

UNIVERSITY OF MINNESOTA BULLETIN

COLLEGE OF
LIBERAL
ARTS
1966-68



College of Liberal Arts

Page Section

5	I	General Information College purposes Organization General degree requirements Registration and other regulations
25	II	Courses and Major Requirements Explanations of symbols and course numbering Departmental requirements Courses offered
206	III	Preprofessional Curriculums in the Arts College 1- to 4-year preparatory programs
226	IV	New Distribution Requirements/Faculty and Advisers

Study this bulletin carefully—keep it handy; you will refer to it constantly for basic information necessary to plan your 1966-1968 work in the Arts College. You will need two other bulletins, however:

Class Schedule (qtrly)

Course hours . . . days . . . room numbers
. . . final examination schedules . . . last-minute changes. For long-range planning, SAVE the fall *Class Schedule*; it alone contains listings for all three quarters.

Bulletin of General Information

Costs . . . calendar . . . University organization and services to students . . .

● Although bulletins cannot be kept entirely current, **YOU ARE EXPECTED TO KEEP INFORMED** about such changes as course hours, room numbers, and revised regulations. These are listed regularly in the "Official Daily Bulletin" section of the *Minnesota Daily*.

Extensive descriptions of freshman-sophomore courses are available in the *Description of Courses in the Lower Division*; copies are maintained in advisers' and Arts College offices, Walter and Johnston Libraries, and most dormitories. The *Moccasin*, a handbook for new students, contains additional information about campus activities and services.

● **KEY TO SYMBOLS AND COURSE NUMBERS**—see pages 25 and 26

● **TO OBTAIN BULLETINS:**

Call at: Information window, Morrill Hall, Minneapolis campus

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

About the **COVER**—an ancient dish or coin on which appears a Greek word meaning "school." A double-image design that suggests our classical heritage of the liberal arts tradition in art . . . drama . . . literature . . . science—the foundation for Western thought.

UNIVERSITY OF MINNESOTA

Board of Regents

First Vice President and Chairman: The Honorable Charles W. Mayo, M.D.,
Rochester

Second Vice President: The Honorable Marjorie J. Howard (Mrs. C. Edward),
Excelsior

The Honorable:

Daniel C. Gainey, Owatonna
Bjarne E. Grottom, Jackson
Albert V. Hartl, Fergus Falls
Robert E. Hess, White Bear Lake
Fred J. Hughes, St. Cloud

Lester A. Malkerson, Minneapolis
William K. Montague, Duluth
George W. Rauenhorst, Olivia
Otto A. Silha, Minneapolis
Herman F. Skyberg, Fisher

Administrative Officers

President: O. Meredith Wilson, Ph.D.

Vice President, Academic Administration: William G. Shepherd, Ph.D.

Vice President, Business Administration: Laurence R. Lunden, B.A.

Vice President for Educational Relationships and Development: Stanley J. Wenberg,
M.A.

Dean of Admissions and Records: Robert Edward Summers, M.S., M.E.

Dean of Students: Edmund G. Williamson, Ph.D.

COLLEGE OF LIBERAL ARTS

Administration

Dean: E. W. Ziebarth, 215 Johnston Hall

Associate Dean: John G. Turnbull, 215 Johnston Hall

Associate Dean for Humanities: J. Dennis Hurrell, 205½ Folwell Hall

Associate Dean for Social Sciences: Fred E. Lukermann, Jr., 223 Social Science
Building

Director, Division of Mathematical and Physical Sciences: Associate Dean Frank
Verbrugge (Institute of Technology) 129 Main Engineering

Associate Dean for Student Personnel: Roger B. Page, 208 Johnston Hall

Director of Upper Division Offices: Mabel K. Powers, 225 Johnston Hall

Director of Lower Division Offices: James B. Preus, 214 Johnston Hall

Director of Honors: William A. McDonald, 115 Johnston Hall

Volume LXIX, Number 12

June 15, 1966

UNIVERSITY OF MINNESOTA BULLETIN

Published semimonthly January 1 to December 15 inclusive. Second-class postage paid at Minneapolis, Minnesota. Send change of address notices and other communications to Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

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

Directory of Departments

Majors leading to the B.A. degree in the College of Liberal Arts are offered by the following schools, departments, and programs. Heads, directors, and departmental offices are listed.

Note—Because departments change physical location from time to time students are advised to check the latest directory.

- American Studies**—Bernard Bowron (10 Vincent Hall)
- Anthropology**—E. Adamson Hoebel (200 Ford Hall)
- Architecture** (Institute of Technology)—Ralph Rapson (110 Architecture Building)
- Art History**—Carl D. Sheppard, Jr. (108 Jones Hall)
- Astronomy** (Institute of Technology)—Willem J. Luyten (368 Physics Building)
- Biology** (College of Biological Sciences)—Richard S. Caldecott (116 Snyder Hall)
- Botany** (College of Biological Sciences)—Ernst C. Abbe (8 Botany Building)
- Chemistry** (Institute of Technology)—Stuart W. Fenton (139A Chemistry Building)
- Child Psychology** (College of Education)—Harold W. Stevenson (136 Child Development Building)
- Classics**—Robert Sonkowsky (309 Folwell Hall)
- East and South Asian Languages**—Edward Copeland (322 Folwell Hall)
- Economics**—O. H. Brownlee (1035 Business Administration Building, West Bank)
- English**—John W. Clark (127 Vincent Hall)
- Geography**—John W. Webb (432 Social Science Building, West Bank)
- Geology and Geophysics** (Institute of Technology)—Tibor Zoltai (108 Pillsbury Hall)
- German**—Edwin F. Menze (219 Folwell Hall)
- History**—Robert S. Hoyt (723 Social Science Building, West Bank)
- Humanities Program**—Robert J. Ames (286 Ford Hall)
- International Relations and Area Studies**—Burton Sapin (1246 Social Science Building, West Bank)
- Journalism and Mass Communication**—Robert L. Jones (111 Murphy Hall)
- Linguistics**—Walter Lehn
- Mathematics** (Institute of Technology)—Steven Orey (115 Engineering)
- Microbiology** (College of Medical Sciences)—Dennis W. Watson (1060 Mayo Memorial Building)
- Middle Eastern Languages**—Anwar G. Chejne (157 Temporary South of Folwell)
- Music**—Roy Schuessler (211 Scott Hall)
- Philosophy**—Karl H. Potter (314 Ford Hall)
- Physics** (Institute of Technology)—Morton Hamermesh (329 Physics Building)

- Physiology** (College of Medical Sciences)—Maurice B. Visscher (424 Millard Hall)
- Political Science**—Francis J. Sorauf (1414 Social Science Building, West Bank)
- Psychology**—John G. Darley (112 Psychology Building)
- Public Health-Biostatistics** (College of Medical Sciences)—Gaylord W. Anderson (1325 Mayo Memorial Building)
- Romance Languages**—Walter Pattison (200 Folwell Hall)
- Scandinavian**—Alrik Gustafson (210A (Folwell Hall)
- Slavic and East European Languages**—Adele K. Donchenko (321B Folwell Hall)
- Sociology**—Elio D. Monachesi (1114 Social Science Building, West Bank)
- Speech, Communication, and Theatre Arts**—Kenneth L. Graham (317 Folwell Hall)
- Statistics**—Bernard W. Lindgren (395 Ford Hall)
- Studio Arts**—Malcolm H. Myers (202 Jones Hall)
- Zoology** (College of Biological Sciences)—Magnus Olson (108 Zoology Building)

The following College of Liberal Arts units do not offer undergraduate majors:

- Biochemistry** (College of Biological Sciences)—L. M. Henderson (214A Snyder Hall)
- Comparative Literature**—G. Robert Stange (221B Vincent Hall)
- Family Studies Center**—Reuben L. Hill (1014 Social Science Building, West Bank)
- Genetics** (College of Biological Sciences)—Ralph E. Comstock (126 Peters Hall, St. Paul)
- Interdisciplinary Programs**
Communication Program—Daniel V. Bryan (210 Temporary North of Mines Building)
Natural Science Program—Mark Graubard (165 Physics)
- Social Science Program*—David Cooperman (232A Social Science Building, West Bank)
- Library School**—David K. Berninghausen (3 Walter Library)
- Northwest European Language and Area Studies, Center for**—Alrik Gustafson (210 Folwell Hall)
- Philosophy of Science**—Herbert Feigl (315 Ford Hall)
- Public Administration Center**—George A. Warp (1314A Social Science Building, West Bank)
- Social Work, School of**—John C. Kidneigh (909 Social Science Building, West Bank)

College Offices

Honors Programs, 115 Johnston Hall

Lower Division

Central Office, 214 Johnston Hall

Division Offices, 201, 214, 220 Johnston Hall, 16 Walter Library

(Each student, upon entering Lower Division, is assigned to one of these offices. It remains his college office as long as he is in Lower Division).

Upper Division

Central Office, 223 Johnston Hall

Honors, 115 Johnston Hall

Humanities, 206 Folwell Hall

Sciences and Mathematics, 223 Johnston Hall, West Bank

Social Sciences, 214 Social Science Building

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.

College of Liberal Arts

Section I

GENERAL INFORMATION

The College of Liberal Arts (often called the Arts College) offers a broad range of educational opportunities, all looking toward the development of satisfying and useful lives.

● **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, and organizes programs that permit you to develop an educational plan that will serve you most effectively.

● **Reaching the Goal**—You and your classmates will not move toward your goals by identical routes. You will work toward a liberal education, however, through educational experiences that will acquaint you with the same basic fields of knowledge:

6 / General Information

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

● **Upper and Lower Divisions**—The Arts College is divided into a Lower and an Upper Division, each with several offices (listed on page 4). Each new student is assigned to one of the Lower Division offices; upon transfer to the Upper Division he is reassigned to the office appropriate to his major.

If he is an honors candidate, the Honors Division becomes his college office.

In the Lower Division, which includes the freshman and sophomore classes, he 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 the Upper Division, specializing in a field of interest while continuing his liberal education. The opportunities and requirements of the two divisions are explained more fully in the following pages.

Departments—The Arts College is organized into departments covering specific areas of the natural sciences, including mathematics, the social sciences, and the humanities. Courses and requirements of these departments are listed in Section II of this bulletin. Faculty are listed in Section IV.

Lower Division Programs for Entering Upper Division / 7

Student Intermediary Board—Students play a part in the college organization through the Student Intermediary Board—a representative group chosen by fellow students to speak for them in student-faculty discussions of educational and other problems. Through the board the students may offer proposals about new courses, regulations, services, and other matters affecting their welfare. The board sponsors many faculty-student projects, such as Liberal Arts Week each fall; it organizes an Arts Freshman Council that meets regularly with college officers and other faculty members to examine freshman problems, and a transfer student committee for similar effort on behalf of advanced-standing students. The board nominates the student members of most student-faculty committees.

The board's five standing committees deal with problems of student personnel, instruction, curriculum, board administration, and general relations. Information about membership on committees and the board's functions and opportunities is available at its office, 101 Johnston Hall.

A number of departments organize student clubs to foster programs and projects related to their fields. Consult in department offices or the Student Intermediary Board office for details.

Honors Student Council—The Honors Student Council, consisting of honors students from all four classes, represents students in discussions of the development and administration of the honors program. It consults with the administration and faculty of the college, and it elects student delegates to the college's committees which act on honors issues.

The council is directly concerned with the development and maintenance of opportunities for honors students to pursue their educational objectives. It participates in the administration of a student-faculty lounge and the sponsorship of a journal of undergraduate scholarly and literary writings. The council is also responsible for such student-faculty activities as the periodic honors student coffee hours.

Any honors student is welcome to join the council or one of its committees. Additional information is available in the Honors Division Office, 115 Johnston Hall, or can be obtained from the Honors Student Council, P. O. Box 13766, Coffman Memorial Union, Minneapolis, Minnesota 55455.

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

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 work or pre-major, this will require at least 2 years of study.

● **Distribution Requirements**—To assure you a reasonably broad, general education adapted to your particular background and needs, the following distribution 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

8 / General Information

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 these distribution requirements during the 2 years in Lower Division; the Upper Division years may then be 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.

New Graduation Requirements—A new set of graduation requirements for the B.A. degree has been adopted. These requirements will not affect students now in college, but are included in Section IV of this bulletin for the information of prospective freshman students, who will be affected probably in 1967 or 1968 (see p. 226 for details).

Lower Division Distribution Requirements for the 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 78) before registration for one of these courses.

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, or (b) 15 college credits in a different language
2 years in one language	(a) 5 college credits at a higher level in same language, or (b) 10 college credits in a different language
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)

Lower Division Programs for Entering Upper Division / 9

(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 1A-2A; Bot 10, 12, 14; Geo 1, 2 before fall 1963; NSci 1-2-3; Phys 1-2-3; Psy 1-2.

E. Humanities

At least 15 credits from two or more of the following categories. At least 5 credits must be offered in any one department to count.

- | | |
|---|--|
| 1. Art | 6. Humanities |
| 2. English literature (including literature portions of freshman English courses) | 7. Mathematics (except Math 5A, T, 20) |
| 3. Classics | 8. Music |
| 4. Foreign literature | 9. Philosophy |
| 5. History | 10. Speech and theatre arts (except Spch 6, 6A, 9) |

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. Students transferring $4\frac{1}{2}$ quarter credits in a department thereby satisfy the "5 credits in a department to count" criterion, but they must have the minimum of 15 earned 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

10 / *General Information*

(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.

● **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.

● **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.

● **Application for Entrance into Upper Division**—If you are a B.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 distribution requirements not yet fulfilled. Usually you will not be permitted to continue in Lower Division after earning 95 credits.

