, or 130C, 131A or 149, and 21 cr in Upper Division courses including Stat 131-132-133. Students majoring in statistics and minoring in mathematics, must take 6 additional cr in Upper Division courses in mathematics or statistics.

LOWER DIVISION COURSES

41 Introduction to Ideas of Statistics
 3 cr; prereq Math 10 or #
 Role of statistics in scientific investigation. Deterministic and probabilistic models as

an aid to inference. Types of inference and decision procedures. Bayes' theorem. Maximum likelihood, best unbiased and likelihood procedures. Decision theory.

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.

90 Introduction to Probability and Statistics
 3 cr, §121, 131; prereq differential and integral calculus
 Elementary probability and probability distributions; sampling and elements of statistical inference.

variance, confidence intervals, distribution-free methods.

101w Introduction to Decision Theory
 3 cr, §132; prereq Econ 101A, or Math 40, 42, or 13, or #
 Elements of probability; basic concepts in statistical decision theory; relationship to game theory and other types of decision problems; prediction and inference.

131-132-133 Theory of Statistics
 3-3-3 cr; prereq ¶Math 55 for 131, ¶Math 107-108 for 132-133, or equiv
 131: Probability models, univariate and bivariate distributions, independence, basic limit theorems.

132-133: Statistical decision theory, sampling, estimation, testing hypotheses, parametric and nonparametric procedures for one-sample and two-sample problems, regression, analysis of variance.

PubH 110A-110B-110C Statistical Methods (Biometry)
 3-3-3 cr; prereq Math 10 or # and ¶PubH 111A, 111B, 111C
 (see Biometry listings)

Math 133B-134B Probability with Technological Applications
 3-3 cr; prereq Stat 131 and #
 Spectral analysis of stationary processes, linear and nonlinear transformations, recurrent events, random walk and diffusion, Markov chains, Poisson processes.

PubH 111A, 111B, 111C Statistical Methods Laboratory (Biometry)
 2,2,2 cr; prereq ¶PubH 110A-110B-110C
 (see Biometry listings)

144-145 Theory of Sample Surveys
 3-3 cr; prereq 123 or 133
 Mathematical treatment of survey sampling, including stratified and multistage sampling, models for nonsampling errors.

121f-122w-123s Theory of Statistics
 3-3-3 cr, §131-132-133; prereq Math 42 for 121, Math 43 for 122, Math 44 for 123, or equiv
 Univariate and multivariate distributions, law of large numbers, sampling, likelihood methods, estimation and hypothesis testing, regression and analysis of variance and co-

IE 171 Quality Control
 3 cr; prereq 90 or 131 or #
 Quality standards, application of statistical methods and sampling theory, interpretation of results and corrective action.

230 / Course Offerings and Major Requirements

QA 171 Statistical Methods for Sample Surveys

3 cr; prereq QA 51 or Math 51 or QA 161 or Math 161 or equiv

Introduction to commonly used sampling methods, including stratified sampling, multistage sampling and cluster sampling, methods of estimation, including ratio and regression estimates; design of surveys taking into account various costs; statistical measurement and control of nonsampling errors.

IE 177 Industrial Sampling Techniques

3 cr; prereq IE 171 or Math 171

Selection and operation of attributes sampling plans; operating characteristic curves; sampling techniques for continuous production; variables sampling plans; administrative and economic comparisons.

Math 178A-B-C Introduction to Probability

3-3-3 cr; prereq Math 108 or Stat 133 or #

Probability theory and its applications; emphasis on logical development.

QA 181 Quality Control and Industrial Statistics

3 cr, §IE 171; IE 177; prereq QA 51 or Math 51 or QA 161 or Math 161 or equiv

Acceptance sampling by attributes and variables; construction of single, double, and

multiple acceptance sampling plans; statistical control charts and their operation; effectiveness of control charts; modification of control charts for special problems.

181A, B, C Topics in Statistics

3,3,3 cr; prereq 123 or 133 and #

Topics vary according to needs and available staff; may be repeated for credit.

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.

191f-192w-193s Analysis and Design of Experiments

3-3-3 cr; prereq 123 or 133, and matrix theory

Theory and applications of general linear model, regression, analysis of variance, and design of experiments.

194 Introduction to Multivariate Analysis

3 cr; prereq 133 and Math 131A or #

Multivariate normal distribution and its properties. Inference on sample mean vectors and covariance matrices. Distribution and uses of sample correlation coefficients. Distribution and uses of Hotelling's T^2 statistic. Discriminant function.

Studio Arts / see Art, Studio Arts

Swedish/see Scandinavian

Theological Training, Preparation for

The title "Preparation for Theological Training" is accurate in fact but misleading in emphasis. That the studies taken in a liberal arts college actually precede seminary training is obvious enough. That their main function should be to prepare the student for seminary work is dubious. An even more important task is getting the student ready for his total responsibility as a minister and as a citizen—most particularly in those areas where the liberal arts college should be able to do the job more effectively than a specialized seminary program can be expected to do.

The student should, of course, determine as early as possible what seminary he plans to attend and what prerequisites it demands. But he should study its catalogue just as much to learn those areas in which it does *not* offer training as to ascertain those in which it does, to be able to plan his program with a clear sense of his mission as a minister and of the part that liberal arts can play in fulfilling that mission.

A special Lower Division curriculum has been devised which satisfies the Arts College distribution requirements and, at the same time, provides a num-

ber of modifications. The freshman who is considering entering a theological seminary should talk over the program with a specially designated Lower Division adviser and also discuss it with one of the major advisers. Such consultation will be useful whether or not the student decides to elect the interdepartmental program.

Copies of the special Lower Division curriculum may be obtained in the office of the Associate Dean for Student Personnel, 106 Johnston Hall.

Tibetan/see East and South Asian Languages

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.

52f General and Comparative Embryology

5 cr; prereq Biol 2 or 50; Spratt
Embryological development of vertebrate and invertebrate forms.

65f,s Histology

5 cr; not open to regular 3-yr premed or predent students; prereq Biol 2 or 50; Olson
Microscopic structure of tissues and organs.

71s Principles of Invertebrate Biology

5 cr; prereq Biol 2 or 50; Williams
Basic characteristics of invertebrates (exclusive of insects); emphasis on functional, adaptive, and evolutionary principles. Laboratory will include original research.

72su Natural History of Invertebrates

5 cr; prereq Biol 2 or 50; offered in Lake Itasca biology sessions
Taxonomic and ecological survey of local fauna, including life histories and habitats.

74s Introductory Entomology

5 cr; prereq Biol 2 or 50; Price
General morphology, life histories, habits, and classification of insects.

75w-76s Introductory Ornithology

3-3 cr; prereq Biol 2 or 50; Warner
Laboratory and field course in structure, classification, distribution, migration, habits, habitats, and identification of birds.

77w Mammalogy

4 cr; prereq 53 or #; Beer

Distinguishing characteristics and life histories of various mammal groups, particularly those represented in the state.

93f Introduction to Animal Parasitology

5 cr; prereq Biol 2 or 50; Wallace
Elementary course dealing with parasitic protozoa, worms, and arthropods, and their relation to diseases of man and animals.

96f Organic Evolution

3 cr; prereq Biol 2 or 50; Merrell
Survey of evidence for and causes of evolution.

98f,w,s Senior Seminar

1 cr; prereq sr, major in biological sciences, #
Discussion of biological topics of current interest.

99f,w,s Individual work in some special discipline

Cr ar; prereq Biol 2 or 50 and #

105f Comparative Animal Physiology

5 cr; prereq Biol 2 or 50, OrCh 62 or #; Schmid
Introduction to animal physiology, emphasizing functional aspects of organ systems from comparative viewpoint.

107f Protozoology

4 cr; prereq #; offered 1969-70 and alt yrs; Kerr
Introduction to taxonomy, morphology, physiology, development and genetics of free-living protozoa.

232 / Course Offerings and Major Requirements

109s General Endocrinology

3 cr; prereq AnSc 45 or VPP 45 or 6-8 cr in systemic or comparative physiology or §; Good, Sullivan, and others
Physiological effects of endocrine organs and their hormones.

111f Reproductive Physiology

3 cr, §AnSc 111, VPP 111; prereq 109 or VPP 109

Fundamentals of reproductive physiology including functions of reproductive organs, fertilization, estrous cycle and its endocrine control, reproductive efficiency and problems, and principles of artificial insemination.

112w Advanced General Physiology

3 cr; prereq Biol 110 or Zool 105 or equiv and §; Benolken, Schmid
Topics of current interest in physiology.

114f Sensory Physiology

3 cr; prereq Biol 110 or Zool 105; offered fall 1969 and alt yrs; Benolken
Survey of general properties of receptor organs with emphasis on visual, auditory, and mechano-receptor units.

115su Advanced Natural History of Invertebrates and Fishes

5 cr; prereq 15 cr in Zoology; offered in Lake Itasca biology session
Advanced taxonomic and ecological survey of local fauna, detailed and independent ecological study of several taxonomic groups.

116w Population Dynamics

2 cr; prereq Biol 80 or §...Math 44 recommended; offered 1969 and alt yrs; Williams

Seminars and lectures on verbal mathematical population theories; emphasis on relationship to laboratory and field data.

117w Theoretical Biology

3 cr; prereq §; offered winter 1969 and alt yrs; Williams

Role of semantic and mathematical theory in biology, including philosophical foundations and methodology. Detailed examples from various fields of biology.

120f Essentials of Vertebrate Development and Structure

5 cr, §VAna 120; for students whose interests require an understanding of functional anatomy; prereq Biol 2 or 50 or §; Fletcher

Principles and patterns of vertebrate anatomy, based on developmental approach.

121s Ichthyology

3 cr; prereq 15 cr incl Biol 2 or 50; Underhill

Taxonomy and habits of North American fishes, especially those of upper Mississippi drainage.

122f Vertebrate Biology

3 cr; prereq Biol 2 or 50 and §; Underhill

Survey of vertebrates. Their biology, taxonomy, and distribution.

123f Vertebrate Fauna Laboratory

2 cr; prereq 122 or equiv and §; Underhill

Survey of vertebrate groups native to Minnesota and neighboring states.