Between the third and seventh 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 2) for entrance to the Upper Division. No application forms will be issued after the seventh week, 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.

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.

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.

Two-Year Program for Associate in Liberal Arts Degree

If you are not sure that you will complete the 4-year Bachelor's degree you may wish to plan for the 2-year A.L.A. degree. 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 drop out for a time.

The requirements for the degree 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 7.

If you meet these requirements you are eligible for the Associate degree even though you enter the Upper Division or a professional school. To apply, inquire at the Office of Admissions and Records.

Upper Division Programs Leading to Bachelor of Arts Degree

● **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 third to the seventh week of the appropriate quarter. 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.

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.

● **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 2 quarters (30 cr) of the senior year in residence in the Upper Division. An average of C must be obtained in all courses taken while in Upper Division. If you have only 1 year of residence, it must be your senior year.

● **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:

12 / General Information

1. Departmental Major and Minor Sequence

- a. A major (minimum of 27 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.
- 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 14).

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.

For the joint program leading to B.A. and B.S. degrees in arts and education, see page 214.

To Modify a Major Sequence—Except where otherwise indicated under departmental headings, modifications of major sequences are sometimes permitted. The student should obtain a petition from the Upper Division and present to his major adviser and the Scholastic Committee for formal approval.

● **English Proficiency**—Every candidate for the B.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.

● **Summary of Graduation Requirements**—Briefly, the requirements for a Bachelor's degree, as discussed in the preceding paragraphs, are as follows:

1. **Minimum Credits**—180.
2. **Residence in Upper Division**—Earn 45 credits after admission to Upper Division, 30 of them in the 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 over-all 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.

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, though not yet eligible for formal candidacy for graduation with honors, may take advantage of specially rewarding learning experiences. Selected freshmen meet in weekly seminar discussions with distinguished members of the faculty. A somewhat larger group of freshmen is 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 require more intensive study, additional reading, and other extra work. (Grade distributions in honors sections and courses take into account the high quality of all the students.)

Departmental Programs Leading to Graduation with Honors—Graduation *cum laude*, *magna cum laude*, or *summa cum laude* is achieved by participation in honors programs established by the departments and interdepartmental programs offering majors for the B.A. degree. Most candidates for honors degrees are admitted to the Honors Division at the end of their sophomore year. Requirements for admission to the Honors Division are at least a 3.00 grade point average over all and in prerequisite courses for the major, as well as approval of the major adviser or departmental honors representative. Departmental programs may require honors sections, seminars, individual research,

14 / General Information

tutorials, and other appropriate activities. Honors candidates are also encouraged—by some departments, required—to take part in College Honors Seminars. The seminars, in contrast to departmental honors courses which emphasize depth of learning in major fields, deal with problems of more general interest and are open to majors from all departments with the approval of the Honors Division and the seminar leaders.

Outstanding students at all levels are encouraged to seek credit by examination (see page 22). All students hoping to graduate with honors must apply for candidacy at the Honors Division Office, 115 Johnston Hall, usually at the time of admission to Upper Division.

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 to make an appointment to see the chairman of the committee.

Admission to University College is based on the 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 *Bulletin of University College* provides full information about the program.

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

How to Register

Registration is the procedure of enrolling in the particular courses you will take for the coming quarter. It encourages you to re-examine your educational goals in light of your activities both in and outside the classroom.

A new student must obtain his admission certificate from the Office of Admissions and Records in Morrill Hall before seeking to register. Both new and old students receive printed instructions with their registration materials. Careful compliance with the instructions will help avoid difficulties and inconveniences.

● **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*. Registration is not complete until registration material has been turned into the Office of Admissions and Records. The expiration date is listed in the University Calendar that is included in the *Class Schedule* and the University's *Bulletin of General Information*. Only in exceptional circumstances may you register after that date, in which case you must procure approval of the Scholastic Committee and pay a special privilege fee.

New students entering in the fall come to the University in small groups for 2 days of orientation and registration throughout August and early Septem-

ber. 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:

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 in 105 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.
3. *Limitation on Cancellation* (Scholastic Committee approval required)—Cancellation in the last week of classes rarely is approved; by that time the student has essentially completed the course and must stand for a grade.
Cancellation below 12 credits is studied critically before approval can be granted. The standards of the college are defined in part by the number of credits a student must take; only under pressing extenuating circumstances can the standard be temporarily waived.
Cancellation (other than in the first 5 days of the quarter, when certain re-adjustments may be necessary because of failed prerequisites, etc.) is permitted only once in each academic year. Students are expected to plan their programs carefully, take into account necessary outside obligations, and stay with programs for which they register. Only in the most unusual cases will a student be permitted more than one cancellation a year.
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.
5. *Addition*—Permission of Scholastic Committee and instructor is required after 3 days of the quarter. Permission is seldom granted after 5 days.
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.

Courses in General Extension Division—Appropriate courses in the General Extension Division, including television courses and correspondence study,

16 / General Information

may be transferred to the Arts College if the student is in good standing in the college. (Use of correspondence credits in the major requires the approval of the major department.) Registration in evening or television classes while registered in the 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.

Honors Sections—In some departments, special sections of introductory courses, indicated by H in course numbers, are provided for students of outstanding scholarship. If you think you are eligible, inquire about them at the appropriate departmental office or in your college office.

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.

Student Personnel Services

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

1. When you enter 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, or 16 Walter Library.
If at any time you decide to enter one of the following programs, you should report to 214 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 300 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 small capital letters 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 advisers 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. If you should ever wish to change your adviser, this can usually be arranged if you apply at 214 Johnston Hall or, if in the Upper Division, at the departmental office of your major.

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

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

When a student needs help, he should go to his college Divisional office. A representative of the committee will be glad to talk with him. To seek exemption from a regulation, the student must turn a written petition in to that office. Review of the petition usually takes a few days; student should return to the office to learn what action has been taken.

Other faculty members and students on the committee serve in an advisory capacity.

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.

Orientation Programs—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.

College Placement Services—Assistance to graduates in finding appropriate employment is provided both by students' major departments and by the Col-

lege 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 Personnel Services**—In addition to your faculty adviser and college office counselors, the following specialized services are provided by the University for all students:

Professional help on personal problems or vocational choice: Student Counseling Bureau, 101 Eddy Hall

Student activities: Student Activities Bureau, 4 TNM or Coffman Union Program office, 229 Coffman Memorial Union

Financial help: Bureau of Student Loans and Scholarships, 104 Wesbrook Hall

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

Improving study skills: Reading and Study Skills Clinic, 101 Eddy Hall

Speech difficulties: Speech and Hearing Clinic, 225 Shevlin Hall

Veterans' benefits: 102 Morrill Hall

Finding a room or apartment: Student Housing Bureau, 209 Eddy Hall; for married students, 100 Wesbrook Hall

Foreign student: Foreign Student Adviser, 717 East River Road

Health problems: University Health Service building

Legal problems: Legal Aid Clinic, 133 Fraser Hall

Arts College Regulations

Petition for Exemption from College Regulations—The faculty has set up certain regulations to help students achieve a good education and to facilitate the operations of the Arts College. These rules are believed wise for most students most of the time, but occasionally they may work to the educational disadvantage of a particular person. In this event, he may ask for exemption through a petition to the Scholastic Committee.

Regular petition blanks are available in the Scholastic Committee offices of the Lower and Upper Divisions. An endorsement from the faculty adviser or instructor should be secured if appropriate. If the student desires, he will be given an opportunity to discuss his situation with a committee representative. When the committee has taken action, the reply should be picked up in the college office.

Registration Regulations—Special rules pertaining to registration procedures are discussed in a preceding part of this section.

● **Classification of Students**—A student with less than 39 credits is a freshman. A student with 39 or more credits is a sophomore until admitted to the Upper Division. A student in the Upper Division who has less than 135 credits is a junior; one with 135 or more credits is a senior.

20 / General Information

● **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**—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. (A degree will not be granted on any record that contains an I.) 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 unless he is doing passing work.

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.

● **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 (including F's) have been recorded. A grade point ratio of 2.00 (C average) is the minimum standard required for satisfactory progress toward the B.A. degree.

● **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 (D and F) 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 if *any* deficiency continues beyond 1 quarter, or if he has been on probation previously and falls below a C average in any category.

A student is removed from probation when he has a C average; in Upper Division this rule applies to all three areas noted above.

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

22 / General Information

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 a failing grade if he was not. An I not made up will be changed to an F (fail).

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.

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.

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.

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 16.
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.

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

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 Science 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 correspondence classes.
5. Complete 45 credits in residence *after* admission to Upper Division. Extension courses in St. Paul, Minneapolis, and Duluth are "in residence"; correspondence work is not.

A student dropped from the Arts College may register for work in the General Extension Division only with explicit approval of the Scholastic Committee. Any credits thereafter earned through the General Extension Division are applicable toward a B.A. only if accepted by the 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 Science Building, or 206 Folwell Hall.

Fees and Expenses

For information concerning fees and expenses, see the *Bulletin of General Information*.

Scholarships and Awards

In addition to the all-University aids available through the Bureau of Student Loans and Scholarships, 104 Wesbrook Hall, 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

24 / General Information

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.

Official Daily Bulletin

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

Section II

COURSE OFFERINGS AND MAJOR REQUIREMENTS

Explanations

● **Course Numbering**—A course is designated by an abbreviated prefix of the department name and a number or a letter. It has the same number in whatever quarter it is offered. The quarter is indicated by a lower case letter following the number (f, fall; w, winter; s, spring; su, summer).

Examples:

3f,w,s, a 1-quarter course given each quarter.

1f-2w, a 2-quarter course given in the fall and winter.

1w-2s, the same course given in the winter and spring.

A course sequence punctuated by commas may be entered any quarter, subject to listed prerequisites; one punctuated by hyphens must be taken in the order listed. Thus: NSci 171, 172, 173 may be entered any quarter; Jour 140-141 may be entered only in 140; a sequence numbered 1, 2-3 might be entered in either 1 or 2.

Courses in this bulletin are those which departments are authorized to give. Few departments are able to offer all courses every year. The *Class Schedule*, issued before the beginning of each quarter, indicates the courses to be offered for a particular quarter. The fall quarter *Class Schedule* has the offerings planned for the whole year.

● **Lower Division and Upper Division Courses**—The Arts College distinguishes between Lower Division courses (numbered 1 through 49), intended primarily for freshmen and sophomores, and Upper Division courses (numbered 50 or above), intended primarily for juniors and seniors.

Courses numbered 50-99 are open to juniors and seniors. Most of these, unless otherwise indicated, also are open to sophomores who have averages of C or better in prerequisite courses and in all work.

Courses numbered 100-199 are open to juniors, seniors, and graduates unless otherwise indicated.

Courses numbered 100-199 are open to third-quarter sophomores by special permission of the Scholastic Committee. The committee usually will grant such permission to students who have an average grade of at least C in all their work and in the prerequisite courses, provided they have completed requirements for entering Upper Division or a professional school. Requests for special permission should be presented to the appropriate Lower Division office.

When a course is offered at both levels, i.e., 1-49 and 50-99, a student should take the level appropriate for him.

26 / Course Offerings and Major Requirements

Courses numbered 200 and above (generally not open to undergraduates) are not included in the Arts College bulletin (see instead, *Bulletin of the Graduate School* for these course listings).

Listing Credits—Indication of number of credits follows the same style as for numbering courses; number of credits is listed for EACH quarter.

Examples:

101,102,103...2,3,3 cr

Interpretation: 2 credits granted for 101 when completed, 3 credits each granted for 102 and 103 when completed.

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

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

101-102†-103...2-3†-3 cr

Interpretation: course must be taken in sequence; 5 credits granted when 101 and 102 are completed; 3 credits when 103 is completed.

● **Symbols**—The following symbols are used throughout the course descriptions and will not carry any page footnotes:

† To receive credit, all courses listed before the single dagger must be completed

‡ No credit is granted if credit has been received for equivalent course listed after this section mark

¶ Concurrent registration is allowed with the course listed after paragraph mark

‡ Consent of instructor is required

△ Consent of department or school offering course is required

Accounting/see Business Administration

Aerospace Studies (Air)/Air Force ROTC

Air Force ROTC is a new 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.

The new 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, 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 \$40 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 a civilian flying school 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 *Bulletin of the Army-Navy-Air Force ROTC*.

UPPER DIVISION COURSES

Upper Division courses are open to juniors and above.

Growth and Development of Aerospace Power/Aerospace Studies 300

131f History of Air Power (AS 301)

3 cr; prereq Δ ; Suttie, Johnson

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 Organization and Concepts (AS 302)

3 cr; prereq Δ ; Suttie, Johnson

Analysis of the mission and organization of the Defense Establishment; aerospace concepts, doctrine, and use in relation to a

nation's resources. Importance of the United States space program. Seminars developing individual skills in research and oral reporting. Field trips to selected Air Force bases.

133s Astronautics and Space Operations (AS 303)

3 cr; prereq Δ ; Suttie, Johnson

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 Professionalism (AS 401)

3 cr; prereq Δ ; Gill, Denice

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

142w Leadership and Human Relations (AS 402)

3 cr; prereq Δ ; Gill, Denice

Philosophy and scope of leadership. Interaction of individuals and groups in large scale organizations. Case studies in human relations, role playing, conference and discussion methods, communication and problem solving. Field trips.

143s Military Executive Management (AS 403)

3 cr; prereq Δ ; Gill, Denice

Includes functions of the military executive: planning, organizing, directing, co-ordinating, and controlling. Surveys the application of management functions to the organization. Explores determining the 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 an FAA certification as a private pilot. Includes instruction, and practice on federal aviation regulations, aircraft instruments, meteorology, radio aids, air navigation, flight theory, and other subjects pertaining to the 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 credits in courses dealing with foreign civilization and 51 credits in courses concerned with civilization in the United States as follows:

- A. 42 credits in approved courses, including at least 9 credits in each of four fields: American history; American literature; American art and philosophy; social sciences in the United States
- B. 9 credits in AmSt 90-91-92

Special Provision for Nonmajors—Although 9 credits 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, Jones
Each quarter is organized around a topic, such as individualism in American life and

thought, religious and philosophic attitudes in relation to American ideas, or rise of American nationalism and its place in the modern world.

UPPER DIVISION COURSES

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

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

3,3,3 cr; Cooperman, Hage
Introduction to American cultural history. Each quarter is organized around topics that disclose a major conflict of ideals—for example, liberty and property in the early Republic, individualism and majority rule in the pre-Civil War era, or materialism and idealism in the 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 is organized around a problem presented by some representative theme, figure, or period (for example, the city and American thought, Frank Lloyd Wright, the 1920's). A variety of subjects will be offered from year to year.

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

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 *Bulletin of the Medical School*.

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.

3f Elementary Anatomy

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

4s Elementary Anatomy

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

Anthropology (Anth)

● Major Sequence in Arts College—

Prerequisites:

Anth 1A and 2A or 100

Requirements:

1. Anth 80, 90, 164, 169, 173 (or 170 and 171), and 85
2. Minimum of 6 additional credits in Ethnology (Group I), 3 credits of which must be in Old World Ethnology (i.e., courses numbered 120-129)
3. Minimum of 3 additional credits in Cultural Anthropology (Group III)
4. Six additional elective credits to make a total minimum of 33 credits of Upper Division courses in anthropology

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

Students planning to take graduate work in anthropology should immediately consult with Professor Pertti J. Peltó 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).

30 / Course Offerings and Major Requirements

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.

2Aw,s Introduction to Anthropology: Cultural Anthropology

5 cr; Hoebel, Spencer, Pelto, Gerlach

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

42 Introduction to World Ethnography

4 cr; prereq 2A; Spencer, Bender
Survey of major tribal and folk cultures of the 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 §; staff
Problems of theory and method in the various branches of anthropology.

100 Principles of Cultural Anthropology

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

101 Principles of Bio-cultural Evolution

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

190-191-192 Directed Research

Cr ar; prereq sr, Δ; staff

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; interdepartmental staff
Integrating course for students majoring in the East and South Asia Area Studies program.

197-198-199† India and Pakistan Since Independence

2-2-2 cr; may not be used for credit in anthropology major or minor sequence; Burke

An interdisciplinary survey; policies of these countries in all fields of endeavor; social, cultural, economic, political, and foreign affairs; degree of success with which they are employing opportunities provided by independence to meet the revolution of rising expectations.

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

115 Indians of the Great Plains

3 cr; prereq 2A or 100 or Δ; Hoebel
Prehistoric origins of the tribes. Cultures of the Missouri River tribes and the nomads of the Plains.

117 Indians of South America

3 cr; prereq 2A or 100; Salovesh
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; Miller, Salovesh
Survey of both Indian-Spanish speaking people of Middle America. Analysis of processes of acculturation that have produced the 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 the Sahara. Peoples representative of each culture area studied with special attention to social organization, economic and political systems, and adjustment to modern conditions.

121 Peoples and Cultures of the South Seas
3 cr; prereq 2A or 100; Kiste
Survey of races and cultures of Pacific Islands (Polynesia, Micronesia, and Melanesia).

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 society.

125 Peoples and Cultures of India
3 cr; prereq 2A or 100 or Δ ; Spencer
Survey of tribes, Hindu caste society, and modern communities of India.

126 Peoples and Cultures of Southeast Asia and Indonesia
3 cr; prereq 2A or 100 or Δ ; Spencer, Johnson
Cultures of the peoples of Burma, Siam, French Indochina, and the Malaysian archipelago. Influences from India on the area. Islamic influences in Indonesia. Modern ethnic and national problems.

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

Group II—Archaeology

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

Group II—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 the Old World
3 cr; prereq 90; Johnson
Survey of the archaeological record of human cultural origins and developments in the 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 pre-history 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; especially suitable for nonmajors; Kiste
Introduction to comparative study of religion in its cultural context.

150 Cultural Change and Development
3 cr; prereq 2A or 100; Miller
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 (formerly 6 cr); prereq sr, grad, Δ ; Miller
Introduction to techniques of field observation, interviewing, and recording; training in field methods, presentation of data, and interpretation of results provided by laboratory exercises with informants.

32 / Course Offerings and Major Requirements

160 Anthropology of Law

3 cr; prereq 2A or 100; waived for majors in other social sciences; Hoebel, Gerlach

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; prereq 2A or 100; Spencer

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, Pelto

Analysis of inventions men have developed in adapting to varied environments of the world. Ideas and techniques involved in manufacture of foodgetting equipment, means of transportation and communication, and other devices for satisfaction of human needs are examined in historical and ecological context.

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

Structure of nonliterate and folk societies; special attention to 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 the 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 theorists.

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 ; Novak

Evolution of races, present living races, the mechanism for differentiating the 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, Novak

History of blood groups; blood groups and human genetics, ABO, MNS, P., Rh, Lutheran, Kell, Lewis, Duffy, Kidd, Diego, haptoglobines, transferrines, gammaglobulines, Gc system, hemoglobins; blood groups and disease; blood groups and linkage.

173 Human Biology

3 cr; prereq 1A, 101, or Δ ; Murrill

Evolutionary processes in the 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 Δ , or 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 Δ ; Novak

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, Novak

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

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

180-181† Descriptive Linguistics

3-3 cr†; prereq Δ ; Spencer, Sarles

180: Phonetics and phonemics. Analysis of speech sounds and practice in phonetic recording and phonemic analysis. 181: Morphology and syntax. Problems in phonologic, morphonologic, morphologic, and syntactic structures of selected languages outside the 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 (Arch)/Institute of Technology**

- 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. Art 23A-24A-25A
- D. Approval by School of Architecture after formal application has been made

Obtain application forms (AR110) 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 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.

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

34 / Course Offerings and Major Requirements

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

LOWER DIVISION COURSES

1s Introduction to Architecture

1 cr; 1 lect hr per wk; Winterowd

Philosophy and principles of architecture as an art, a science, and a profession.

UPPER DIVISION COURSES

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

51f-52w-53s History of Architecture

3-3-3 cr; prereq soph; 3 lect hrs per wk; Winterowd

Development of architecture in ancient Egypt and Mesopotamia through the 15th century.

Reading and written reports on special historical problems.

131f Planning

3 cr; Vivrett

Evolution of urban planning as a function of government, a profession, and an academic discipline. Theory of urban form and its organization and functioning.

54f,55w,56s History of Architecture

3,3,3 cr; prereq 53 or #; 3 lect hrs per wk; Winterowd

Development of architecture from 16th century through current day.

132w Planning

3 cr; Vivrett and visiting lecturers

Conceptualization of role of individual disciplines in planning process; physical, social, economic, and political aspects of urban organization and functioning as an aid to understanding urban areas.

81f-82-83j Architectural Design

6-6-6† cr; prereq jr, Δ; 18 lab hrs per wk

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

133s Planning

3 cr; Vivrett

Community facilities and housing. Problems; local and federal policies affecting supply and quality of housing; health, educational, and recreational facilities and services that support urban residence.

91-92-93j 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.

134 Planning

3 cr; prereq 133 or #; Vivrett

Tutorial work in community facilities and housing.

101-102-103 Tutorial Work in History of Architecture

2-2-2 cr; prereq 56 or #; 1 conf, 5 res hrs per wk; Winterowd

Art (Art)

The principal objective of the Department of Art is to contribute to the student's general education. With this end in view, all courses in both history and practice 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 or studio, the Department of Art offers professionally oriented courses at the Upper Division level and graduate courses leading to the degrees of the M.A. and Ph.D. in history and criticism; the M.A. in museology; and the M.F.A. in the practice of art.

Note—Superior students in art may be required to leave permanently with the department one or two examples of their work. These examples will

be used for exhibition and for a continuing record. Such students will be compensated for materials used.

● **Major Sequences in Arts College**—In the Department of Art it is possible to major in (1) history and criticism or (2) practice of art, or (3) various combinations of these. The student intending to major in art should consult one of the departmental advisers as soon after entrance to college as is practicable.

A. History of Art

Prerequisites:

- A. Art 1 or 50; or 2, 3, 4, 5, or 56, 57, 58, 60
- B. One course from the following: 10, 20, 40, 45

Requirements: total—30 credits

- A. 3 credits from each of the following five 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

Nineteenth and Twentieth Century 146, 147, 148; 156, 157, 158; 176, 177, 178

- B. Art 199

- C. 12 credits selected from courses numbered above 100

B. Studio Course Major

Prerequisites:

- A. Art 1, 20, 40

- B. 9 credits from the following: 10, 23, 24, 32, 41, 45

Requirements:

- A. 27 credits in studio courses numbered 50 or above

- B. 9 Upper Division credits in art history

● **Minor Sequences in Arts College**—It is possible to minor in the history and criticism or the practice of art or in various combinations of these.

The student wishing to minor in studio art should note that Upper Division sequences in studio work sometimes have one or more prerequisites at the Lower Division level.

Students wishing to minor in art history may register for a wide variety of Upper Division courses with consent of department.

The student intending to minor in art is invited to consult one of the departmental advisers. To facilitate reference to the several art sequences, the following index will be helpful:

36 / Course Offerings and Major Requirements

INDEX TO ART SEQUENCES

Lower Division Courses

Art History—1, 2, 3, 4, 5, 47	Printmaking—32, 33
Photography—10, 11	Sculpture—40, 41, 42
Drawing and Painting—20, 23, 25	Ceramics—45
Design—24	

Upper Division Courses

Art History—50, 56, 57, 58, 60, 77, 78, 100, 101, 102, 103, 104, 105, 106, 107, 108, 110, 111, 112, 113, 114, 115, 116, 117, 118, 126, 127, 128, 129, 130, 136, 137, 138, 139, 140, 141, 142, 143, 146, 147, 148, 156, 157, 158, 159, 161, 166, 167, 168, 169, 171, 176, 177, 178, 186, 187, 188, 189, 196-197-198, 199
Photography and Film—83-84-85, 123-124-125, 184
Drawing and Painting—51, 54, 55, 60B-61B-62B, 70-71-72, 70B-71B-72B, 120-121-122, 150-151-152, 183
Design—65, 73-74-75
Lithography—133-134-135
Printmaking—90-91-92, 190-191-192
Sculpture—80A, 81A, 82A, 80B, 81B, 82B, 80C, 81C, 82C, 180A, 181A, 182A, 180B, 181B, 182B, 180C, 181C, 182C
Ceramics—93-94-95
Advanced Problems: Studio—193-194-195. Special problems in all media in studio.

Courses especially recommended for general education: 1, 2, 3, 4, 50, 56, 57, 58, 77, 78.

Art History

LOWER DIVISION COURSES

1f,w,s Principles of Art

5 cr, §50; prereq fr and soph only; 2 lab hrs; art history staff

Lecture and laboratory: basic problems of art. Examples from painting, sculpture, and architecture of various periods illustrate general cultural factors that influence production of art and basic problems of design and of technique. Laboratory-discussion sessions introduce student to practical problems arising from nature of materials of visual arts.

2f Survey: History of Art

3 cr, §56; art history staff

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

3w Survey: History of Art

3 cr, §57; art history staff

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

4s Survey: History of Art

3 cr, §58; art history staff

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

5 Survey: History of Art

3 cr, §60; art history staff

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; art history staff

Similar to Art 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; art history staff

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

57w Survey: History of Art

3 cr, §3; art history staff

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

58s Survey: History of Art

3 cr, §4; art history staff

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

59su Summer Travel Course in European Art

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

UPPER DIVISION COURSES

Prerequisites for all courses: Art 1 or 50; or 2, 3, 4 or 56, 57, 58 or §. Starred papers for Plan B may be prepared in all courses except 140, 141, 142 and 186-187-188.

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 the classical and Hellenistic periods.

102 Roman Art

3 cr; prereq 2, §; McNally, Tselos

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

103f Medieval Art

3 cr; 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; Sheppard, Tselos

Survey of architecture, sculpture, painting, and selected minor arts of western Europe

Conducted by Department of Art under auspices of Summer Session. Main phases of ancient, medieval, Renaissance, baroque and modern art. Lectures, guided visits, and discussions at important cultural centers, museums, and cathedrals. Cities usually visited: Lisbon, Madrid, Toledo, Athens, Delphi, Corinth, Mycenae, Rome, Assisi, Siena, Florence, Ravenna, Venice, Salzburg, Innsbruck, Munich, Frankfurt, Copenhagen, London, Paris, Chartres.

60 Survey: History of Art

3 cr, §5; art history staff

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

86f-87w-88s Art of the Film

3 cr; prereq 9 cr in art or 9 cr in speech incl Spch 11; Amberg

Critical study and analysis of motion picture as an art form. Emphasis on finished product, demonstrated in a 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.

from Dark Ages to Gothic period, including art of barbarian kingdoms; Irish-Insular, Asturian, Mozarabic, Carolingian, Ottonian, Anglo-Saxon, and Romanesque styles.

105s Medieval Art

3 cr; Sheppard, Tselos

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

106 Italian Art of the Fourteenth Century

3 cr; Canedy

Proto-Renaissance sculpture and painting and alternative trends. Painting after the Black Death. The International Style in painting and sculpture.

107 Early Fifteenth-Century Art in Italy and Northern Europe

3 cr; Canedy

Early Italian Renaissance architecture, sculpture, and painting; and Early Netherlandish painting.