124w Vertebrate Anatomy Laboratory

3 cr; prereq 122 or equiv and §; Underhill

Comparative study of vertebrate systems.

125f Insect Morphology

5 cr; prereq 74 and §; Cook
Comparative studies of external and internal anatomy and histology of insects; phylogeny and function.

126w Embryology and Development of Insects

5 cr; prereq 125, OrCh 62, §; Brooks
Reproductive behavior, embryology, and postembryonic development of insects.

127s Insect Metabolism and Coordination

5 cr; prereq 126, §...BioC 106 or MdBc 101 recommended; Richards
Homeostasis, permeability, circulation, metabolic systems and products, properties of muscle and nerves, sensation, behavior.

130s Principles of Systematic Entomology

2 cr; prereq 15 cr in entomology or zoology and §; offered 1968-69 and alt yrs; Cook

Lectures on history of systematic entomology, species concept and higher categories, systematic procedures, and zoological nomenclature.

134w Avian Physiology

3 cr, §AnSc 134, VPP 134; prereq VPP 45 or 6 cr systemic physiology and §; McGinnis

Physiology of various species of wild and domestic birds.

135su Field Ornithology

5 cr; prereq 15 cr in zoology; offered in Lake Itasca biology sessions

Field and laboratory studies of ecology and life histories of birds in Itasca Park region.

138f,w,s Seminar: General Physiology and Biophysics

Cr ar

140w General and Comparative Endocrinology

3 cr; prereq Biol 50, OrCh 62 or §; offered 1968-69 and alt yrs; Herman
Survey of structure and function of invertebrate and vertebrate endocrine systems.

141s General and Comparative Endocrinology Laboratory

2 cr; limited to 10-15 students; prereq 140, §; offered spring 1969 and alt yrs; Herman

Individual laboratory investigations of selected problems of endocrinology. Topics arranged by consultation with instructor.

143su Animal Parasites

5 cr; prereq 15 cr including Biol 2 or 50; offered in Lake Itasca biology sessions

Parasites of local fauna with special reference to helminths.

144f Medical Entomology

3 cr; prereq 15 cr including 74 or equiv and §; Price

Principal arthropods noxious to man and animals. Emphasis on those that serve as vectors of pathogenic organisms of man and animals.

145w Parasitic Protozoa

3 cr; prereq 15 cr including Biol 2 or 50 and §; Wallace

Structure, life histories, and economic relations of protozoal parasites of man and animals; laboratory diagnosis.

146s Helminthology

3 cr; prereq 15 including Biol 2 or 50 and §; Wallace

Worm parasites of man and animals, their structure, life histories, and biological relationships.

148w Topics in Comparative Endocrinology

2 cr; prereq 109 or §; Herman

Discussion of selected areas of current research. Specific areas vary from year to year and will be announced in advance.

150 Behavioral Physiology

3 cr, §AnSc 150, VPP 150; prereq 6 cr in systemic physiology, Biol 110 or §; Phillips

Current concepts of neurological and neurochemical bases of animal behavior, includ-

ing reception, coding, transmission, and storage of information; levels of integration; central control of input and output; spontaneity, development, and learning.

155f, 156w, 157s Biophysics

3,3,3 cr; prereq 28 cr distributed between physics and biology, and §...physical chemistry and general physiology recommended; Schmitt

Theoretical and experimental aspects of biology that can be studied by quantitative physical means.

155: Tissue ultrastructure (biostatics) as revealed by hypermicroscopy, birefringence, X-ray, electron and radioactive means, and by colloidal and micellar phenomena.

156: Dynamics of biophysical systems: excitatory state, contraction, secretion, synthesis.

157: Integrative biophysical systems, stability of systems, transmission of information, sensory mechanism.

163f Mechanisms of Drug Action

3 cr; prereq systemic or comparative physiology; Stowe

Site and mechanisms of action of drugs, including structure-activity relationships.

164w Cytology

3 cr, §CB 118; prereq 51 or §

Principles and methods of experimentation; organization, function and ultrastructure of cells and cell components; cell growth and cell heredity.

165w Cytology Laboratory

2 cr; prereq §

Phase contrast microscopy, cytochemical methods, autoradiography; demonstration of optical equipment; individual projects.

171w Genetics and Speciation

3 cr; prereq 15 cr in biology including Biol 71; Merrell

Application of genetic principles to problems of speciation and evolution.

Section III

PREPROFESSIONAL CURRICULA IN THE COLLEGE OF LIBERAL ARTS

Many students enter the College of Liberal Arts to obtain the essential foundation for entrance into professional schools. Preprofessional work consists of courses particularly related to the professional field, together with courses of broadening general educational nature.

It is essential that the student study the preprofessional requirements for the field of his choice carefully if he is to continue his college career without loss of time. Detailed outlines of the curricula in the Arts College that are prerequisite for entrance into the various professional schools are listed on the following pages.

A. SCHOOL OF ARCHITECTURE AND LANDSCAPE ARCHITECTURE

Two undergraduate professional courses of study are offered through the School of Architecture: a 5-year program in architecture, and a 5-year program in landscape architecture.

In addition, a 6-year curriculum in architecture is offered jointly by the School of Architecture and the College of Liberal Arts.

1. Architecture

Five-Year Curriculum—Leads to the degree of bachelor of architecture, B.Arch. This curriculum requires a minimum of a year of college work preparatory to 4 years of study in the School of Architecture. It is intended for students who expect to practice architecture in any of its recognized phases. When supplemented by practical experience, it qualifies graduates for admission to architectural registration examinations according to laws of the various states.

Six-Year Curriculum—Represents a combination of the 4-year curriculum and the 5-year curriculum. It leads, after approximately 4 years of study, to the degree of bachelor of arts, B.A., with a major in architecture; and finally to the degree of bachelor of architecture, B.Arch., upon completion of additional work in the School of Architecture. For further details, see page 37.

Admission Procedures—Approval of the School of Architecture and of the dean of the Institute of Technology is required for enrollment as a candidate

for the B.Arch. degree, or as a candidate for the B.A. degree with a major in architecture. A prerequisite for such approval is:

Five-year curriculum—Completion of 1 yr of college work (see *Institute of Technology Bulletin*).

Six-year curriculum—Completion of 4 yrs of college work as required for the B.A. degree with a major in architecture in the College of Liberal Arts.

Upon completion of the prerequisite work, application shall be made to the School of Architecture for enrollment in the desired curriculum. Application forms (AR 110) may be obtained from the School of Architecture or from the Office of Admissions and Records. *These should be submitted to the Office of Admissions and Records not later than June 1 preceding the beginning of the academic year for which admission is being sought.* Admission to beginning architectural design (Arch 81) is permitted only in the fall quarter.

Approval of admission will be based on a consideration of (a) the student's scholastic standing in high school and on previous college work, (b) his maturity and experience, (c) his professional aptitude and objectives, and (d) the work space and instructional facilities of the School of Architecture. Prospective students are urged to consult advisers in the School of Architecture, 110 Architecture Building.

2. Landscape Architecture

Admission Procedures—Upon completion of the prerequisite requirements, application shall be made to officially enter the School of Architecture. This should be done by completing form AR 110 available at the School of Architecture or from the Office of Admissions and Records. *These should be submitted not later than June 1 of the year during which the student wishes to begin course work within the school.* Admission to beginning design (Arch 81) is permitted only in the fall quarter. The prerequisite requirements are met by completing the first year of the 5-year degree program.

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 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.

Five-Year Curriculum—The program is organized to provide a highly concentrated approach to the professional degree—bachelor of landscape architecture, B.L.A. Its science and technical requirements parallel that of the 6-year program but it allows only a minimum of credits for liberal arts courses and technical electives. The initial year of study is devoted to general University courses which serve as preparation to the remaining 4 years of professional training within the curriculum. This training supplemented with practical experience qualifies the student for professional practice.

In addition to the required courses, the student must satisfy the basic general curricular requirements as specified for all students in IT as a part of non-technical group requirements. The humanities, psychology, and sociology sequences are strongly recommended as courses to satisfy this requirement. In

addition, a basic course in speech technique is suggested as a part of the courses taken as nontechnical electives. It is also strongly recommended that a student take a year of high school chemistry before applying for entry to the Institute of Technology. A basic knowledge of chemistry is vital for much of the advanced work in the program.

Before enrolling in LA 123 each student is required to present evidence of a minimum of 800 hours of practical experience outside of classwork. At least 400 of these hours must be spent in landscape construction or in a landscape nursery. At least an additional 400 hours must be spent in an office of a professional landscape architect.

In addition to the required courses, sufficient approved electives must be taken to complete a total of at least 253 credits.

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. Students with a grade point average of 2.50 or above may take advantage of the opportunity to carry out a research problem during 1 or more quarters of the senior year, under the guidance of a research adviser.

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 enter the College of Biological Sciences at the beginning of their junior year. Specific requirements are:

1. Equivalent of 75 qtr cr with at least a 2.00 GPA.
2. Completion of 30 cr in mathematics, physical, and/or biological sciences with at least a 2.50 GPA in biological science courses.

A typical program for the freshman and sophomore years is as follows:

<i>Fall</i>		<i>Winter</i>		<i>Spring</i>	
Engl A or 2B	4-5	Engl B or 2B	4-5	Engl C or 3B	4-5
Math 15	5	Math 42	5	Math 43	5
GeCh 4	5	GeCh 5	5	GeCh 6	4
Electives	0-3	Electives	0-3	Biol 49	3
	<hr/> 14-18		<hr/> 14-18		<hr/> 16-17
Math 44	5	OrCh 62	5	Biol 60	4
OrCh 61	5	Biol 51	5	Biol 52	4
Biol 50	5	Ger 1	5	Ger 2	5
Electives	0-3	Electives	0-3	Electives	3
	<hr/> 15-18		<hr/> 15-18		<hr/> 16

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. 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 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 cr (satisfaction of Arts College freshman English requirement)

Engl 1-2-3 (9)

Comm 1-2-3—Communication (12)

Exemption from requirement

- b. Mathematics—10 or more cr

Math 10A (or Math 15)—College Algebra

Math 40A—Calculus

(Math Z, Preparatory Mathematics, may be prerequisite for Math 10A or 15; Math T may be a prerequisite for Math 15. Students who plan to take course work in mathematics beyond the level of elementary calculus should take Math 42 and 43 rather than Math 40A.)