108 Late Fifteenth-Century Art in Italy and Northern Europe

3 cr; Canedy

Painting, sculpture, and architecture in central and northern Italy; and northern European painting.

38 / Course Offerings and Major Requirements

110 Art of India

3 cr; prereq 3 cr in art history; Poor
Development of painting, sculpture, painting,
sculpture and minor arts.

111 Art of China

3 cr; prereq 3 cr in art history; Poor
Development of painting, sculpture, and
minor arts from earliest times to the present.

112 Art of Japan

3 cr; prereq 3 cr in art history; Poor
Development of painting, sculpture, and
minor arts from earliest times to the present.

113 High Renaissance Painting in Italy and Northern Europe

3 cr; Canedy
Leonardo, Raphael, Michelangelo, Giorgione,
and Titian. Grünewald, Holbein, and Dürer.

114 Sixteenth-Century Sculpture and Architecture

3 cr; Canedy
High Renaissance, mannerism, and other
trends in Italy and northern Europe.

115 Later Sixteenth-Century Painting

3 cr; Canedy
Mannerism and other trends in Italy and
northern Europe.

116 Baroque Art in Italy and Spain

3 cr; prereq^{oo}; Thomas
Protobaroque and early baroque painting;
Barocci, the Carracci, Caravaggio. Early
baroque architecture in Rome. Bernini and
high baroque fusion of architecture, sculpture,
and painting. Illusionistic ceiling painting.
Classical tendencies in later 17th-century
Roman art. Sculpture and painting in
Naples, Bologna; architecture and painting
in Venice. Piedmontese baroque architecture;
Guarini, Juvara. Baroque painting
in Spain: El Greco, Velasquez, Zurbaran,
Murillo.

117 Baroque Art in France and England

3 cr; prereq^{oo}; Thomas
Classicizing baroque art in France: Louis
XIV, Versailles, and academic French art.
Baroque art in French provinces. New tendencies
in later 17th century. Late Renaissance
and baroque architecture in England:
Inigo Jones and Palladianism; Vanbrugh and
Wren and high baroque. The English portrait.

118 Baroque Art in Flanders and Holland

3 cr; prereq^{oo}; Thomas
Flemish and Dutch baroque architecture and
sculpture. Rubens and classical baroque
painting in the North. Van Dyck and the
aristocratic portrait. Flemish genre painting.
Development of Dutch baroque painting:
Hals and the portrait; Vermeer and De
Hooch and genre painting; Ruisdael and

Cuyp and the Dutch landscape; the minor
specialists. Rembrandt and his school.

126 Eighteenth-Century Art in Italy

3 cr; prereq sr, grad or #; Thomas
Late baroque and classicizing trends in
architecture. Neoclassic architecture. Roman,
Neopolitan, 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; the lesser masters. Prints.

128 Eighteenth-Century Art in England and Germany

3 cr; prereq sr, grad or #; Thomas
Palladian revival in architecture. Robert
Adam. The English portrait: Reynolds,
Gainsborough. Hogarth. English landscape
painting. German and Austrian late baroque
and rococo architecture, sculpture, and
painting.

129 History of Graphic Arts

3 cr; prereq sr, grad or #; Thomas
Origins of woodcut and of engraving. 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. Lithography,
Géricault, Delacroix, Daumier. Twentieth-century
printmaking.

130 Master Drawings

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

136 Art in the United States

3 cr; prereq sr, grad or #; Torbert
Painting and sculpture from origins to mid-
19th century. Relations with England and
Europe. Copley, Stuart, West, and their
followers. Rise of landscape painting. Early
weeks of quarter devoted to analysis of
means of expression common to visual arts.

137 Art in the United States

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

^{oo} Prerequisite is 9 credits in history of art, or 9 credits in literature or history with consent of department.

138 Art in the United States

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

139 Decorative Arts in England: 1700-1900

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

140 Scandinavian Architecture

3 cr; prereq sr, grad or #; Nelson
Main emphasis on development of native tradition in architecture from medieval stave churches, through folk architecture, to modern style. Survey of important architectural monuments in Scandinavia that are less native in character, but which have contributed to local development.

141 Scandinavian Painting

3 cr; prereq sr, grad or #; Nelson
Three areas of concentration: medieval wall and panel painting; folk painting and tapestry weaving in 17th, 18th, and 19th centuries, and modern painting. In last section, special attention to Edvard Munch and Norwegian mural painting.

142 Scandinavian Sculpture and Minor Arts

3 cr; prereq sr, grad or #; Nelson
Emphasis in sculpture will be on medieval, neoclassic, and modern periods. Emphasis in the 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 the Alps, neolithic ceramics, wood carving of later Viking period. Concentration of Scandinavia, includes Stone Age, Bronze Age, and pre-Christian Celtic art of east, central, and west Europe.

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
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 the skyscraper.

148 Modern American and European Architecture

3 cr; prereq sr, grad or #; Torbert
Development of modern architecture on international scene. Later work of pioneers. Wright, Berlage, Behrens, Gropius, Mies, Le Corbusier, and their influence. Modern uses of concrete; Wright, Perret, Nervi, Torroja, Candela, Tange, Saarinen.

156 Nineteenth-Century French Painting, 1800-1860

3 cr; prereq sr, grad or #; Tselos, Waldfogel
David and his followers. The romantic figure style culminating in Delacroix, Corot, and the Barbizon landscape painters, resurgence of neoclassicism in the 1840's, and Courbet and his influence.

157 Nineteenth-Century French Painting, 1860-1900

3 cr; prereq sr, grad or #; Tselos, Waldfogel
Realism of Manet and Degas, impressionist idea and its evolution, multiple styles of postimpressionists, and aestheticism, symbolism, and mysticism of 1890's.

158 Nineteenth-Century German Painting

3 cr; prereq sr, grad or #; Tselos, Waldfogel
From Runge to Corinth: romantic landscape, the Nazarenes, Biedermeier, realism of Menzel and Leibl, eclecticism of 1870's and 1880's, realism and impressionism at end of century.

159 English Painting from 1750 to 1850

3 cr; prereq sr, grad or #; Tselos, Waldfogel
Landscape painting from topographers to Turner. Other artists and movements. Blake and Fuseli, Haydon and Etty, pre-Raphaelites and Victorian narrative painters.

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.

166 Chinese Painting

3 cr; prereq 3 cr in art history 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 3 cr in art history or #; Poor
Survey: Japanese pictorial arts from earliest to modern times. Focus on those works that best exemplify development of indigenous traditions.

40 / Course Offerings and Major Requirements

168 Modern Sculpture from Rodin to Roszak: 1875-1960

3 cr; prereq 3 cr in art history; Torbert, Tselos

Rise and development of modern sculpture; romantic and revivalist currents; modeling and direct carving; cubist, neoplastic, expressionist, surrealist, and neo-Dada tendencies.

169 Modern Sculpture from Houdon to Rodin: 1775-1920

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

Academic trend in late 18th century, classical revival, romantic, realistic, impressionistic, 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 3 cr in art history; offered 1967-68 and alt yrs; McNally

The 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 #; Thomas, Waldfoegel

176 Twentieth-Century Painting

3 cr; Simon

L'art nouveau, Fauvism, cubism, futurism, Orphism and School of Paris, Matisse, Picasso, Braque, Gris, Léger, Boccioni, Rousseau, de Chirico, etc.

177 Twentieth-Century Painting

3 cr; Simon

Jugendstil, Austrian expressionism, Bridge group, Blue Rider group, new objectivity,

and de Stijl. Kokoschka, Schiele, Kirchner, Schmidt-Rottluff, Nolde, Kandinsky, Marc, Klee, Beckmann, Mondrian, van Doesberg, Grosz, etc.

178 Twentieth-Century Painting

3 cr; Simon

Pre-Dada, Dada, surrealism, abstract expressionism, COBRA group, hard edge, the new realism, and pop art; Duchamp, Picabia, Arp, Ernst, Dali, Miro, Hofmann, de Kooning, Pollock, de Stael, Dubuffet, etc.

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; Amberg

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 2, 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, #; art history staff

199 Methodology of History of Art

3 cr; prereq art history major or grad, jr, sr, grad, #; art history staff

Analysis of types of art history and tools of research, of bibliography, style, and iconography.

Studio

LOWER DIVISION COURSES

10f,w,s Photography

3 cr; Downs, Liebling, Wilcox

Introduction to the photographic medium, its background and meaning today. Lectures in contemporary and historical use of photography. Problems in use of camera, printing, and enlarging.

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

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

20 Basic Drawing

3 cr; prereq 1 or #1

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

23 Drawing and Painting

3 cr; prereq 20

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

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 Art 23; serves as a bridge between Lower Division drawing courses

and Upper Division painting, printmaking, and other courses where color is used.

23Af Drawing and Painting I
2 cr; for architects only

24Aw Drawing and Painting I
2 cr; for architects only

25As Drawing and Painting I
2 cr; for architects only

32f,w,s Elements of Printmaking
3 cr; Myers

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; Myers

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

UPPER DIVISION COURSES

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

51f,w,s Drawing

3 cr; prereq 23; Quirt, Busa, Rowan
From the model, still life, and nature. Principles of anatomy.

54f,w,s Drawing

3 cr; prereq 51; Quirt, Busa, Rowan
From the model, still life, and nature. Principles of anatomy.

55f,w,s Drawing

3 cr; prereq 54; Quirt, Busa, Rowan
From the model, still life, and nature. Principles of anatomy.

60A-61A-62Af,w,s Drawing and Painting II
2-2-2 cr; for architects; prereq 25A

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

2-2-2 cr; prereq 20, or equiv, with #
Introduction to transparent water color, gouache, casein, and tempera. General course introducing student to various drawing and painting mediums. Figure, still life, landscape, and abstract design.

65 Commercial Design

3 cr; 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.

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

3-3-3 cr; prereq 55 or #; Quirt, Busa, Rowan
Introduction to medium of oil; individual projects and instruction.

40 Basic Sculpture I

3 cr; prereq 1, ¶41; Nash, Randell
Beginning course. Intensive study of structure in nature with emphasis on accurate observation. Construction in metal and plaster.

41 Basic Sculpture I

3 cr; prereq 40; Nash, Randell
Integrates basic principles examined in Art 40. Natural form studied for sculptural possibilities. A more imaginative approach to study of nature is encouraged.

42 Basic Sculpture I

3 cr; prereq 41; Nash, Randell
Clay and plaster modeling from life.

45f,w,s Ceramic Processes

3 cr; MacKenzie
Introduction to building pottery by hand and forming on the potter's wheel. Experiments with decorative techniques on wet clay and on bisque-fired pottery. Primarily concerned with pottery as a creative expression but includes technical considerations of clays, glazes, and kilns.

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 and Constructions

3 cr; prereq 41; Nash, Randell
Attention given to 20th-century tools and equipment.

80B Direct Carving in Stone and Wood

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

80C Metal Casting of Sculpture

3 cr; prereq 42; Randell
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 in Relation to Architecture

3 cr; prereq 80ABC; Nash, Randell

42 / Course Offerings and Major Requirements

- 81B Carving, Modeling, and Assemblage of Sculpture Relating to Civic and Private Monuments and Buildings**
3 cr; prereq 80ABC; Nash
- 81C Problems Concerned with Cast Metal Sculpture for Landscape Architecture**
3 cr; prereq 80ABC; Randell
- 82A Experimental Work in Direct Metal**
3 cr; prereq 81A; Nash, Randell
Class problems are assigned.
- 82B Experimental Work in Carving, Modeling, and Assemblage**
3 cr; prereq 81B; Nash
Class problems are assigned.
- 82C Experimental Work in Cast Metals**
3 cr; prereq 81C; Randell
Class problems are assigned.
- 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 the visual environment, and photographer's responsibilities in this use.
- 90-91-92f,w,s Printmaking, Intaglio Processes**
3-3-3 cr; prereq 32 or #; Myers
- 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.
- 120-121-122f,w,s Advanced Drawing**
3-3-3 cr; primarily for painting majors; prereq 55 or equiv; studio staff
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 Lithography**
3-3-3 cr; prereq 32 or #; Priede
Introduction to lithography—planographic methods.
- 150-151-152f,w,s Problems in Painting**
3-3-3 cr; prereq 72 and #; Quirt, Busa, Rowan
- 180ABC,181ABC,182ABCf,w,s Sculpture IV**
3,3,3 cr; prereq total of 9 cr numbered 81 or above; Nash, Randell
Advanced work in wood, stone, plaster, metal, and other materials of sculpture. Students work individually on projects.
- 183 Proseminar: Twentieth-Century Art Theories**
3 cr; prereq sr, 152, and #; Myers, Quirt, 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 advance problems involved in appropriate mediums. Staff and students request means to present verbal and theoretical information in addition to practice.
- 190-191-192f,w,s Advanced Printmaking—Intaglio Processes**
3-3-3 cr; prereq 92 or #; Myers
- 193f,w,s-194f,w,s-195f,w,s Advanced Problems in Studio**
3-3-3 cr; prereq #; graduate studio staff
Individual projects and guidance.

Astronomy (Ast)/Institute of Technology

● 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 credits 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

11f,w,s Descriptive Astronomy

5 cr, §51; Luyten, Kaufmanis
Brief survey of what is known about sun, moon, planets, and their motions, followed

by description of the constellations and summary of our knowledge of stellar universe. Course is completely nonmathematical.

UPPER DIVISION COURSES

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

51w General Astronomy

3 cr, §11; prereq Math T; Luyten
Outline of our knowledge of planetary system and its motions.

Brief discussion of physical properties of the stars.

53s Stellar Astronomy

3 cr; prereq Math 42 and Ast 11 or Phys 9; Luyten

Brief discussion of observational appearance, properties, and motions of constituents of stellar universe.

52w Astrophysics

4 cr; prereq Math 42 and Phys 50; Luyten

Belgian/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

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

51w-52s Introduction to Biochemistry

4-4 cr; prereq OrCh 42 or 62 or §; students with grade of A or B in Biol 60 and 61 may be exempted from BioC 51; 3 lect, 3 lab hrs per wk; Henderson, Schultze

Fundamentals of the composition, chemical properties, reactions and interactions of biological materials; these are illustrated in part through laboratory exercises.

99f,w,s Undergraduate Research

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

141f-142w General Biochemistry (same as MdBc 141-142)

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 §; Liener, Kirkwood

Course offered jointly by the Departments of Biochemistry. Integrated series of lectures on chemical nature, properties, and biochemical reactions of components of biological systems.

98f,w,s Undergraduate Seminar

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

44 / Course Offerings and Major Requirements

143s Metabolic Reactions

3 cr; prereq 142 and ‡; Gander
Biochemistry of intermediary metabolism.

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 and MdBc 141-142 except with permission of department heads.

151w-152s Introduction to Biochemistry

4-4 cr; prereq OrCh 42 or 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, Genetics, and Zoology

● Major Sequence in Arts College—

Prerequisites:

- A. Math through 23 or 44
- B. GeCh 4-5-6 or equivalent
- C. OrCh 61-62
- D. Phys 4-5-6 or 7-8-9

Requirements:

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

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

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 and 1A-2A.

LOWER DIVISION COURSES

1f,w,s-2f,w,s† General Biology

5-5† cr

Introduction to living things both plant and animal, and to major biological concepts. Structure, function, classification, and evolution of organisms.

1Af,w,s-2Af,w,s† General Biology

3-4† cr; does not satisfy lab science requirement of Arts College

Introduction to living things and the major biological concepts. Terminal course primarily for nonmajors and students not pur-

suating a preprofessional program related to the biological sciences.

2Hf,w,s General Biology

5 cr; prereq grade of A or B in 1
Honors course.

49 Principles of Biology

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

UPPER DIVISION COURSES

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

50 Animal Biology

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

A survey of the types of animals, with emphasis on the 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, emphasizing adaptations that have evolved in various groups of plants providing suitable means of support, transport of materials, nutrition, and reproduction; evolution and diversity of plant life.

52 Microbiology

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

Lectures and laboratory exercises in taxonomy, anatomy, physiology, biochemistry, and ecology of microbes. Emphasis is on the fundamental properties of bacteria. Lectures also include descriptions of the major groups of the bacteria as well as of the remaining protista.

60 Biochemistry

4 cr; prereq OrCh 62 and Biol 49 or 2

Introduction to the biochemistry and biophysics of cells with emphasis on enzyme catalysis, cellular energetics, biosynthesis of cellular constituents, and cellular regulatory mechanisms.

61 Laboratory in Biochemistry

1 cr; prereq 60 or ¶60

70 Genetics

3 cr; prereq 50, 51, 52, and 60, or equiv

Introduction: principles and mechanisms of heredity, with emphasis on the structure and

functioning of the genetic material and its relation to breeding behavior, development, and population structure in procaryotic and eucaryotic organisms.

71 Laboratory in Genetics

2 cr; prereq 70 or Gen 66 or ¶Biol 70 or ¶Gen 66

80 Ecology

3 cr; prereq Math 44 or 23, Biol 70, or ¶

Interrelations of environmental influences and individual organisms; population growth and regulation; the nature, organization, and development of ecological systems. The role of modern man in the biosphere.

81 Laboratory in Ecology

1 cr; prereq 80 or ¶80

82 Field Biology

1 cr; prereq 50 and 51

Field trips stressing local habitat types and instruments used in ecological research.

110 General Physiology

3 cr; prereq Math 44 or 23, Biol 50, 51, 52, 60, and Phys 9 or equiv

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

111 Laboratory in General Physiology

2 cr; prereq 110 or ¶110

120 Developmental Biology

3 cr; prereq 70 and 110

The study of developing systems and of the control mechanisms of development, from the molecule to the organism.

121 Laboratory in Developmental Biology

2 cr; prereq 120 or ¶120

Biostatistics/see Public Health

Botany (Bot)/College of Biological Sciences

● Major Sequence in Arts College—

Prerequisites:

Biol 1-2 or equivalent

46 / Course Offerings and Major Requirements

Requirements:

- A. One course from each of five of the following six groups:
- Group A (ecology)—Bot 130 or 135su or Biol 80 and 81
 - Group B (physiology)—Bot 91 and 91A or 141 and 141A (or old Bot 51, 61, or 140)
 - Group C (taxonomy)—Bot 52 or 116su
 - Group D (anatomy or cytology)—Bot 53 or 118 or 121
 - Group E (plant kingdom)—Bot 104
 - Group F (genetics)—Agro 30 or Biol 70 and 71
- B. Two quarters of general chemistry, e.g., GeCh 4, 5
Two quarters of organic chemistry (OrCh 61-62)
Math 40
German through Ger 3

Recommended electives:

- Bot 10, 12
- PLPa 56
- MicB 112, 53
- Phys 1-2-3 and 1A-2A-3A or 4-5-6 or 7-8-9
- French through Fren 3
- PubH 110, 111
- Zool 96
- Geo 11, 22

Students interested in a major in botany after the spring quarter of 1967 are referred to the *Bulletin of the College of Biological Sciences*.

Honors Program: Botany Majors—Obtain information in the Botany office.

College of Education—For specialized curriculum in biological science see the *Bulletin of the College of Education*.

General Education—The following courses in biology and botany, recommended for their broad educational values, are available to nonmajor students: Biol 1-2, and 1A-2A; Bot 10, 12.

LOWER DIVISION COURSES

See also listings under Biology

10s** Minnesota Plant Life

3 cr; suitable for nonmajors; Morley

Nontechnical survey of all the groups of plants native to Minnesota; special reference to identification and distribution.

12w** Plants Useful to Man

4 cr; for majors or nonmajors; Lawrence

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

** This course does not satisfy any part of the laboratory science requirement of the Arts College.

UPPER DIVISION COURSES

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

52f,s Elementary Taxonomy

3 cr; prereq Biol 2 or 51; 2 or 3 field trips; Morley

Introduction to taxonomy of ferns and flowering plants; 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.

53w Plant Anatomy

5 cr; prereq Biol 2 or 51; Hall

Structure and development of plants; special reference to vascular plants.

55f Morphological Methods

3 or 5 cr; prereq 53 and #; Abbe, Honold

Introduction to techniques basic to anatomy, morphology, and cytology.

PIPa 56f Introduction to Study of Fungi
(see *Agriculture and Forestry Bulletin*)**61 Introductory Plant Physiology** (see Bot 91 and 91A)**91f,s Survey of Plant Physiology**

3 cr; prereq Biol 2 or 51, GeCh 5 or 25; Soulen, Linck, and staff

Physiological principles underlying processes that occur in living plants; 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

To accompany Bot 91.

98f,w,s Undergraduate Proseminar

1 cr per qtr; prereq major in a biological science, #; staff

A discussion of biological topics of current interest.

99f,w,s Research Problems

1-5 cr per qtr; prereq major in a biological science, #; staff

Individual research for undergraduate majors.

101f,w,s Basic Botany

Cr ar; prereq Biol 2 or equiv and #; staff

Individual work in some special discipline.

103f Plant Embryology

3 cr; prereq 104 or #; offered when feasible; Abbe

Early stages of somatic development; emphasis on vascular plants.

104f Survey of Plant Kingdom

5 cr; prereq Biol 2 or 51; Abbe

Brief consideration of evolutionary relationships throughout the plant kingdom, especially as illustrated by life histories.

106w Survey of Angiosperm Families

5 cr; prereq 52 or #; offered 1967-68 and alt yrs; Morley

Detailed study of characteristics of orders and families of flowering plants on a worldwide basis.

108f Pteridophytes

3 cr; prereq 52 or #; offered 1967-68 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 1966-67 and alt yrs; Ownbey

Survey of taxonomy and phylogeny of gymnosperms; emphasis on living representatives.

MicB 112w General Mycology

3 cr; prereq MicB 53 or #; Bradley

112su Aquatic Flowering Plants

5 cr; prereq 52 or equiv or #; offered only at Itasca biological station

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 #; field trips; Ownbey

Vascular plants of the state; taxonomic and floristic relationships; geographical distribution and variation; speciation; collecting and identification.

116su Summer Flora of Minnesota

5 cr; prereq 52 or equiv or #

Survey: 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; prereq 10 cr in biology, botany or zoology, elementary genetics or #; Dahl, Van't Hof

48 / Course Offerings and Major Requirements

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, cytotaxonomy, and cytochemistry.

119w Experimental Cytology

3 or 5 cr; prereq 118 or Zool 272; Van't Hof

Discussion and experimental analysis of suitable, current, specialized phases of cytology. Use of microscopic 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.

125f Morphogenesis

5 cr; prereq 10 cr in botany or biology; offered when feasible; Abbe

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

126f Pre-Pleistocene Palynology

3 cr; prereq 165; offered 1966-67 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 ♯; offered when feasible; 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 the late Paleozoic.

Geol 128 Linnology (see Institute of Technology bulletin)

129f Floristic Paleobotany

3 cr; prereq ♯; offered 1967-68 and alt yrs; Hall

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

130f Ecology of Plant Communities

5 cr; prereq Biol 80; Reiners

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 ♯; Reiners

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 1967-68 and alt yrs; Lawrence, Cushing

Ecological principles of plant distribution and landscape analysis, vegetation regions of North America, historical interpretation of regional vegetation patterns.

135su Ecology of the Itasca Region

5 cr; prereq Biol 80 or ♯; offered only at Itasca biological station

Plant communities represented in Itasca Park and vicinity and their dynamic relationships. Also relationships of local communities to vegetation of Minnesota as a whole. Use of modern methods of vegetational analysis and measurement of environmental factors.

137s Ecological Life Histories of Plants

5 cr; prereq Biol 51, 80, 81, 91, 91A and ♯; offered 1968-69 and alt yrs; weekly half-day field trips; Lawrence

Influence of environmental factors on each developmental stage of life cycle under natural conditions. Emphasis on experimentation in nature. Individual species assigned for study at Cedar Creek Natural History Area.

138w Freshwater and Wetland Ecology

5 cr; prereq 15 cr in biology subjects, introductory chemistry, or ♯...Biol 80 recommended; Gorham

Nature, origin, and development of lake, marsh, swamp, and bog ecosystems, with reference to environmental control and to productivity.

139s Paleocology

3 cr; prereq 8 cr in geology, Biol 80, or ♯; offered 1966-67 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 the geologic column and from various groups of organisms.

141s Survey of Plant Physiology

3 cr; prereq Biol 2 or 51, course in organic chemistry, physics; Frenkel

Critical study of physiological processes that 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
To accompany Bot 141.

150f Introduction to Study of Algae

5 cr; prereq 10 cr in botany or biology or #; offered 1966-67 and alt yrs; Brook Structure, reproduction, and life histories of major algal divisions.

151f Biology of Algae

5 cr; prereq 150 or #; offered 1967-68 and alt yrs; Brook Aspects of the biology of algae, dealing with their culture, cytology, and ecology, and their importance in limnology, fisheries, public health, and water supplies.

152su Ecology of Freshwater Algae

5 cr; prereq 150 or 155 or #; offered only at Itasca biological station Aspects of algal ecology in lakes and ponds with special reference to phytoplankton, benthos and periphyton; also in streams, bogs, soils, and other terrestrial habitats. Laboratory instruction in relevant research techniques.

155su Freshwater Algae

5 cr; prereq 10 cr in biology or #; offered only at Itasca biological station 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 only at Itasca biological station Field and laboratory study of mosses and liverworts of Minnesota.

158su Theory and Practice in Environmental Measurement

5 cr; prereq college physics, ecology, or physiology; offered only at Itasca biological station Physical factors of environment emphasizing energy budget, water budget, and microclimatic variation. Modern field instrumentation stressed.

159su Lichens

5 cr; prereq 10 cr botany or zoology or #; offered only at Itasca biological station Taxonomy, ecology, and floristics of the lichens of northern Minnesota; identification; sampling methods, microchemistry as a taxonomic tool.

165w Introduction to Pollen Analysis

3 cr; prereq 10 cr in botany or biology and #; offered 1966-67 and alt yrs; Dahl Ontogeny, comparative morphology, and identification of pollen grains; preparation of reference collections, applications of pollen analysis to allergology, ecology, and phylogeny; practice in atmospheric analysis.

166s Introduction to Palynological Analysis

5 cr; prereq 165 or #; offered 1967-68 and alt yrs; Dahl Application of techniques of pollen-spore investigations to research analyses of at-

mosphere, recent and ancient deposits, systematic materials, allergology, etc.

Phcg 165f Basic Application of Radionuclides (see Pharmacy bulletin)**Phcg 166f Basic Laboratory Course in Radionuclide Techniques (see Pharmacy bulletin)****169f Quaternary Phytogeography**

4 cr; prereq 165 and Biol 80, or #; offered 1967-68 and alt yrs; Cushing Historical problems in interpreting the distribution of modern plant species. Applications of Pleistocene and recent pollen and plant macrofossil analysis to phytogeography. Field and laboratory methods.

182f Plant Physiology

3 cr; prereq Biol 60 or equiv; Soulen, Olson The 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 staff 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 staff Growth of higher plants, including regulation by hormones, light, and temperature.

185w Physiology of Photosynthetic Microorganisms

3 or 5 cr; prereq #; offered 1966-67 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 staff Laboratory course dealing with measurements using intact plants, including water balance, plant-radiation interactions, and gas exchange between plants and the environment.