2. Physical and Biological Sciences—9 cr

In a single natural science to be selected from botany, chemistry, geology, physics, zoology, or NSci 4-5-6† (Physical World). All courses must include laboratory. This requirement can be met only with the following courses (or higher numbered courses):

Biol 1-2†—General Biology (10)

GeCh 4-5†—General Principles of Chemistry (10)

Phys 1-2-3 and 1A-2A-3A—Introduction to Physical Science (12)

NSci 4-5†-6—Physical World (12)

Geo 1-2—Physical Geology, Historical Geology (9)

3. Man and Society—21 cr

Econ 1-2† (6)

Psy 1-2† (6)

Soc 1 (3)

Six additional credits from the following departments:

Anthropology, geography, history, political science, psychology, and sociology (except Soc 45, Social Statistics, which is not acceptable in fulfillment of this requirement).

4. Artistic Expression—9 cr

Students must fulfill the University requirement of 9 cr 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, journalism, speech and theatre arts, anthropology, architecture, art, and music

Not all courses in these departments, colleges, and schools, however, can be used. Students should see a special publication prepared for use in selecting courses to meet this requirement. This publication is available in the office of the dean, School of Business Administration, and the College of Liberal Arts Lower Division offices.

5. Business Courses—9 cr

Acct 24-25-26—Principles of Accounting (9)

6. In addition to requirements listed in areas 1, 2, and 4 above, students must take an additional 5 cr distributed in any way over these three areas (1, 2, and 4). Additional work taken in area 2 need not be with laboratory. For acceptable courses to meet this requirement see the publication referred to under group 4, above.

7. Students planning to enter the B.S.B. accounting program are required to complete Comp 27, Advanced Writing (3 cr) in addition to the above.

8. Electives to complete the approximately 90 cr 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 hrs) from an accredited liberal arts college is preferred, but at least 3 years of liberal arts study are recommended. 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 qtr cr. If basic English course is less than 12 qtr cr, additional credits may be completed in composition, literature, etymology, or speech to satisfy minimum requirement of 12 qtr cr.
2. *General biology or general zoology*—10 qtr cr
3. *Physics*—12 qtr cr
4. *General principles of chemistry*—12 qtr cr
5. *Organic chemistry*—8 qtr cr. Course must contain both aliphatic and aromatic series.

Elective courses should be selected to give the student as broad an education as possible within the time limits available. While mathematics and psychology are not required, they are preferred electives and highly recommended. The minimum desired background in mathematics includes college algebra. At least 20 credits should be taken in such courses as anthropology, economics, history, humanities, languages, sociology, and speech. Additional credits are recommended in analytical chemistry, comparative anatomy, genetics, basic drawing, and a course in etymology of technical terms used in science.

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 of Dentistry, or the special pre-dentistry 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 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 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

General—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.

Program Leading to Degree of Graduate Dental Hygienist and Bachelor of Arts

Students may enter the 2-year dental hygiene program in the School of Dentistry either as freshmen or upon transfer from some other college. When they have completed this program as specified in the *School of Dentistry Bulletin* with a C average, in courses acceptable for transfer to the Arts College, they may enter the Arts College.

To receive the bachelor of arts degree, in addition to the dental hygiene degree (G.D.H.), students must fulfill the distribution requirements listed on pages 9 and ff of this bulletin and the graduation requirements listed on pages 7 to 8 (see also p. 254). Liberal arts courses taken while in the School of Dentistry or elsewhere may be applied toward these graduation requirements. Usually 3 additional years of work are required, depending on the amount of other work taken here or elsewhere.

For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, etc.) see Section II of this bulletin.

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.

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

Industrial Education

Business and Distributive Education

Music Education

Requirements for Transfer to College of Education

1. Students planning to transfer to these majors are expected to complete 45 qtr cr 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 appropriate curriculum described in the *College of Education Bulletin*.
2. Art education students should include in their freshman year a minimum of 15 cr 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 music theory (9 cr), individual applied music on major instrument (6 cr), and University chorus, band, or orchestra (3 cr) 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).
2. Student makes application at "Transfer" window (room 6) in 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 Transfer to Academic Major in College of Education (speech pathology major see *College of Education Bulletin*)

1. 90 qtr cr with 2.00 (C) GPA.
2. 15 qtr cr in a major field with a 2.50 (C+) GPA.
3. 10 qtr cr 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 cr in the major.)
4. Freshman English: Comm 1-2-3 or Engl 1-2-3 or 10H-11H-12H or exemption.
5. 48 cr from following categories as indicated. Courses used to meet first and second requirements above may also be included in these 48 cr:
 - 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 1-2†. In addition, 12 cr from at least two of following fields: history, geography, political science, sociology, anthropology and economics; or SSci 1-2-3 plus an additional 3-cr course in a social science.
 - d. *Artistic Expression*. 9 cr from literature, humanities, art, and music. Freshman English may not be included.
6. PubH 5 or 50 (3 cr) or equiv.
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 see Section II of this bulletin and specific requirements in the *College of Education Bulletin* for courses to include a major or minor. If the student properly identifies his major 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 Transfer to Elementary Education Curriculum

- | | |
|--|--|
| <p>1. 90 qtr cr with at least 2.00 (C) GPA to be considered for transfer</p> <p>2. Freshman English
Comm 1-2-3 or Engl 1-2-3 or 10H-11H-12H or exemption</p> <p>3. NSci 4-5† and Biol 1-2†
or NSci 1-2†-3
or other patterns of course work of minimum of 15 cr spread over physical and biological sciences</p> <p>4. Social Sciences
Geog 1 or 4
Hist 23, 24
Soc 1 and 3, or SSci 1-2-3</p> <p>5. Mathematics
Math 5A and 5B</p> <p>6. Music, Art, and Speech
Mus 4 (or exemption)
ArEd 10C</p> | <p>Plus minimum of 4 elective cr from among following. Courses to meet required minimum of 9 cr in area of artistic expression:</p> <p>Engl A-B-C (4 cr)
or Comm 1-2-3 (3 cr)
or Th 11, 131 or 132
or Arth 1 or 2 or 3 or 4 or 5 or 47
or Humanities
or Literature</p> <p>7. Psychology
Psy 1-2†</p> <p>8. Health and Physical Education
PubH 5 or 50
Nonprofessional physical education courses (3 cr)</p> <p>9. Electives toward an academic minor
Possible minors (30 cr) are listed under Elementary Education section in the <i>College of Education Bulletin</i></p> |
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Application Procedures

1. Apply for admission to College of Education at "Transfer" window (room 6) in Morrill Hall *early* in third quarter of sophomore year. 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.

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 consists 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 recognized prerequisite to this degree is a 4-year degree with a major field of concentration. Inquire at the Library School office about preprofessional planning during the junior and senior years.

H. COLLEGE OF MEDICAL SCIENCES

The principal curricula offered in the College of Medical Sciences are the following: medicine, nursing, medical technology, physical therapy, and occupational therapy. Each affords training for a different profession, and the requirements vary accordingly.

1. Curriculum in Medicine

There are two 7-year programs of study that lead to the degree of doctor of medicine. Both require 3 full years of college work (135 cr) that must include the courses prescribed for admission to the Medical School. In the first program the student may freely choose elective subjects to make the total of

135 credits. He will receive the degree of bachelor of science after he completes 2 years of work in the Medical School. In the second of the two programs, the student must meet the requirements for admission to the Upper Division of the Arts College, which he should enter after 2 years of residence in the Lower Division. His program for the third year must be submitted for approval to a premedical adviser through the Upper Division office, 225 Johnston Hall. He will receive the degree of bachelor of arts after he completes satisfactorily 1 year of work in the Medical School.

Students who wish to earn the B.A. degree before entering Medical School must include all required premedical subjects listed here and all other requirements for the degree prescribed in Sections I and II of this bulletin.

Program Plans—Because of the large number of applicants to the Medical School and the consequent high percentage of students failing to be admitted although they may meet the minimum entrance requirements, all premedical students are urgently advised to plan their 3 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 degree in some other college without undue loss of time. They should consider this possibility from the first quarter of their registration in the University.

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 in order to achieve admission.

The premedical work, for which the student is registered in the Arts College, must include as a minimum the following required courses or their equivalent as approved by the Admissions Committee of the Medical School.

REQUIRED COURSES

The Admissions Committee of the Medical School will accept courses or course sequences which the offering department determines is equivalent to those courses listed below.

English: Engl 1-2-3 (9 cr); Comp 1-2-3—Freshman Composition (12 cr); or Comm 1-2-3—Communication (12 cr); or exemption from requirement

Biology: Biol 1-2†—General Biology (10 cr)

Chemistry: GeCh 4-5†,6 (or equiv)—General Chemistry (14 cr); AnCh 57A-B—Quantitative Analysis (5 cr); OrCh 61-62—Elementary Organic Chemistry (10 cr)

Mathematics: (as a prerequisite for physics): Higher algebra and trigonometry, taken in high school or college (for credits see Section II, Mathematics); Math 10—College Algebra and Analytic Geometry (5 cr); and Math 40—Introduction to Calculus (5 cr). (Math 15—College Algebra [5a] and Math 42—Analytic Geometry and Calculus I [5a] may be taken instead of Math 10-40 and are encouraged. Students electing Math 42 should plan on Math 43 and, preferably, 44.)

Physics: Phys 4-5-6—General Physics (15 cr; prereq Math 40 or †40 or comparable mathematics); (students taking their physics course in some other institution must take one

with a similar prerequisite, i.e., a physics course for which trigonometry and college algebra are prerequisites).

A suggested schedule of the required courses in a 3-year premedical program follows:

First Year—GeCh 4-5†,6 (14 cr); Biol 1-2† (10 cr); Engl 1-2-3 (9 cr) or Comp 1-2-3 (12 cr) or Comm 1-2-3 (12 cr); Math Z, T, 10 taken according to placement tests; Math 40 if possible (or Math 15 and 42).