187f Methods of Plant Analysis

1-4 cr; prereq AnCh 57A-B, 8 cr in biochemistry, and #; Weiser and staff Laboratory course dealing with techniques of sample preparation, fractionation of plant material, and isolation and determination of compounds occurring in plants.

50 / Course Offerings and Major Requirements

188f,w,s Research Perspectives in Plant Physiology

1-4 cr; prereq $\mathbb{2}$; Behrens and staff

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 68).

Students electing a minor in business administration are urged to include Acct 24-25-26 and QA 5.

LOWER DIVISION COURSES

QA 5f,w,s Elements of Statistics

4 cr, §QA 151, §Soc 45, §Psy 70; prereq Math 10 or equiv

Sources and collection of data; tabular and graphic presentation; frequency distribution; probability; sampling; introduction to statistical estimation and decision-making.

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 a tool of business management.

OMgt 32f,w,s Beginning Typewriting

1 cr

Correct techniques; arrangement of type-written material in basic letter forms, manuscripts, and simple tabulations.

OMgt 33w,s Intermediate Typewriting

1 cr; prereq 32 or 1 yr high school typewriting with speed of 30 words per min

Knowledge and skills in letter arrangement; envelopes; carbons; tabulations; manuscripts; speed building.

OMgt 34f,s Typewriting Procedures

2 cr; prereq soph, 33 or 2 yrs high school typewriting with speed of 45 words per min

Machine transcription; operation of electric typewriters and duplicating machines; footnotes, bibliographies, proofreading, manuscripts; legal documents and office forms; tabulations.

OMgt 36f Office Procedures

3 cr; prereq soph

Editing and revising correspondence; communications; basic indexing and filing problems; intra-office relationships.

OMgt 37f-38w-39s Shorthand

3-3-3 cr; prereq soph, 33 for 37, 34 or §34 for 39; students who have 1 yr high school shorthand are admitted to 38; students who have 2 yrs high school shorthand are admitted to 39

Elementary course in Gregg Shorthand Simplified. A large vocabulary of high-frequency words is developed. Emphasis on transcription of mailable letters.

UPPER DIVISION COURSES

Upper Division courses in business administration are open only to Upper Division students, with the exception of QA 51 which may be taken as soon as QA 5 has been completed.

Prod 50f,w,s Production Management

3 cr, §Prod 150; prereq Econ 2 or equiv
Techniques, managerial problems, and decision-making processes in planning and controlling production activity. Production as a function of the enterprise rather than as a strictly manufacturing activity. Research and development, the role of stand-

ards, physical facilities, systems and procedures analysis, work measurement, materials control, quality control, and production planning and control.

QA 51f,w,s Business Statistics

3 cr; prereq soph with Δ , 5 or equiv

Basic concepts of regression and correlation; statistical estimation and decision-making,

applications to survey sampling, acceptance sampling and statistical quality control; time series analysis and index numbers.

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; an economic approach and analysis. Application and conservation of human resources in employment, related social and economic problems. Labor marketing, collective bargaining, unions and employer associations, industrial unrest and conflict, employment and unemployment, wage problems.

Ins 53f,w,s Risk Management and Insurance

3 cr, §Ins 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; assumption, loss prevention, transfer, and others with emphasis on insurance. Design and implementation of the optimum risk management program. Government regulation of insurance.

Tran 54f,w,s Fundamentals of Transportation

3 cr, §Tran 154; prereq Econ 2 or equiv

Organization and economic aspects of transportation system of United States including rail, highway, air, pipeline, and water. Nature of transportation function in business. Regulatory problems. Current developments and problems.

BFin 56f,w,s Corporation Finance

3 cr, §BFin 156; prereq Acct 26

Principles governing the planning, raising, and control of short- and long-term funds for a business enterprise. Cash-flow, valuation, capital structures, investment banking,

dividend policy, mergers, and reorganization.

Mktg 57f,w,s Principles of Marketing

3 cr, §Mktg 157; prereq Econ 2 or equiv; 2 lect, 2 quiz sections per wk

Marketing functions and institutions. Channels of distribution. Retail and wholesale trade. Pricing policies and practices. Marketing policies and methods for consumers' goods, producers' goods, and raw materials.

BLaw 58f,w,s Business Law: Contracts

3 cr, §BLaw 158; prereq Econ 2 or equiv

Law of contracts. Case method.

OMgt 79Af-Bw Administrative Secretarial Studies

3-3 cr; prereq 34, 39

Office situations and problems in work of an administrative assistant to an executive. Office procedures and secretarial dictation and transcription.

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; public and private approaches to prevention, reduction, and resolution of conflicts.

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 and consumer markets. Topics include administered pricing, price behavior, non-price competition, governmental intervention, pricing objectives, organization for pricing, price leadership.

Chemistry/Institute of Technology

● Major Sequence in Arts College—

Prerequisites:

- A. GeCh 24, 25 or their equivalent
- B. Phys 7-8-9 or their equivalent
- C. Mathematics through integral calculus (Math 32 or 44)

Requirements:

- A. OrCh 61-62-63, and 65; InCh 103
- B. AnCh 46, 47, 111
- C. PCh 101A, 102A, 103A with appropriate amount of laboratory in PCh 105A, 106A

52 / Course Offerings and Major Requirements

In addition to the courses required for the major sequence, Arts College students majoring in chemistry are advised to take 8 credits in advanced chemistry (including 2 lab cr). These additional courses will enable the student to meet the minimum requirements set for the Bachelor's degree by the American Chemical Society. Two full years of chemistry are required for admission to these courses.

Students majoring in chemistry are advised to arrange their work so that they can take physical chemistry in the junior year; and they must take sufficient courses in German to acquire a reading knowledge of the chemical literature.

A 4-year professional course in chemistry is available in both the Arts College and IT. As many students find programming a professional course somewhat easier in IT, those interested in chemistry as a major field are advised to see both Arts College and IT bulletins.

To earn a bachelor's degree with a chemistry major in CLA in the regular four-year period, the student is advised to begin the study of German or Russian 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. 117).

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

Analytical Chemistry (AnCh)

LOWER DIVISION COURSES

46w Introduction to Analytical Chemistry I
3 cr; prereq GeCh 5 or 25 or ¶GeCh 5 or 25; to replace AnCh 100 for all students entering fall qtr 1964 and thereafter

Lecture. Equilibria involved in analytical processes. Properties and formation of precipitates. Methods of separation. Introduction to electrochemical methods.

47s Introduction to Analytical Chemistry II
5 cr; prereq 46; to replace AnCh 101 and 102 or 102A for all students entering after fall qtr 1964

Lecture and laboratory. Theoretical fundamentals of volumetric processes in general, including an introduction to physical methods of end point detection.

47Hs Honors Course: Introduction to Analytical Chemistry II
5 cr; prereq 46

UPPER DIVISION COURSES

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

57Af,s Quantitative Analysis
3 cr (no cr until 57B completed); for nonchemistry majors; prereq GeCh 5 or equiv

Survey of modern quantitative methods of analysis. Lecture.

57Bf,s Quantitative Analysis
2 cr; for nonchemistry majors; prereq 57A or ¶57A, GeCh 5 or equiv

Survey of modern quantitative methods of analysis including elementary physicochemical procedures. Laboratory.

96f,97w,98s Senior Thesis
Cr ar; prereq 4th yr; Bruckenstein, Meehan, Sandell, Swofford

103f Qualitative Inorganic Microanalysis
3 cr; prereq 46-47; Sandell
Use of microscope. Technique of handling small amounts of materials. Inorganic qualitative analysis by means of crystal reactions and modern spot reactions.

104f Polarizing Microscope
3 cr; limited to 16; prereq 47 and Phys 3, 6, or 9 or ‡; Sandell

Its use and application to chemistry. Identification of substances.

105s Quantitative Inorganic Microanalysis
3 cr; limited to 16; prereq 46, 47; Sandell

Representative methods of micro- and semi-microanalysis, gravimetric, volumetric, and colorimetric.

106f, 107w, 108s General Technical Analysis

2 or 3 cr per qtr; prereq 46, 47; Sandell
Analysis of commercially important materials such as iron, steel, nonferrous alloys, ores, and glass; use of microscope in technical problems, quantitative analysis of heterogeneous mixtures, particle size determinations.

111f Physicochemical Methods of Analysis
3 cr; prereq 102 or 102A or 47, PCh 101A, ¶103A; Swofford

Lecture. Optical and electrochemical methods and methods of separation.

112w Physicochemical Methods of Analysis
3 cr; prereq 111; Bruckenstein, Swofford
Laboratory course. Quantitative application of electrochemical, optical, and other physical techniques.

113w Physicochemical Methods of Analysis
3 cr; prereq 111; Swofford
Laboratory. A more advanced treatment of material covered in AnCh 112.

115f Advanced Analytical Chemistry
2 cr; prereq 46, 47; Bruckenstein
Condensed review of fundamentals of gravimetric and volumetric analysis.

116s Solution Equilibria
3 cr; prereq 115 and PCh 103A; Bruckenstein

Lecture. Systematic treatment of aqueous and nonaqueous equilibria and principles underlying volumetric endpoint detection techniques.

117w Electrochemical Methods of Analysis
4 cr; prereq 111; Bruckenstein
Lecture. Potentiometric, coulometric, polarographic, and other electrical methods.

118s Electrochemical Methods of Analysis
3 cr; prereq 117; Bruckenstein, Swofford
Laboratory course.

123f Analysis of Complex Materials
1-3 cr; prereq 112; Meehan
Literature study, critical selection and application of fundamentals of analysis to complex materials.

138s Advanced Volumetric Analysis
3 cr; prereq 116

140w Water Analysis
2 cr; prereq 46, 47; Sandell
Analysis of potable water with interpretation of results.

141f-142w-143s Seminar: Modern Problems in Analytical Chemistry
1-1-1 cr; prereq 111; Bruckenstein

General Chemistry (GeCh)

LOWER DIVISION COURSES

4f,w-5w,s General Principles of Chemistry
5-5 cr, §24-25; prereq predicted math GPA 1.9 on ACT; Math Y or Z or college course in algebra or soph; 3 lect, 1 quiz, 1 rec, and 3 lab hrs per wk; Brasted and staff

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.

6f,s Principles of Solution Chemistry
4 cr, §26; prereq 5 or 15 or 25; 3 lect, 4 lab hrs per wk; Brasted and staff

Lecture and laboratory work related to chemistry of selected cations and anions: detection and behavior of these ions; heterogeneous and homogeneous equilibria systems. Attention given to oxidation-reduction systematics, complex ion formation as it relates to aqueous solution chemistry, and

general chemical phenomena interrelated with structure.

24f General Principles of Chemistry
5 cr; 3 lect plus two 3-hr labs per wk
Selected topics: atomic structure, molecular structure, chemical stoichiometry, kinetic theory.

24Hf Honors Course: General Principles of Chemistry
5 cr; prereq #

25w General Principles of Chemistry
3 cr; prereq 24; 2 lect plus one 3-hr lab per wk
Selected topics in chemistry: gas phase chemical equilibrium, chemical kinetics, electrochemistry.

25Hw Honors Course: General Principles of Chemistry
3 cr; prereq 24 or 24H and #

54 / Course Offerings and Major Requirements

Inorganic Chemistry (InCh)

UPPER DIVISION COURSES

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

96f,97w,98s Senior Thesis

Cr ar; prereq 4th yr; staff

103w Inorganic Chemistry I

3 cr; prereq PCh 102A; 3 lect hrs per wk; Conroy

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

104s Inorganic Chemistry II

3 cr; prereq PCh 103A or #; 3 lect hrs per wk; Reynolds

Chemistry of transition metal and rare earth compounds: nomenclature and stereochemistry; thermodynamics and kinetics of complex ion reactions; crystal field, ligand field, molecular orbital, and valence bond descriptions of bonding; solution chemistry of transition elements.

106f Oxidation-Reduction Systematics

3 cr; prereq PCh 101A and #; 3 lect hrs per wk; Hugas

Discussion of the application of tabulated thermodynamic data, including potential diagrams, to the prediction of chemical reactions.

111s Silicon and Related Elements

3 cr; prereq OrCh 62; 3 lect hrs per wk; offered 1966-67 and alt yrs; Johnson

Review of current studies of silicon, germanium, tin, and lead, with emphasis on recent silicon chemistry.

113w Mechanisms of Inorganic Reactions

3 cr; prereq PCh 103A; 3 lect hrs per wk; offered 1967-68 and alt yrs; Reynolds

Discussion of prevalent ideas concerning mechanisms of inorganic oxidation-reduction and substitution reactions.

122s Advanced Inorganic Chemistry Laboratory

2 cr; prereq AnCh 46-47 and PCh 103A; staff

Measurements of equilibria and kinetics of selected inorganic reactions, and advanced synthetic methods.

134f,135w,136s Seminar: Modern Problems in Inorganic Chemistry

1,1,1 cr; prereq PCh 103A, #; staff

Organic Chemistry (OrCh)

UPPER DIVISION COURSES

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

61f,w-62w,s Elementary Organic Chemistry

5-5 cr; prereq GeCh 5 or equiv for 61...61 or 41 for 62; 3 lect, 1 lab conf, 1 quiz, and 4 lab hrs per wk; Dodson, Koelsch, Kreevoy

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

63s Elementary Organic Chemistry

3 cr; prereq 42 or 62; 63 is prereq to all other advanced courses in organic chemistry; 3 lect and 1 quiz hr per wk; Parham, Noland

Continuation of 61-62. Lecture course.