Second Year—OrCh 61-62 and AnCh 57A and B (15 cr); Phys 4-5-6 (15 cr); social science (12 cr); Math 40 if not taken during the freshman year, or additional mathematics; electives selected in conference with an adviser.

Third Year—Humanities (9 cr); electives chosen in conference with an adviser.

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 College of Medical Sciences, 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. Exceptions will be made for the student whose special interest and aptitude lead him toward a science major. 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.

The Medical School at the University of Minnesota no longer includes in its minimum admission requirements courses in genetics, psychology, and physical chemistry. All of these subjects, however, are strongly recommended as pertinent basic science fields for inclusion in the college program of a 3- or 4-year premedical student at the University of Minnesota. For a strong preparation in biological sciences relevant to Medical School subjects, a selection of additional courses in biology is usually appropriate.

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 7-8-9 in lieu of Phys 4-5-6. Similarly, PCh 101, 102, 103, OrCh 63, 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 March 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 October 15. Two official college transcripts must accompany the application.

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 2 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 Bulletin of the *Minnesota Daily*.

A report of physical examination and current health status is also required and is to be filed with the completed application. This health report is to be filled in by the Health Service of the student's college or university or by his personal physician.

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 considered individually by the Admissions Committee upon petition to the dean of the College of Medical Sciences.

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 of the College of Medical Sciences, 1305 Mayo Memorial, and in the office of that college's director of Special Educational Services, 126 Millard Hall. 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 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 in Medical School. The first 2 years of college work may be taken in any accredited college, but the third year (45 cr) must be taken in the Upper Division of the Arts College of this University.

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 the 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 cr) 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 an 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 College of Medical Sciences. 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 College of Medical Sciences, 1305 Mayo Memorial, or the director of Special Educational Services, 126 Millard Hall, and a faculty adviser in one of the basic medical science departments.

2. Curriculum in 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 21 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*.

3. Curriculum in Medical Technology

The program in medical technology is a 4-year course given in the Arts College and in the College of Medical Sciences. 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 (that is, for registration in the College of Medical Sciences).

The following courses or their equivalents are prerequisites for admission to the junior year:

(Credits shown in parentheses)

Engl 1-2-3 (9) or Comm 1-2-3 (12) or exemption from requirement	Math 10—College Algebra and Analytic Geometry (5)
GeCh 4-5†,6—General Principles of Chemistry (14)	Phys 1-2-3—Introduction to Physical Science (9)
AnCh 57A-B—Quantitative Analysis (5)	MicB 53—General Microbiology (5)
OrCh 61-62—Elementary Organic Chemistry (10)	MedT 10—Orientation in Medical Technology (1)
Biol 1-2†—General Biology (10)	MedT 30-31-32—Case Presentations (3)
Anat 4—Elementary Human Anatomy (5)	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, C-205 Mayo Memorial Building (telephone 339-7311, extension 2601).

Advisers—All students in this course should consult advisers in the Medical Technology office, C-205 Mayo Memorial Building. Registration each quarter must be reviewed by one of these advisers.

4. Curriculum in Mortuary Science

The Department of Mortuary Science (a division of the College of Medical Sciences) 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 be certified as having attended and satisfactorily completed 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:

(credits shown in parentheses)

1. Communications, Language, Symbolic Systems (18)

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| a. Freshman composition—Engl 1-2-3 (9) | c. Electives—foreign language, philosophy, mathematics, statistics, journalism |
| b. Speech—Spch 5 (5) | |

2. Physical and Biological Sciences (27)

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|--|--|
| a. General biology—Biol 1-2† (10) | d. Microbiology—MicB 1 (4) |
| b. Inorganic chemistry—Chem 4 (5) or GC 7C (5) | e. Public health—PubH 3-4 (4) |
| c. Human anatomy—Anat 3 (4) | f. Electives—Physics, physiology, astronomy, geology |

3. Man and Society (20-21)

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|---|---|
| a. Psychology—Psy 1-2† (6) | c. Sociology, social science, or anthropology (9) |
| b. Accounting—Acct 24-25 (6) or GC 16 (5) | d. Electives—History, political science, economics, geography |

4. Artistic Expression (9)

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|---|---|
| a. Scientific, medical terminology—Clas 48T (3) | b. Electives—art, music, humanities, theatre arts, literature |
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Note—Students who plan to license in a state other than Minnesota should request information concerning specific requirements of that state.

5. Course in 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 College of Medical Sciences in fall quarter of 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 College of Medical Sciences (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, 860 Mayo Memorial Building.

Advisers—All prospective physical therapy majors should consult advisers in the Physical Therapy office (telephone 339-7311, extension 2715). Registration must be approved by a physical therapy adviser each quarter. For more detailed information see the *Occupational and Physical Therapy Bulletin*.

6. Course in Occupational Therapy

The Course in Occupational Therapy is a program of 4 academic years plus 1 quarter, which is given in the Arts College and the College of Medical Sciences. 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 eligible for admission to the Course in Occupational Therapy in the College of Medical Sciences (Department of Physical Medicine and Rehabilitation). During the senior year, 9 months are spent in clinical training 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*.

I. 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:

GeCh 4-5†—General Principles of Chemistry (10)
 GeCh 6—Principles of Solution Chemistry (4)
 Math 10—College Algebra and Analytic Geometry (5)

Math T—Trigonometry (3)
 Math 40—Introduction to Calculus (5)
 Comm 1-2-3—Communication (12)
 Electives (3 cr)

Students enrolled in the Arts College for the prepharmacy year usually take, in addition to the above courses, Phm 1 (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 1-2†—General Biology (10)	OrCh 61, 62, 63—Elementary Organic Chemistry (13)
Phys 1-2-3—Introductory Physics (9)	Econ 1-2†—Principles of Economics (6)
Phys 1A-2A-3A—Introductory Physics Laboratory (3)	Electives (not less than 6)

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.

J. PUBLIC ADMINISTRATION

Professional study in the Public Administration Center, which is a part of the Arts College, is at the graduate level and is intended for majors in a wide range of disciplines. Courses of study are planned according to the previous training and career objectives of each student and normally may be completed during one academic year. For further information see the *Graduate School Bulletin* and the special bulletin on *Graduate Education for Public Administration*.

K. 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 Sequence B of the Department of Sociology which is described in Section II, Sociology, of this bulletin. Admission is not limited, however, to those who complete the recommended Sequence B. 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 enter the college before summer 1969. Other candidates for the B.A. degree follow the NEW requirements on page 7. Any student in doubt about his eligibility under OLD requirements should ask in his college office.

● 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.
7. **English Proficiency Test**—Meet the Upper Division English proficiency requirement.

● Lower Division Distribution Requirements for B.A. Degree

A. Freshman English

Engl A-B-C (Freshman Composition and Literature, 15 cr, composition portion, 9 cr) or Comp 1-2-3, 12 cr or Comm 1-2-3 (Communication, 12 cr) or exemption from requirement. All students are required to have an English placement classification (see page 14) before registration for one of these courses.

Old Lower Division Requirements for B.A. Degree / 255

B. Foreign Language. From 0 to 15 credits according to the following schedule:

<i>Amount Presented from High School</i>	<i>Additional Amount Required in College</i>
None	15 credits in one language
1 year	(a) 10 college credits at a higher level in same language, <i>or</i> (b) 15 college credits in a different language
2 years in one language	(a) 5 college credits at a higher level in same language, <i>or</i> (b) 10 college credits in a different language
3 or more years in one language	No college requirement if high school work is validated by the appropriate college department
2 years in each of two languages	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.

A student may include foreign language in his freshman program only if (a) he has studied foreign language in high school, *or* (b) he is in the upper half of the freshman class, *or* (c) he is given special permission by the Scholastic Committee.

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
2. Economics and business administration
3. Geography
4. History
5. Political science
6. Psychology
7. Sociology
8. Social science (interdisciplinary programs)

(*Note*—Acct 24-25-26, OMgt 32, 33, 34, 36, 37-38-39, 43, 79A-B, and Econ 40 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

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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.

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| 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) |

F. Health

PubH 3 (Personal Health, 2 cr) or PubH 50 (Personal and Community Health, 3 cr) or equivalent.

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.

5. Students transferring into Upper Division from another college who can demonstrate to the Scholastic Committee special hardship in satisfying requirement B as stated may use the 50-51-52 sequence to meet this requirement (credits so used may not be used toward a minor or the 15 credits outside the major and minor). Any student may meet the 10-credit second language requirement with the 50-51-52 sequence.

● 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 sequence listed below:

1. *Departmental Major and Minor Sequence*

- a. A major (minimum of 27 UD cr 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 cr) or two half-minors (9 cr 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 26).

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 cr) 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 254.

COLLEGE OFFICES

Lower Division

Central Office, 214 Johnston Hall
Freshman Division Offices, 201, 214 Johnston Hall, 16 Walter Library,
208 TNM
Sophomore Division Office, 220 Johnston Hall

Upper Division

Central Office, 223 Johnston Hall
Humanities and Fine Arts, 206 Folwell Hall
Sciences and Mathematics, 223 Johnston Hall
Social Sciences, 214 Social Sciences Building

Honors Division, 115 Johnston Hall

Placement Office, 125 Johnston Hall

Class Reservations Office, 205 Johnston Hall

The Committee on Student Scholastic Standing is represented in each of the division offices.

DIRECTORY OF DEPARTMENTS/FACULTY AND MAJOR ADVISERS

COLLEGE OF LIBERAL ARTS

The following list includes only names of those who will be regular staff members (instructor or above) beginning fall of 1968.

Names of major advisers in Arts College appear in italics.

Example: *Anwar Chejne*

* Majors leading to the B.A. degree in the College of Liberal Arts.

† Majors leading to the B.F.A. degree in the College of Liberal Arts.

Note—Units which do not have * or † following the name do not offer major programs leading to the B.A. degree; credits received for courses taken in their curricula, however, may be applied toward the B.A. degree. Since there are limits in many cases on the total number of credits that may be accepted, the student should see each listing in Section II.

Note also—Because departments change physical location from time to time, students are advised to check the latest directory, or the *Class Schedule*.