65f Elementary Organic Chemistry Laboratory

4 cr; prereq 63 or #63; 9 lab hrs and 1 conf hr per wk; will replace OrCh 64 in 1966 and will be a prereq to all advanced courses in organic chemistry; offered 1966 and thereafter

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

96f,97w,98s Senior Thesis

Cr ar; prereq 4th yr; any staff member of Division of Organic Chemistry

103f Organic Qualitative Analysis

4 cr; prereq 65 or 102

Advanced course. Instrumental methods.

139w Advanced Organic Chemistry Laboratory Work

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

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

142w Chemistry of Natural Products

3 cr; prereq 63; offered 1967-68 and alt yrs; Leete

Including acetogens, terpenes, alkaloids, biogenesis.

143s Chemistry of Natural Products

3 cr; prereq 63; offered 1966-67 and alt yrs; Dodson

The steroidal hormones, their isolation, proof of structure, synthesis, and action.

144w Heterocyclic Compounds

3 cr; prereq 63; offered 1966-67 and alt yrs; Leete

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

165f Organic Qualitative Analysis

4 cr, §65; prereq 63; to replace OrCh 102 in 1966; offered 1966 and thereafter

Reaction 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.

90f Introduction to Principles of Physical Chemistry

3 cr; prereq Math 10 or equiv and 1 yr general chemistry and MeAg 25 or 1 yr college physics

Designed especially for beginning students of biochemistry.

91,92,93 Special Topics in Physical Chemistry

2,2,2 cr; prereq 103A or 104A or 108

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

96f,97w,98s Senior Thesis

Cr ar; prereq 4th yr; staff

101Af Physical Chemistry4 cr; prereq 1 yr college chemistry, Phys 9 or 6 with Δ , Math 32 or 44

Basic thermodynamics.

102Aw Physical Chemistry4 cr; prereq 1 yr college chemistry, Phys 9 or 6 with Δ , Math 32 or 44

Atomic and molecular structure.

103As Physical Chemistry

4 cr; prereq 101A

Electrochemistry, theory of liquid and solid states.

104As Physical Chemistry

4 cr; prereq 101A and 102A

Statistical mechanics and reaction kinetics.

105Af,w,s Physical Chemistry Laboratory

1, 2, or 3 cr; prereq 101A or 108

106Af,w,s Physical Chemistry Laboratory

1, 2, or 3 cr; prereq 105A, 103A or 108

107f-108w Physical Chemistry

3-3 cr; prereq 1 yr college chemistry,

Phys 9 or Phys 6 with Δ , Math 32 or 44
Brief general survey.**111 Thermodynamics**

2 cr; prereq 101A; offered 1967-68 and alt yrs; Livingston

Application of principles of thermodynamics to chemical phenomena including those occurring in solutions of electrolytes.

112w Atomic and Molecular Structure

3 cr; prereq 103A; Wertz

Experimental viewpoint.

113s Quantum Mechanics

3 cr; prereq 112 or equiv; Wertz

Applications to molecular structure. Theory of the chemical bond.

114f Physical Chemistry

4 cr; prereq 101A, 103A

Principles of classical thermodynamics.

115w Physical Chemistry

4 cr; prereq 104A

Statistical mechanics and kinetic theory.

116s Physical Chemistry

4 cr; prereq 115

Statistical mechanics, kinetic theory and application to theories of reaction rates.

117s Fundamentals of Reaction Kinetics

3 cr; prereq 103A; Livingston

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

127w Physical Chemistry of High Polymers

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

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

56 / Course Offerings and Major Requirements

128 Colloid and Surface Chemistry
3 cr; prereq 103A; offered 1966-67 and
alt yrs; Prager

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

Biochemistry/College of Agriculture, Forestry, and Home Economics

Students in the Arts College may elect courses in biochemistry by arrangement with the department and the Arts College Scholastic Committee. See the *Agriculture and Forestry Bulletin*.

Child Psychology (CPsy)

● Major Sequence in Arts College—

Prerequisites:

- A. Psy 1-2, 4-5
- B. Upper Division standing

Requirements: (Upper Division)

- A. CPsy 80, 81, 125 or 126 or 127
- B. A minimum of 24 and a maximum of 30 credits in child psychology courses (including Psy 70) are required

Allied field: 9 Upper Division credits 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 CLA requirement of 15 Upper Division credits 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, as well as a broad background in biological and social sciences.

Honors Program—Undergraduates majoring 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 the *Bulletin of the College of Education*.

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 and C avg in Psy 1-2; 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 §; staff

81f,w,s Adolescent Psychology

3 cr; prereq Psy 2; Goldin, Flavell, Hill, Malmquist
Social, physical, mental, emotional, and personality development during adolescence.

88s Children in Society

3 cr; prereq 80 and §; Hill
Consideration of socio-economic and cross-cultural influences on child development.

89w Psychology of Parent-Child Relationships

3 cr; prereq 80; Hill
Discussion of parent-child relationships and family situations. Evaluation of relevant research literature.

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 the College of Education; not open to students who have received cr for 81; prereq sr, 12 cr in educational psychology or psychology or sociology or home economics; Roff
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 the 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.

180f Personality Development

3 cr; prereq 80; Hill
Development of personality in children. Emphasis on psychoanalytic and behavior theory formulations and related research literature.

181w Social Development

3 cr; prereq 80; Hartup
Family and 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.

190f,w,s Topics in Child Psychology

Cr ar; prereq §; staff
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 the following special requirements:

58 / Course Offerings and Major Requirements

A. For *cum laude*

1. Elect at least 1 quarter of 95H,96H,97H in the major language
2. Elect at least 1 year in the second classical language

B. For *magna cum laude*

1. Elect at least 2 quarters of 95H,96H,97H in the major language
2. Elect at least 1 year in the second classical language
3. Pass a comprehensive written or oral examination or submit an acceptable honors paper

C. For *summa cum laude*

1. Elect 95H,96H,97H in the major language
2. Elect at least 1 year in the second classical language
3. Elect a college seminar
4. Pass a comprehensive written or oral examination
5. Submit an acceptable summa thesis (college requirement)

General Education—For a broad background in ancient Greece and Rome and their importance today, the Classics Department recommends the following courses: Clas 1, 2, 3; 4, 5, 6; 80/180, 81/181, 82/182; 90/190, 91/191, 92/192 (see descriptions on p. 62).

Greek (Grk)

● Major Sequences in Arts College—

Requirements: (A, B, or C)

- A. (Recommended with Latin minor) 27 credits in Greek courses numbered 60 and above
- B.
 1. 18 credits in Greek courses numbered 60 and above
 2. 9 credits in Latin courses numbered 50 and above
- C.
 1. 18 credits in Greek courses numbered 60 and above
 2. 6 credits from courses listed under "Classics" (see p. 62)
 3. 6 credits 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—

- A. 18 credits in Greek courses numbered 50 and above
- B. (Not open to Latin majors)
 1. 12 credits in Greek courses numbered 50 and above
 2. 9 credits in Latin courses numbered 50 and above

- C. 1. 12 credits in Greek courses numbered 50 and above
 2. 9 credits from courses listed under Classics (see p. 62) and/or from courses pertinent to classical studies offered in other departments or programs (see examples above, under Greek, Major Sequences, part C)

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 structure of the language in context of graded reading materials. Before end of second quarter, students are reading selections from the

New Testament, Aesop, Xenophon, and Plato. Considerable stress on audio-lingual techniques and on composition.

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; Molitor

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

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.

61f Plato: Selections

3 cr; prereq 3 or equiv

62w Greek Tragic Drama

3 cr; prereq 3 or equiv

63s Homer

3 cr; prereq 3 or equiv

73s Hellenistic Greek

3 cr; prereq Δ

The Koiné language used in the *New Testament*, the papyri, and other documents from the third century B.C. to the second century A.D.

101 Structure of Greek

3 cr; prereq 2 yrs Greek and Clas 56; offered 1966-67; D Swanson

Application of descriptive linguistic principles to the Greek language; emphasis on morpheme and tagmeme identification, structuralization of data, linguistic and statistical patterns.

81 Oratory

3 cr; prereq 63 or equiv; staff

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

111 Advanced Prose Composition

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

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

3,3,3 cr; prereq Δ

Meets with 61, 62, 63, but students will do additional work for advanced credit.

82 Lyric Poetry

3 cr; prereq 63 or equiv; staff

Selections from lyric poets: Pindar, Simonides, Sappho, Alcaeus, Archilochus, Anacreon.

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.

83 History

3 cr; prereq 63 or equiv; staff

Selections from Herodotus, Thucydides, or Xenophon.

174A: Oratory

C: Comedy

B: Tragedy

D: Directed reading

95Hf,96Hw,97Hs Honors Tutorial

3,3,3 cr; prereq Δ

176A: History

C: Geography

B: Philosophy

D: Directed reading

100 Craft and Context of Translation

3 cr; prereq 63 or §; offered 1967-68 and alt yrs

178A: Epic

C: Romance

B: Lyric

D: Directed reading

60 / Course Offerings and Major Requirements

194f Proseminar: Introduction to Classical Studies

3 cr, §Lat 194; prereq grad major or §; Swanson
Survey of fields of research in classical

scholarship, methods, bibliography, textual history, and criticism.

For graduate courses in Greek see Graduate bulletin.

Latin (Lat)

● Major Sequences in Arts College—

Requirements: (A, B, or C)

- A. (Recommended with Greek minor) 27 credits in Latin courses numbered 60 and above
- B. 1. 18 credits in Latin courses numbered 60 and above
2. 9 credits in Greek courses numbered 50 and above
- C. 1. 18 credits in Latin courses numbered 60 and above
2. 6 credits from courses listed under Classics (see p. 62)
3. 6 credits 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—

- A. 18 credits in Latin courses numbered 50 and above
- B. (Not open to Greek majors)
 1. 12 credits in Latin courses numbered 50 and above
 2. 9 credits in Greek courses numbered 50 and above
- C. 1. 12 credits in Latin courses numbered 50 and above
2. 9 credits from courses listed under Classics (see p. 62) and/or from courses pertinent to classical studies offered in other departments or programs (see examples above, under Latin, Major Sequences, part C)

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

Recommendations for Major: Lat 61, 62, 63, 73, 101, 6 credits from 174A-D, 176A-D, 178A-D, Clas 56, and 6 credits in classics courses or in courses pertinent to classical studies offered in other departments or programs (see examples above, under Latin major sequences, part C).

Recommendations for Minor: Lat 61, 62, 63, 73, Clas 56, and 6 additional credits in classics or in courses pertinent to classical studies offered in other departments or programs (see examples above, under Latin major sequences, part C).

LOWER DIVISION COURSES

1f,2w,3s Beginning Latin
5,5,5 cr

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

3Xf,4Xw Intermediate Latin

5,5 cr; prereq 3, or 2 yrs high school Latin, or equiv, or Δ

For students with two years of high school Latin or equivalent. Both a refresher course and a continuation of previous training. Selections from Caesar, Cicero, 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

An 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 the Roman Republic

Prereq 3 and §, or 2-3 yrs high school Latin and validation-placement test

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 63 or ¶63, or Δ

81 Ovid

3 cr; prereq 63 or equiv; staff

Reading in Ovid (e.g. *Metamorphoses*, *Ars Amatoria*). Poetic analysis.

82 Caesar and Cicero

3 cr; prereq 63 or equiv; staff

Prose of Caesar and Cicero. A study of the men, their styles, and their political activities.

83 Virgil

3 cr; prereq 63 or equiv; staff

Reading and analysis of Virgil's *Aeneid*. Some attention to his *Georgics* and *Eclo-gues*.

95Hf,96Hw,97Hs Homors Tutorial

3,3,3 cr; prereq Δ

100 Craft and Context of Translation

3 cr; prereq 63 or §; offered 1966-67 and alt yrs; DeWitt

Problems of translating the Latin classics for contemporary readers. Examples of translation in previous centuries and today.

Practice in translation with attention to literary skill and meaning.

101f-102w-103s† Structure of Latin

1 to 2 cr per qtr†; prereq sr or grad, 63 or equiv, Clas 56 or equiv, or §; Forbes, Gerald Erickson

Application of linguistic principles to Latin languages; morpheme and tagmeme identification, structuralization of data, linguistic patterns.

111 Advanced Prose Composition

3 cr; prereq 73 or Δ ; offered when feasible

133s Vulgar Latin

3 cr; open to advanced students of Latin or a Romance language and §; offered 1967-68 and alt yrs; D Swanson

Lectures on development of Latin into Romance languages; reading of documents that reveal the lexical, phonological, and syntactic systems of colloquial Latin.

135s Medieval Latin

3 cr; prereq adv students of Latin or §; offered 1966-67 and alt yrs

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

161f,162w,163s Survey of Latin Literature

3,3,3 cr, §corresponding qtrs of 61, 62, 63; prereq Δ

Meets with Lat 61, 62, 63, but students will do additional work for advanced credit.

174A,B,C,D, 176A,B,C,D, 178A,B,C,D Latin 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: History. B: Epistles and essays. C: Oratory. D: Directed reading.

176A: Epic and pastoral poetry. B: Lyric and elegaic poetry. C: Drama. D: Directed reading.

62 / Course Offerings and Major Requirements

178A: Satire. B: Law. C: Patristics. D: Directed reading.

194f Proseminar: Introduction to Classical Studies

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

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

For graduate courses in Latin see Graduate bulletin.

Classics (Clas)

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

LOWER DIVISION COURSES

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

3,3,3 cr

1: The 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 the archaic age. Cultural dynamism and contact with the Near East.

2: The 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 the city-state.

3: The Age of Alexander: Cosmopolitanism and Cultural Fusion

Hellenistic "big government" and rise of individualism. Spread of Greek culture to the Near East. New emphases in literature, philosophy, art, and especially in science and religion.