Aerospace Studies

Head: Lt. Col. James Suttie
5a Armory Bldg.

American Studies*

Chairman: *Mary C. Turpie*
10 Vincent Hall

Associate Chairman: Robert F. Berkhofer, Jr.
678 Social Sciences Bldg. (WB)

The undergraduate major in American Studies has such a variety of courses open to him that it is impracticable to list the many instructors offering them. For a list of persons who are closely associated with this program, see American Studies in the *Graduate School Bulletin*.

Anatomy

Head: Arnold Lazarow
262 Jackson Hall

Anthropology*

Chairman: E. Adamson Hoebel
200 Ford Hall

Richard Adams
Donald Bender
Luther Gerlach
Esther Hermitte
Elden Johnson
Robert Kiste
Frank Miller
Rupert Murrill
Eugene Ogan
Perti Pello
William Rowe
Harvey Sarles
Robert Spencer

Architecture* and Landscape Architecture*/Institute of Technology

Head: Ralph Rapson
110 Architecture Bldg.

Bruce Abrahamson
Herbert Baldwin
David Bennett
Joseph Blair
Robert Cerny
Roger Clemence
John Cuninghame
Robert Diedrich
Stanley Fishman
Carl Graffunder
Dennis Grebner
Alonzo Hauser
Thomas Hodne
Robert Hysell
Hosni Iskander
Kay Lockhart
Roger Martin
Valerius Michelson
Richard Morrill
John Myers
Leonard Parker
Hugh Peacock
John Rauma
Robert Schimke
James Stageberg
Milo Thompson
Duane Thorbeck
Walter Vivrett
George Winterowd

Art History*

Chairman: Carl D. Sheppard, Jr.
108 Jones Hall

Norman Canedy
Sheila McNally
Marion Nelson

260 / Old Requirements; Faculty

Robert Poor
Sidney Simon
Hylton Thomas
Donald Torbert
Dimitri Tselos
Melvin Waldfoegel

Art, Studio Arts*†

Chairman: *Malcolm H. Myers*
208 Arts Bldg. (WB)

Karl E. Bethke
Peter Busa
Stephen J. Daly
Allen Downs
Thomas Egerman
Lynn A. Gray
F. W. Hayman-Chaffey
Curtis C. Hoard
Alan E. Kraning
Jerome Liebling
Warren MacKenzie
Katherine Nash
Vincent F. Pisani
Zigmunds Priede
David F. Routon
Herman Rowan
Mario Volpe
Robert Wilcox

Astronomy/see Physics & Astronomy

Biochemistry/see Biological Sciences

Biological Sciences*/College of Biological Sciences

Dean: *Richard S. Caldecott*
123 Snyder Hall (StP)
Assistant Dean: *Norman Kerr*
307 Zoology Bldg.

BIOCHEMISTRY

Head: *L. M. Henderson*
114 Gortner Lab. (StP)

BIOLOGY

Assistant Dean: *Norman Kerr*
307 Zoology Bldg.

BOTANY

Head: *Eville Gorham*
8 Botany Bldg.

ECOLOGY AND BEHAVIORAL BIOLOGY

Head: *Alan J. Brook*
339 Bell Museum of Natural History

GENETICS AND CELLULAR BIOLOGY

Head: *Ralph E. Comstock*
227 Snyder Hall (StP)

ZOOLOGY

Head: *Magnus Olson*
108 Zoology Bldg.

Ernst C. Abbe
John S. Anderson
V. Elving Anderson
Richard E. Barthelemy
James R. Beer
Walter J. Breckenridge
David R. Briggs
Robert C. Bright
Alan J. Brook
Peter J. Chapman
Huai-Chang Chiang
Ralph E. Comstock
Edwin F. Cook
William P. Cunningham
Edward J. Cushing
Stanley Dagley
Frank Enfield
Albert W. Erickson
Rouse S. Farnham
Thomas F. Fletcher
Albert W. Frenkel
John E. Gander
Robert L. Glass
Archie L. Good
Eville Gorham
John W. Hall
H. Orin Halvorson
Lavell M. Henderson
Robert K. Herman
William S. Herman
Vivian Hiatt
Alan B. Hooper
Charles W. Huver
Robert Jenness
Norman S. Kerr
Samuel Kirkwood
Dolph Klein
Donald B. Lawrence
Irvin E. Liener
Albert J. Linck
Rex E. Lovrien
Marland L. Madson
William H. Marshall
Frank D. McKinney
David J. Merrell
Thomas Morley
Magnus Olson
Gerald B. Ownbey
Douglas Pratt
Roger Price
Sheldon C. Reed
Robert P. Rhea
A. Glenn Richards

Murray D. Rosenberg
William D. Schmid
Otto H. Schmitt
Max O. Schultze
Joseph Shapiro
Donald B. Siniff
D. Peter Snustad
Leon A. Snyder
Thomas K. Soulen
Nelson T. Spratt
David A. Stetler
Clarence M. Stowe
Theodore W. Sudia
John A. Sullivan
John R. Tester
James C. Underhill
Houston Wade
Franklin G. Wallace
Dwain W. Warner
Huber Warner
Frederick M. Williams
Val Woodward
Herbert E. Wright

Advisers in College of Education

John E. Gander
John W. Hall
Robert Jenness
D. Peter Snustad
Thomas K. Soulen
Frederick M. Williams

Biology/see Biological Sciences

Biometry*/College of Medical Sciences

Head: *Byron W. Brown*
1226 Mayo Memorial Bldg.

Glenn E. Bartsch
Jacob E. Bearman
Richard B. McHugh

Botany/see Biological Sciences

**Business Administration/
School of Business
Administration**

Associate Dean: Nicholas Glaskowsky
225 Business Administration Bldg.

Chemistry*/Institute of Technology

Acting Chairman: Wayland E. Noland
139 Chemistry Bldg.

Child Psychology*/College of Education

Director: Harold W. Stevenson
136 Child Development Bldg.

Ann J. Carlson
William R. Charlesworth
John H. Flavell
Joseph Glick
Willard W. Hartup
John P. Hill
Carl P. Malmquist
Susan McWilliam
Shirley G. Moore
Herbert L. Pick, Jr.
Merrill F. Roff
Alan Sroufe
Mildred C. Templin
Robert C. Wirt
Albert Yonas

Classics*

Chairman: *Robert P. Sonkowsky*
309 Folwell Hall

Gerald M. Erickson
John Ferguson
A. Thomas Kraabel
W. Thomas MacCary
William A. McDonald
R. Joseph Schork
Goran Sörbom
Donald C. Swanson

Adviser in College of Education

Margaret M. Forbes

Communication Program

Program Director: Daniel V. Bryan
212 Temporary North of Mines Bldg.

Comparative Literature

Chairman: Gerhard Weiss
205½ Folwell Hall

East and South Asian Languages*

Chairman: Edward M. Copeland, Jr.
321 Folwell Hall

Usharbudh Arya
Ya-ku Chang
Vasant S. R. Khokle
Chun-Jo Liu
Owen B. Loveless
Richard B. Mather
Amy T. Matsumoto
Hide Shohara
Paul W. Staneslow
Reiko Tsukimura
Rachel R. Van Meter
Stephen S. Wang

Economics*

Chairman: N. J. Simler
1035 Business Administration Bldg. (WB)

Francis M. Boddy
O. H. Brownlee
John A. Buttrick
John S. Chipman
Edward Coen
Edward Foster
George D. Green
Peter Gregory
John C. Hause
Walter W. Heller
James M. Henderson
Clifford Hildreth
Ralph Hofmeister
Leonid Hurwicz
John H. Kareken
Anne O. Krueger
E. Scott Maynes
Herbert Mohring
Thomas J. Muench
George L. Perry
Marcel K. Richter
Harlan M. Smith
Hugo Sonnenschein
Morris F. D. Teubal
John G. Turnbull
Neil Wallace

Adviser in College of Education

Harlan M. Smith

Educational Psychology/ College of Education English*

Chairman: John W. Clark
127 Vincent Hall

Harold B. Allen
Eberhard Alsen

Kent Bales
Bernard Bowron
Thomas Clayton
Lonnie J. Durham
Peter Firchow
Charles H. Foster
Edward M. Griffin
Clifford Haga
David B. Haley
J. Dennis Hurrell
Gerhard J. Joseph
Calvin Kendall
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Andrew MacLeish
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John McNally
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Franz Montgomery
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Martin Roth
James L. Scoggins
Martin Steinmann
Margery W. Stricker
Mary C. Turpie
Leonard Unger
George Wright
Theodore Zorn

Adviser in College of Education

Rodger Kemp

English as a Second Language (Linguistics)

Director: Betty Robinette
140 Office Bldg.

Family Study Center

Director: Reuben Hill
1014 Social Sciences Bldg. (WB)

Joan Aldous
Richard Hey
David Holland
Elnora Huyck
John Kokosh
Helen Ludwig
Gerhard Neubeck
Katherine Randolph
David Torbett

Foreign Study/SPAN

For information contact T. G. Stavrou,
History Department, 133 Clay School

Genetics/see Biological Sciences

Geography*

Chairman: *John W. Webb*
414 Social Sciences Bldg. (WB)

Russell B. Adams
Ward J. Barrett
John R. Borchert
Jan O. M. Broek
Dwight A. Brown
John F. Hart
Mei-Ling Hsu
Fred E. Lukermann
Eugene Cotton Mather
Philip W. Porter
John G. Rice
Joseph E. Schwartzberg
Richard Skaggs
John A. Wolter

Advisers in College of Education

Russell B. Adams
Ward J. Barrett

Geology and Geophysics* / Institute of Technology

Chairman: *Tibor Zoltai*
108 Pillsbury Hall

Richard L. Bartels
Robert C. Bright
Campbell Craddock
Donald L. Graf
James A. Grant
Henry T. Hall
Roger LeB. Hooke
Charles L. Matsch
Harold M. Mooney
Glenn B. Morey
V. Rama Murthy
Istavros S. Papadopoulos
Walter E. Parham
Eugene C. Perry
William C. Phinney
George R. Rapp, Jr.
Joseph Shapiro
Paul K. Sims
Robert E. Sloan
Frederick M. Suain
William C. Walton
Paul W. Weiblen
Herbert E. Wright, Jr.

Adviser in College of Education

George R. Rapp, Jr.

German*

Chairman: *Edwin F. Menze*
219 Folwell Hall

Evelyn Coleman
Erhard Friedrichsmeyer
Glenn Hamm
Frank Hirschbach
Vera Hoogen
Julia Penn
Herman Ramras
Anne Russell
Wolfgang Taraba
E. Theodore Voss
Gerhard Weiss
Cecil Wood
Frank Wood

Advisers in College of Education

Edwin F. Menze
Cecil Wood

History*

Chairman: *Robert S. Hoyt*
614 Social Sciences Bldg. (WB)
Assistant Chairman: *Josef L. Altholz*
614B Social Sciences Bldg. (WB)

Bernard S. Bachrach
Paul W. Bamford
Robert F. Berkhofer
Hyman Berman
Kinley J. Brauer
Clarke A. Chambers
Harold C. Deutsch
Edward L. Farmer
George D. Green
John R. Howe
Alfred H. Jones
Tom B. Jones
Philip D. Jordan
Thomas Kelly
David O. Kieft
David Kopf
Erle V. Leichty
Rodney C. Loehr
Byron K. Marshall
John K. Munholland
Paul L. Murphy
David W. Noble
Thomas S. Noonan
Otto P. Pflanze
Richard L. Rudolph
Stuart B. Schwartz
Timothy L. Smith
Allan H. Spear
Theofanis G. Stavrou
Romeyn Taylor
John A. Thayer
James D. Tracy
Rudolph J. Vecoli
David H. Willson
William E. Wright

Advisers in College of Education

George D. Green
Thomas S. Noonan
Timothy L. Smith

**Home Economics/College of
Agriculture, Forestry, and
Home Economics**

Director: Louise A. Stedman
200 McNeil Hall (StP)
Associate Director: Roxana R. Ford
212A McNeil Hall (StP)
Barbara Conklin

Humanities Program*

Program Director: Robert J. Ames
286 Ford Hall

**Interdisciplinary Programs/
see individual program
offices**

**International Relations and
Area Studies***

Director: Burton M. Sapin
1246 Social Sciences Bldg. (WB)
Assistant Director: Robert E. Riggs
1246 Social Sciences Bldg. (WB)

In addition, students should see the special bulletin, *Programs in International Relations and Area Studies*, or inquire in the Center for International Relations and Area Studies, 1246 Social Sciences Building.

**Journalism and Mass
Communication***

Director: *Robert L. Jones*
111 Murphy Hall

A. Stuart Bay
Walter Brovald
Roy E. Carter, Jr.
Mitchell V. Charnley
Edwin Emery
J. Edward Gerald
Donald M. Gillmor
George S. Hage
Virginia A. Harris
F. Gerald Kline
Robert Lindsay
Raymond B. Nixon

Jack N. Peterman
R. Smith Schuneman
John C. Sim
Phillip J. Tichenor
Harold W. Wilson

Adviser in College of Education

John C. Sim

**Landscape Architecture/see
Architecture**

Library School

Director: *D. K. Berninghausen*
3 Walter Library

Elmo Brekhus
Nancy J. Freeman
Edith V. Kromer
Joan H. Leigh
Errett W. McDiarmid
Lowell E. Olson
Marie Samanisky
Raymond Shove
Wesley Simonton
Patricia Turner

Linguistics*

Chairman: *Walter Lehn*
142 Office Bldg.

Larry Hutchinson
Howard Law
Betty Robinette (English as 2nd Language)

**Mathematics*/Institute of
Technology**

Head: Hans F. Weinberger
207 Main Engineering Bldg.

Associate Chairman: David A. Storvick
207C Main Engineering Bldg.

Director of Undergraduate Studies: *Fulton Koehler*
12 Main Engineering Bldg.

**Medical Technology/see
Preprofessional Curricula**

**Microbiology*/College of
Medical Sciences**

Head: Dennis W. Watson
1060 Mayo Memorial Bldg.

Middle Eastern Languages*

Chairman: *Anwar Chejne*
157 Temporary South of Folwell

George Koury
Jonathan S. Paradise
Henry Toledano
Fawwaz Tuqan

Military Science

Head: Col. William D. Beard
108 Armory Bldg.

Music* †

Chairman: Roy A. Schuessler
107 Scott Hall

Rhadames Angelucci
Dominick Argento
Martin Beckerman
Frank Bencriscutto
Paul Binstock
Marvin Busse
Charles Byrne
Stephen Chenette
Marvin Dahlgren
Robert Feit
Paul Fetler
Elliott Fine
Richard Fischer
Ray Fitch
Heinrich Fleischer
Paul Freed
Louise Guhl
Carl Hane
Martha Ivory
Alan Kagan
Jerome Kleinsasser
Paul Knowles
George Kroenlein
Robert Laudon
Adrian Lauritzen
Lawrence Malmberg
Duncan McNab
Frances Miller
Emil Niosi
Frederick Nyline
Paul Oberg
Marcella Oja
Emil Opava
Johannes Riedel
John Sambuco
Isidor Saslav
Charles Schwartz
Richard Sieber
Arlin Snesrud
Everett Sutton
George Trautwein
Paul Walton
Lawrence Weinman
Bernhard Weiser

J. Cloyde Williams
Steven Zellmer

Natural Science Program

Chairman: Mark Graubard
165 Physics Bldg.

Naval Science

Head: Cdr. Edward O. Dietrich, USN
203 Armory Bldg.

Northwest European Language and Area Studies, Center for

Director: Alrik Gustafson
210 Folwell Hall

Personal Orientation/see Psychology

Philosophy*

Chairman: May Brodbeck
314 Ford Hall

Richard Arnaud
S. Marc Cohen
Herbert Feigl
Keith Gunderson
William H. Hanson
Herbert Hochberg
George Kliger
Douglas Lewis
Homer E. Mason
Gareth B. Matthews
Grover Maxwell
Karl H. Potter
D. Burnham Terrell

Philosophy of Science, Center for

Director: Herbert Feigl
311 Ford Hall

Physical Education for Men

Chairman: Deane E. Richardson
219 Cooke Hall

Physical Education for Women

Chairman: Eloise M. Jaeger
101 Norris Gymnasium for Women

Physical Medicine and Rehabilitation/see Preprofessional Curricula

Physics and Astronomy* / Institute of Technology

Head: Morton Hamermesh
329 Physics Bldg.

Associate Head: J. Morris Blair
313 Physics Bldg.

Benjamin F. Bayman
Mark Bolsterli
Ronald E. Brown
Warren B. Cheston
Ernest Coleman
Robert Collins
Hans W. J. Courant
Dieter Dehnhard
George D. Freier
Stephen Gasiorowicz
Donald A. Geffen
Clayton F. Giese
Allen M. Goldman
George W. Greenlees
Edward L. Hill
Norton M. Hintz
Russell K. Hobbie
Walter H. Johnson
Roger S. Jones
Karlis Kaufmanis
Paul J. Kellogg
John Lilley
Homer T. Mantis
Michael Moldover
Edward P. Ney
Alfred O. C. Nier
Lewis H. Nosanow
Robert Pepin
Carl H. Poppe
Peter G. Roll
Keith Ruddick
Wayne Stein
Roger Stuewer
Hiroshi Suura
Yau-Chien Tang
Frank Verbrugge
Cecil J. Waddington
William R. Webber
Walter V. Wehmann
James H. Wernitz
John R. Winckler
Neville Woolf
William Zimmermann

Adviser in College of Education

George D. Freier

Physiology*/College of Medical Sciences

Head: Maurice B. Visscher
424 Millard Hall

Marvin B. Bacaner
James S. Beck
H. Mead Cavert
Irwin J. Fox
Eugene Grim
Rodney B. Harvey
John A. Johnson
J. S. Lee
Nathan Lifson
Victor Lorber
Richard Poppele
Richard Purple
Carlo Terzuolo
Maurice B. Visscher
Russell Whitehead

Political Science*

Chairman: Francis J. Sorauf
1414 Social Sciences Bldg. (WB)

Charles H. Backstrom
Richard N. Blue
Harold W. Chase
Robert E. Crew
Eugene Eidenberg
Robert B. Eyestone
William H. Flanigan
Edwin Fogelman
Robert T. Holt
Philip Hopmann
Walter W. Klein
Samuel Krislov
Benjamin E. Lippincott
Charles H. McLaughlin
J. John Penikis
Ellen B. Pirro
David E. RePass
Robert E. Riggs
Burton M. Sapin
John E. Schwarz
Thomas M. Scott
L. Earl Shaw, Jr.
Mulford Q. Sibley
John E. Turner
Charles Walcott

Psychology*

Chairman: John G. Darley
112 Elliott Hall

Personal Orientation Director: Alton Raygor
101 Eddy Hall

Ralph F. Berdie
Ellen Berscheid
Dwight A. Burkhardt
James N. Butcher
John P. Campbell
Rene V. Dawis
Marvin D. Dunnette
Paul W. Fox
Norman Garmezy
Irving I. Gottesman
A. Jack Hafner
Starke R. Hathaway
Gordon T. Heistad
Vivian H. Hewer
James J. Jenkins
David L. LaBerge
Lloyd H. Lofquist
David T. Lykken
Kenneth MacCorquodale
Paul E. Meehl
Norman Miller
J. Bruce Overmier
Jack N. Peterman
Robert E. Phillips
Herbert L. Pick, Jr.
Warren W. Roberts
Wallace A. Russell
William Schofield
Robert E. Shaw
Auke Tellegen
Travis I. Thompson
Milton A. Trapold
Robert G. Warnken
Karl E. Weick, Jr.
David J. Weiss
Robert D. Wirt
John I. Yellott, Jr.

Public Administration Center

Director: George A. Warp
1314 Social Sciences Bldg. (WB)

Public Health/College of Medical Sciences

Director: Gaylord W. Anderson
1325 Mayo Memorial Bldg.

Radio and Television

See Journalism and Mass Communication,
and Speech, Communication, and Theatre
Arts

Religious Studies

AMERICAN STUDIES

Mary C. Turpie

ANTHROPOLOGY

Robert F. Spencer

ART

Dimitri T. Tselos

CLASSICS

William A. McDonald

EAST AND SOUTH ASIAN LANGUAGES

Richard B. Mather

EDUCATION

Timothy L. Smith

ENGLISH

Joseph J. Kwiat

HISTORY

Josef L. Altholz

HUMANITIES

Robert J. Ames

LIBRARY SCHOOL

Raymond H. Shove

MIDDLE EASTERN LANGUAGES

Jonathan Paradise

MUSIC

Johannes Riedel

PHILOSOPHY

Gareth B. Matthews

POLITICAL SCIENCE

Mulford Q. Sibley

ROMANCE LANGUAGES

Richard A. Narváez

SLAVIC AND EAST EUROPEAN LANGUAGES

Wassilij Alexeev

SOCIOLOGY

Arthur L. Johnson

268 / Old Requirements; Faculty

SPEECH AND THEATRE ARTS

Ernest C. Bormann

Rhetoric

Head: R. G. Nichols
230 Agricultural Engineering Bldg. (StP)

Romance Languages*

Chairman: Armand A. Renaud
200 Folwell Hall

Ronald Akehurst
Salvatore Bizzarro
Cecilia deGregory
Eloise Fick
Rodolfo O. Floripe
Claude Francis
Richard Franklin
Russell G. Hamilton, Jr.
Ruth E. Jones
Henry Kalb
Peter W. Lock
Lawrence C. Mantini
Richard A. Narváez
Walter T. Pattison
Maria Philmus
Arshi Pipa
Blandine M. Rickert
Peter Robinson
Dorothy Rundorff
Livia Seim
Sibylle Sinval
Constance Sullivan
Gaylord Todd
Andre Toth
Joseph P. Waldauer

Advisers in College of Education

French: Lawrence C. Mantini
Portuguese: Russell G. Hamilton, Jr.
Spanish: Rodolfo O. Floripe

Scandinavian Languages*

Chairman: *Arik Gustafson*
210 Folwell Hall

William Bomash
Nils Hasselmo
Meri Lehtinen
Marion John Nelson
Lillemor Saether
James Allen Simpson
Gudmund Stang

Slavic and East European Languages*

Executive Officer: *Adele K. Donchenko*
107 Temporary South of Folwell

Wassilij Alexeev
Arthur Hudgins
Eugene Kleiner
Catherine Kulesov
Tatiana Prokopov
Marilyn J. Sjoberg

Adviser in College of Education

Adele K. Donchenko

Social Science Program

Program Director: Hyman Berman
232 Social Sciences Bldg. (WB)

Social Work*

Director: John C. Kidneigh
909 Social Sciences Bldg. (WB)

Alpha Adkins
Robert Bergherr
Chester Bower
James Brusseau
Miriam Cohn
Beulah Compton
Eleanor Felker
Edward France
Susan Goldman
William Hoffman
Franz Kamps
Gisela Konopka
Lawrence Merl
Eugene Milstone
Mayo K. Newhouse
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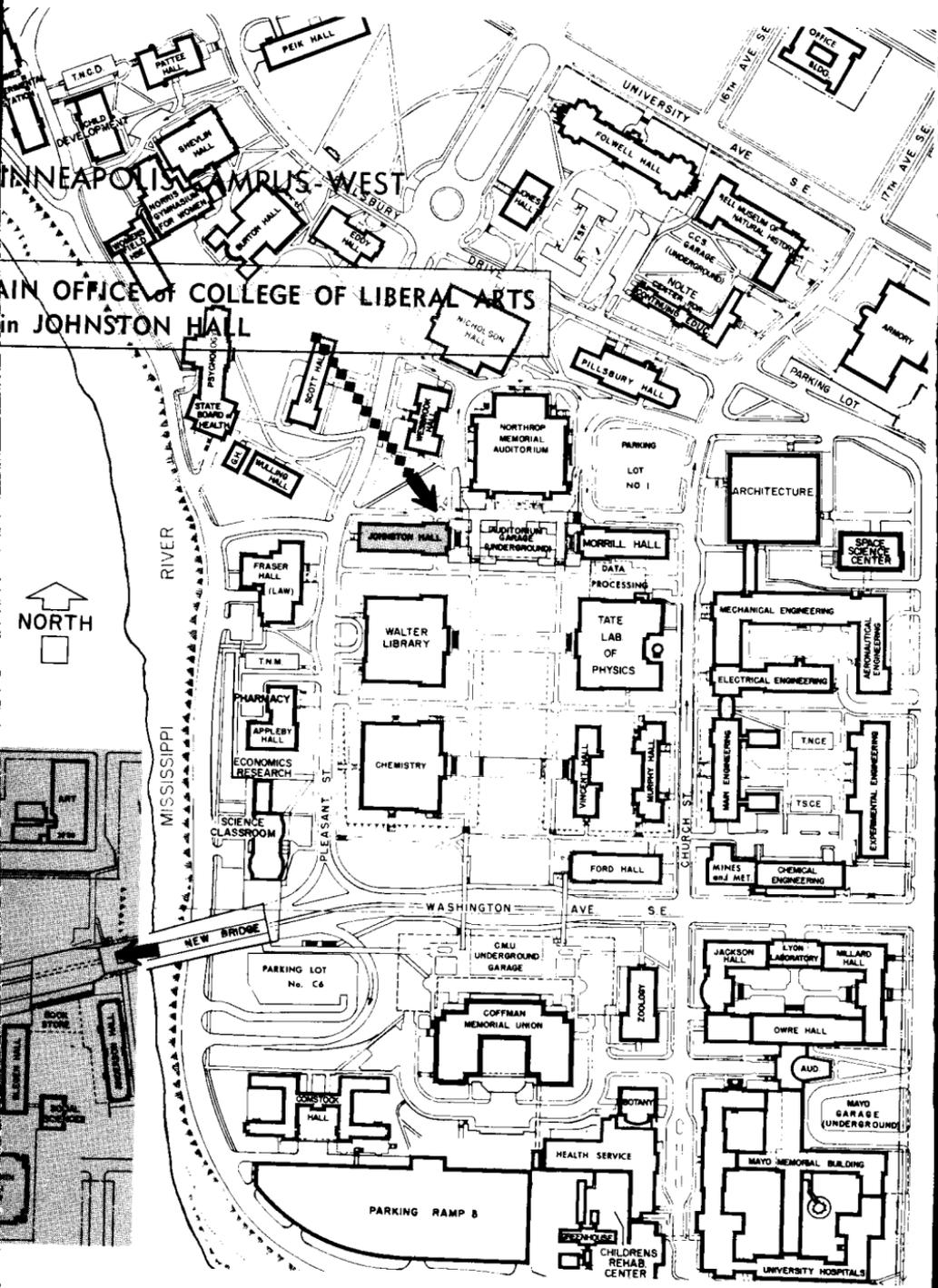
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CAMPUS-EAST



MINNEAPOLIS CAMPUS-WEST

MAIN OFFICE of COLLEGE OF LIBERAL ARTS
in JOHNSTON HALL



MINNEAPOLIS CAMPUS-WEST

*Never let understanding or debate slip out of sight,
or be replaced by force or power in the pursuit of
understanding. For when debate moves out of
sight, society is the loser—painfully so.*

Malcolm Hoos

President
University of Minnesota

UNIVERSITY
MINNESOTA
BULLETIN



1968-70

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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 Plan- ning Council (St. Paul)	Minnesota Department of Corrections
Council House for Senior Citizens	Minnesota Department of Public Welfare
East Side Community Service	Pillsbury Citizens Services
Edward F. Waite Center	Ramsey County Welfare Board
Family and Children's Service (Minneapolis)	Robbinsdale Public Schools
Family Service, Inc. (St. Paul)	St. Paul Board of Education
Hennepin County Court Services	University of Minnesota Hospitals
Hennepin County General Hospital	Urban League
Hennepin County Mental Health Center	Veterans Administration Hospital
Hennepin County Welfare Board	Veterans Administration Regional Center
Home of the Good Shepherd	Washburn Memorial Clinic
Jewish Community Center of Minneapolis	Wells Memorial Community Center
	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 at an astounding rate. Consequently the number of social work positions in this country has redoubled every decade during the past half century. The job opportunities in the field are very great, 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 acute 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,

School of Social Work

and (c) the advanced program of study and research leading to the Ph.D. degree.

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

General Information

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.

SEQUENCES IN 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

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research. (See course listings at end of bulletin.) Brief explanatory statements about some of these sequences follow.

Field Work Sequence—Each student is enrolled in field instruction concurrently with theory courses devoting approximately 3 days per week to field work throughout the 2-year program. Placements, each of 9-month duration in two different public or private agencies, are made for each student. Field work is a course that is provided in a variety of settings, either in an agency which offers social service as a primary function (as in public welfare, family or child welfare service, community center, and the like) or in multidiscipline agencies where social service may be part of a team effort in providing services or may be secondary to a more comprehensive service (such as is the case in child guidance and mental hygiene clinics, hospitals, rehabilitation agencies, court services departments, and school systems). Field work offers a concentration in applying social work methods. It is a planned and organized educational experience designed to move in orderly progression from the simple to the more complex aspects of actual professional social work practice. Under the direct tutorial supervision of a field staff faculty member the student is engaged in actual doing, concurrently making use of theoretical and conceptual material; hence integrated learning is enhanced.

Social Casework Sequence—This sequence in theory and practice of casework method includes consecutive courses. The entire sequence is required for students who select as their area of concentration the casework method. It must be accompanied each term by field work instruction in an agency offering casework services. This sequence deals with knowledge, attitudes, and skills necessary to the practice of casework in any agency setting. Casework with a variety of persons and problems in a range of agency settings is illustrated, analyzed, and evaluated, through case study and lecture.

Social Group Work Sequence—This sequence in theory and practice of social group work method includes consecutive courses plus some courses in supervision and administration. The entire sequence, accompanied by field work instruction in social group work, is required for those students who select as their area of concentration the social group work method. This sequence deals with knowledge, attitude, and skills necessary to helping individuals with many diverse socio-psychological problems through group association on the premise that individuals need qualitative group experiences to deal more effectively with their particular problems and those of their social environment, to gain a feeling of self-worth, a sense of belonging, and a sense of responsibility toward others. Group work with a variety of persons and groups, in a range of agency settings (including children's institutions, youth serving agencies, family agencies, mental health clinics, correctional services, rehabilitation centers, neighborhood houses, human relations organizations, and the like) is illustrated, analyzed, and evaluated through case study and lecture. Work with and supervision of volunteers is included in the sequence content.

Administration-Community Organization Sequence—This sequence in theory and practice in administration and community planning is open to selected graduate students who have completed the first graduate year in either the casework or group work sequences. It is accompanied by a second

graduate year field placement involving administrative and community planning functions. It focuses upon processes of policy development, planning in the social welfare field under either public or private auspices, establishment of programs, administration of programs, and evaluation of programs. A variety of techniques applicable to both unifunctional and multifunctional programs is taught, providing principles for guidance of the social work professional who is to serve in social planning and administrative roles.

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 a sequence in each of the groups of courses under the letter headings B, C, D, and E including at least one course each in administration, casework, community organization, group work, and research.
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.

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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.

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 planning. 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.)

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A reading knowledge of two foreign languages is required, but a substitute for one language may be petitioned. Substitutes may be either a minimum of 15 credits in a collateral field, or evidence of mastery of a research tool such as statistics.

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 acquire a reading knowledge of at least one foreign language, and to review elementary statistics prior to entering full-time study. Upon completion of major, minor, and language 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. Children's Bureau Child Welfare Traineeships*—Training grants of \$2,000 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 \$3,200 (for 9 months) to \$4,267 (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 \$2,000 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. Office of Vocational Rehabilitation 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.

General Information

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 \$1,260 to \$2,520 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 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.

Following are only a few of the scholarships and stipends available from these sources:

I. S. Joseph Scholarship Program for qualified Jewish graduate social work students, residing in Minnesota, Iowa, Nebraska, North Dakota, South Dakota, and northern Wisconsin. Apply before March 31 to Minneapolis Federation for Jewish Service, Room 718, 512 Nicollet Avenue, Minneapolis, Minnesota 55402.

Firestone Scholarship Program for qualified social work students interested in working for Jewish agencies. Amount based on need is \$1,500-\$3,000 per year. Apply by March 31 to Firestone Scholarship Committee, United Jewish Fund and Council, 522 Bremer Arcade, St. Paul, Minnesota 55101.

National Merit Fellowships of Presidents' Club of National Jewish Welfare Board for first- and second-year group work students interested in Jewish Community Center work. Amount is \$3,000 per year. Grant is based on achievement and leadership potential. Financial need is not a factor. Write Personnel and Training Services, National Jewish Welfare Board, 145 East 32nd Street, New York, N.Y. 10016.

National Jewish Welfare Board and Affiliated YM-YWHA and Jewish Community Centers (in all parts of the United States and Canada) offer fellowships, scholarships, and work-study plans (between \$1,500 and \$5,000 a year) for first- and second-year group work students. Commitment to accept employment for 2 years is usually required. A compilation of these fellowships can be secured by writing the Personnel and Training Services, National Jewish Welfare Board, 145 East 32nd Street, New York, N.Y. 10016.

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National Lutheran Council Scholarships for Lutheran graduate social work students are available in varying amounts. For further information, write Division of Welfare, National Lutheran Council, 50 Madison Avenue, New York, N.Y. 10010. Early inquiry is strongly suggested.

Child Welfare League of America Scholarships under varying conditions are offered for graduate social work study by local agency members. For detailed information, write to Child Welfare League of America, 345 East 46th Street, New York, N.Y. 10017.

Family Service Association of America Grants, in varying amounts, are available to qualified graduate social work students. Awards often carry commitment to work for donor agency. For further information, write Personnel Service, Family Service Association of America, 192 Lexington Avenue, New York, N.Y. 10016.

Minnesota State Department of Public Welfare Scholarships for social work training in psychiatric and child welfare settings. Apply by May 1 to Personnel Director, State Department of Public Welfare, Centennial Building, St. Paul, Minnesota 55101.

The *child welfare division* in most state public welfare departments offers generous stipends for training in child welfare. Many states do not require residence in the state and the applicant is permitted to choose among accredited schools of social work. For further information, write to the state department of welfare in the state in which you would like to work.

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 Bureau of Student Loans and Scholarships in the Office of the Dean of Students.

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 various types of nondormitory accommodations, write to Student Housing

General Information

Bureau, 209 Eddy Hall. For dormitory accommodations write to University Housing Office, 180 Wesbrook Hall.

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
Incidental fee (\$30.50 per quarter)	91.50
Tuition (resident) (\$104 per quarter)	312.00
Tuition (nonresident) (\$280 per quarter)	840.00
Application fee (payable upon application)	10.00
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 Only

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.

A. Special Topics and Reading Courses

201f, 202w, 203s. **Special Topics in Social Work.** (Cr ar; prereq ‡)

206f, 207w, 208s. **Readings in Social Work.** Independent study under tutorial guidance. (Cr ar; prereq ‡) Staff

B. Field Work

210f-211w-212s. **Field Instruction in Social Work.** Field practice in social work process under direct supervision. (Cr ar; prereq ¶265 or ¶275, or equiv)

215f-216w-217s. **Field Instruction in Social Work.** Field practice in social work process under direct supervision. (Cr ar; prereq 212)

218f, 219w, 220s. **Field Instruction in Social Work.** Field experience in social work process under direct supervision. (Cr ar; prereq M.S.W. degree in social work)

221f,w,s. **Seminar for Clinical Field Instructors.** (Cr ar; limited to persons engaged in supervising students in field work)

C. Social Welfare Policy and Services

225f-226w-227w-228s.° **Social Policy and Programs I-II-III-IV.** 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. (Cr ar)

240s.° **Seminar: Social Work as a Profession.** (Cr ar; prereq ‡)

241f. **Seminar: The History of Social Work.** 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. (Cr ar; designed primarily for doctoral students)

242s. **Seminar: Social Work Education.** (Cr ar; prereq M.S.W. degree)

243.° **International Social Welfare.** (Cr ar; prereq ‡)

245f,w,s.° **General Seminar: Social Services.** (Cr ar; prereq grad social work students)

D. Human Behavior and the Social Environment

- 248Af-Bf. Concepts of Human Behavior I.** Socio-psycho-biological factors associated with individual and group development as applied to social work practice. (Cr ar; prereq ¶210 or #)
- 249Aw-Bw. Concepts of Human Behavior II.** Continuation of SW 248. (Cr ar; prereq 248A-B or #)
- 250s. Concepts of Human Behavior III.** Psychological factors associated with individual and group development as applied to social work practice. (Cr ar; prereq #)
- 251f-252w. Concepts of Human Behavior IV-V.** Psychosomatic and psychiatric illness; implications for social work practice. (Cr ar; prereq 248)
- 253s.° Concepts of Human Behavior VI.** Use of concepts in social work practice. (Cr ar; prereq grad social work student)
- 256f,w,s.° General Seminar: Concepts of Human Behavior in Social Work Practice.** (Cr ar; prereq grad social work student)

E. Social Work Practice

- 260s.° Administration in Social Work.** Technical study of the process of transforming social policy into social services. (Cr ar)
- 261. Supervision in Social Casework.** Principles of supervision applied to supervisory process in agencies offering casework services. (Cr ar; prereq 260 and #)
- 262f. Supervision in Social Group Work.** Principles of supervision and consultation applied to the supervision of volunteers, subprofessionals, and others working in agencies offering group work services and community programs. (Cr ar; prereq 260, 277 and ¶215)
- 263w. Administration in Social Group Work.** Principles of administration as applied to implementation of social group work programs and services. (Cr ar; prereq 260, 278 and ¶216)
- 264f.° Seminar: Social Work Administration.** (Cr ar; prereq 226 and 260 or #)
- 265f,s. Social Casework I.** Introduction to the philosophy and processes, methods and skills of social casework. (Cr ar; prereq ¶210)
- 266w-267s. Social Casework II-III.** Continuation of SW 265 emphasizing a critical analysis of casework process and development of skill. (Cr ar; prereq 265 and ¶211-212)
- 268f-269w-270s.° Social Casework IV-V-VI.** Advanced casework method focused primarily on treatment methods. (Cr ar; prereq 267 and ¶215-216)
- 271f. Community Organization.** 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. (Cr ar)
- 272w. Social Work Methods for Working with Unifunctional and Local Organizations.** Principles by which practice can be guided in working toward establishing or implementing social purposes through unifunctional and local organizations. (Cr ar; prereq 260, 271 and ¶216)

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- 273s. **Methods for Working with Multifunctional and Complex Social Structures.** Principles to guide the professional worker in policy making processes, planning, and implementation of purposes in a complex society. (Cr ar; prereq 272)
- 274.° **Seminar: Community Organization.** (Cr ar; prereq 271)
- 275f,s. **Social Group Work I.** Introduction to the philosophy and processes, methods, and skills of social group work. (Cr ar; fall qtr open to social work students only, spring qtr one section open to other grad students with #)
- 276w-277s. **Social Group Work II-III.** Continuation of SW 275 emphasizing critical analysis of group work process and the development of skill. (Cr ar; prereq 275 and ¶211-212)
- 278f-279w-280s.° **Social Group Work IV-V-VI.** Advanced group work method focused on treatment and community action. (Cr ar; prereq 277 and ¶215)
- 285w-286s. **Research.** (Cr ar; prereq course in statistics)
- 287f,w,s.° **Special Studies in Social Work.** (Cr ar; fulfills 9-cr requirement for degree project)
- 290w-291s. **Seminar: Recent Research in Social Work.** (Cr ar; designed primarily for doctoral students; prereq intermediate lab course in statistics such as EPsy 216-217 or PubH 110-111 or equiv, plus Soc 182 or ¶Soc 182)
- 295f,w,s.° **General Seminar: Social Work Methods.** (Cr ar; prereq #)
- 298f-299w-300s. **General Seminar: Social Work.** (Cr ar; prereq M.S.W. degree in social work and admission to doctoral program)