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

3,3,3 cr; offered 1966-67; alternates with 1, 2, 3

4: The World of Cato

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

5: The World of Augustus

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

6: The World of Constantine

Consolidation and expansion of the empire. The world of Roman law and the rise of Christianity.

42f,w,s Greek and Roman Mythology

2 cr; prereq soph; Forbes, Molitor, Weber

Classical myths; acquaints student with stories of gods, demigods, and heroes which are a basic component of the European cultural heritage, with attention to their artistic, religious, psychological, and anthropological implications.

42A Greek and Roman Mythology

3 cr, §42; prereq soph; Molitor
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 the ancient and modern *ars poetica* (e.g., Horace, Vida, Boileau, Pope, MacLeish).

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

3 cr; prereq soph; Molitor, Weber

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

UPPER DIVISION COURSES

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

56f Elementary Linguistics

3 cr; prereq 1 yr foreign language study on college level or equiv, or #; D Swanson

Introduction to current language science, involving brief history of the field and its methods, summary of the chief language families, basic phonetics of the European languages, how words are made and how they are analyzed, principles of language change, reconstruction of earlier stages in a language from extant dialects, and applications of linguistic science to language teaching and learning.

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

3 cr, §48; prereq jr; Molitor, Weber

Meets with Clas 48, but students will do additional work for Upper Division credit.

80f Classical Epic in Translation

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

Reading of Homer's *Iliad*, *Odyssey*, Virgil's *Aeneid*, with attention to the 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, English beyond C, or foreign literature, or Δ; Sonkowsky

Introductory lectures on origin of European drama as a distinct literary form, on characteristics of Greek tragedy, and ancient theaters and theatrical conventions. Careful discussion of selected tragedies. Major emphasis on understanding the 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; DeWitt

Introductory material organized as in Clas 81, but with emphasis on the 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, English beyond C, or in foreign literature; DeWitt, Weber

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

106w-107s Introduction to Study of Language

3-3 cr; prereq 56 or Δ; D Swanson

106: General and descriptive linguistics; special attention to phonology and morphemic analysis. 107: Historical and comparative linguistics.

108/Spch 108 Classical Voices of Poetry: Epic, Lyric, Dramatic

3 cr, §Spch 108; prereq Spch 82, or Spch 83, or Th 61, or 3 cr in Latin or Greek courses numbered 60 or above, or 3 cr in Upper Division courses in a 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 the 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.

122w Introduction to Greek Archaeology

3 cr; prereq jr or #; McDonald

Methods and techniques of modern field archaeology; chronological development and regional peculiarities of architecture, sculpture, painting, ceramics, and other special fields, from the neolithic period to Roman conquest of the eastern Mediterranean; concentration on major Bronze Age civilizations. Illustrated lectures, readings, and student reports.

123s Introduction to Roman Archaeology

3 cr, §Art 161; McNally

Methods of gathering and interpreting archaeological data, introduced through a survey of major technologies and artistic mediums of the Romans, and a 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.

180f Classical Epic in Translation

3 cr, §80; prereq grad or #; DeWitt

Meets with Clas 80 but students do additional work for advanced credit.

181w Greek Tragedy in Translation

3 cr, §81; prereq grad or #; Sonkowsky

Meets with Clas 81 but students do additional work for advanced credit.

182s Aristophanes and Roman Drama in Translation

3 cr, §82; prereq grad or #; DeWitt

64 / Course Offerings and Major Requirements

Meets with Clas 82 but students do additional work for advanced credit.

190s Proseminar: Classical Archaeology

3 cr; prereq 122, 123, or #; offered when feasible; McDonald
Intensive study of a special problem or period within one of the major archaeological subdivisions such as topography and monuments, epigraphy, sculpture, ceramics,

architecture. Since the content varies from year to year, the course may be repeated for credit.

191f-192w-193s Classical Literary Traditions

3-3-3 cr, §corresponding qtrs of 91, 92, 93; prereq grad or #; offered 1967-68 and alt yrs; DeWitt

Meets with 91, 92, 93 but students will do additional work for advanced credit.

Sanskrit (Skt)

181f-182w-183s Readings in Sanskrit

3-3-3 cr; prereq sr or #

Communication/see Interdisciplinary Programs

Comparative Literature (CLit)

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

Composition/see English

East and South Asian Languages

Graduate courses are offered in East and South Asian Languages. See *Bulletin of the Graduate School* for detailed listing and general program.

Chinese (Chin)

● Major Sequence in Arts College—Chin 51-52-53, 101-102-103, 6 credits from 110-111-112, and 6 credits selected 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 (formerly 3-3-3 cr); prereq 3, ¶3 with 101-102-103

101f-102w-103s Beginning Literary Chinese

3-3-3 cr; designed 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 the language of classical and traditional texts.

105f-106w-107s Introduction to Chinese Linguistics

3-3-3 cr; designed for majors in East Asian languages and for students in linguistics or comparative philology; prereq 103 or Clas 56 or #

Introduction to the history of Chinese, comparison of major dialect variations, and analysis of linguistic structure of modern spoken Mandarin.

110f-111w-112s Chinese Literature in Translation

3-3-3 cr; prereq 9 cr in literature or #; knowledge of Chinese required only of majors, who will read assigned portions in original

110: Survey of artistic writing of the period 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; designed for majors in East Asian languages and students in East Asian area studies; prereq 53 and 103... ¶101-102-103 with #; not offered 1966-67

Individual recitation in class; discussion on style and content; translation projects.

125f,126w,127s Chinese Documents

3,3,3 cr; designed for majors in East Asian languages and East Asian area studies, particularly in history and political sciences; prereq 103 or #

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; not offered 1966-67

Presentation of modern Chinese plays; composition in various styles; formal debate as well as panel discussion of current issues in Chinese.

161f-162w-163s Six Dynasties Literary Texts

2-2-2 cr; designed for majors in East Asian languages and East Asian area studies; prereq 103, offered 1967-68 and alt yrs

Reading of representative prose and poetical works by Ts'ao Chih, Hsi K'ang, T'ao Yüan-

ming, and others of the period A.D. 200-600.

171f-172w-173s Poetry of the T'ang and Sung Periods

2-2-2 cr; designed for majors in East Asian languages and East Asian area studies; prereq 103; offered 1966-67 and alt yrs

Reading of the poetical works of Li Po, Tu Fu, Wang Wei, Po Chu-i, Li Yu, Ouyang Hsiu, Su Tung-p'o, and others.

175f,176w,177s Chinese Literature of the Yüan, Ming, and Ch'ing Periods

3,3,3 cr; designed for majors and minors in East and South Asian languages and East Asian area studies and in comparative literature; prereq 103, 123, or #

175: The 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; designed for students in East and South Asian languages and East Asian area studies; prereq 123; not offered 1966-67

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; designed for students in Chinese literature, Chinese history, Japanese literature, Japanese history, comparative literature, and Chinese art history; prereq 173 or #; not offered 1966-67

Students will study and analyze significant selections from major works of literary criticism. Assigned individual projects for study of the relationship between certain literary theories and other contemporary aesthetic principles and between philosophical doctrines and practice of writers in the field of fiction and drama.

191Hf-192Hw-193Hs Honors Course: Research

1 to 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 a paper, on specific problems in Chinese literature or culture.

Indian (Indn)

● Major Sequence in Arts College—An undergraduate major in Hindi will have to take the following courses. In all, 36 Upper Division and graduate

66 / Course Offerings and Major Requirements

credits are required: Indn 51-52-53, 101-102-103, 105, 121-122-123, 125, 126, 127. One year of Sanskrit is recommended.

First year:

Indn 1-2-3 Beginning Hindi

Second year:

Indn 51-52-53 Intermediate Hindi

Third year:

Indn 101-102-103 Advanced Hindi

Fourth year:

Indn 121-122-123 Readings in Hindi Literature

Indn 125-126-127 Hindi Composition

LOWER DIVISION COURSES

1f-2w-3s Beginning Hindi

5-5-5 cr; class meets seven times per wk; 5 hrs will be with a speaker of Hindi and 2 with a linguist, in addition to assignments at the language lab

10f-11w-12s Beginning Indian Language

5-5-5 cr; the particular language offered (Marathi, Gujarati, Kannada, Urdu, Bengali, etc.) will depend on student need and availability of staff

UPPER DIVISION COURSES

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

51f-52w-53s Intermediate Hindi (54-55-56)

5-5-5 cr; prereq 3 or equiv

Hindi material is read and examined. Drills and exercises based on the material are used to develop a competence in the grammar of the language. Purpose is to provide a sound foundation in the language that can be utilized either for reading or speaking. Emphasis throughout the year is on grammatical proficiency rather than social use of the language.

61f-62w-63s Intermediate Indian Language

3-3-3 cr; prereq 12 or ‡

Parallels Indn 51-52-53 but deals with the language started in 10-11-12.

101f-102w-103s Advanced Hindi

3-3-3 cr; designed for qualified students; prereq Indn 53

Reading short stories and available literature in Hindi. Class work will consist of discussion related to the material.

105f Structure of Hindi

3 cr; prereq Clas 56, Anth 180, or ‡

Linguistically oriented course, examining structure of Hindi. Material presented partly in lecture form and partly as elicited from a speaker of Hindi. Exposition will be highly directed, but laboratory technique will be used to demonstrate and to verify hypotheses about structure of the language.

106w-107s Hindi Linguistics

3-3 cr; designed for students of Hindi with special interest in examining lan-

guage linguistically and students in linguistics or related fields who want to apply a particular grammatical theory to Hindi; prereq some background in linguistics, or ‡

Hindi: phonology, grammatical categories, phrase structure model, and generative model.

110f Survey of Indian Literature

3 cr; prereq 6 cr in literature or 3 cr in courses pertaining to India or ‡; offered 1967-68

Survey of Indian literature from the Vedas to the present.

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

3-3-3 cr; prereq 103

Grammatical and literary difficulties discussed; material selected from novels, literary essays, newspapers, and magazines.

151f-152w-153s Directed Readings

3-3-3 cr; open to students with special interests; prereq 103 or ‡

Advanced-level course for student seeking guidance in reading of specialized material in his field. This could include Lok Sabha reports, etc.

Japanese (Jpn)

● Major Sequence in Arts College—51-52-53, 101-102-103, 6 credits from 110-111-112, and 6 credits selected from courses numbered above 100.

LOWER DIVISION COURSES

1f-2w-3s Beginning Japanese
5-5-5 cr

Lectures on basic Japanese grammar, reading, and translation of text; writing practice in Japanese syllabaries and Chinese

characters, 300 of which are introduced by the end of the 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

101f-102w-103s Advanced Japanese
3-3-3 cr; prereq 53

Continuation of Jpn 51-52-53

105f-106w-107s Introduction to Japanese Linguistics

3-3-3 cr; designed for majors in East Asian languages and students in linguistics or comparative philology; prereq 103 or Clas 56 or #

Structure of modern Japanese, Japanese dialectology, Japanese historical linguistics.

110f-111w-112s Literature in Translation

3-3-3 cr; knowledge of Japanese required only of majors who will read assigned portions in the original; prereq 9 cr in literature

Survey of Japanese literature, 8th century A.D. to present.

121f-122w-123s Readings in Contemporary Japanese Texts

3-3-3 cr; designed 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 the present.

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; designed for majors in East Asian languages and East Asian area studies; prereq Jpn 103; not offered 1966-67

Standard texts and their traditional commentaries used. Secondary studies and translations consulted.

171f-172w-173s Poetry of the Nara and Heian Periods

2-2-2 cr; designed for majors in East Asian languages and East Asian area studies; prereq 103

Reading of standard texts of the Man'yōshū (ca. 759) and the Kokinshū (ca. 905) and traditional commentaries; recent commentaries and modern paraphrases.

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

Oriental (Ortl)

UPPER DIVISION COURSES

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

75f Asian Civilization: India
3 cr; prereq soph with #, jr

76w Asian Civilization: China
3 cr; prereq soph with #, jr

77s Asian Civilization: Japan
3 cr; prereq soph with #, jr

68 / Course Offerings and Major Requirements

Sanskrit (Skt)

51f-52w-53s Beginning Sanskrit

3-3-3 cr; open to fr and soph by #

Introduction to script, introduction to grammar and reading, recitation.

151,152,153 Directed Readings

3,3,3 cr; prereq #

Graduate-level course for students with special needs. Content depends upon individual student needs.

Thai

1f-2w-3s Beginning Thai

5-5-5 cr; not offered 1966-67; Wang

1: Introduction to sounds and basic constructions. 2: Introduction to more compli-

cated constructions; increase in vocabulary. 3: Introduction to Thai script and to reading Thai prose.

Tibetan

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; introduction to Tibetan script and simple Tibetan prose; conversation and reading continued.

Economics (Econ)

Courses offered by this department are intended to serve two purposes: (1) to provide an understanding of how an economy functions and of 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. Potential majors or minors should consult an adviser while freshmen or sophomores.

● Major Sequence in Arts College—

Lower Division requirements: Econ 1-2 or equivalent (6 cr). 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 or statistics is desirable.

Upper Division requirements: Complete one of the following sequences in economic theory before the senior year: Econ 65, 66, 75 or 65T-66T or 165-166.

At least 24 credits in other economics courses labeled Group 2 and Group 3 in this bulletin. Up to 6 credits of Upper Division business administration courses may be used to satisfy part of this requirement

with adviser's consent. At least 12 credits, however, must be taken from Group 3 courses listed below.

Honors in Economics—Departmental approval and a grade point average of at least 3.00 in all courses, and in all economics courses, are mandatory. Successful completion of a comprehensive oral examination and/or a short thesis are required of all honors candidates; ordinarily an honors candidate will take Econ 90H.

For specialized curriculums in economics and social studies, see the *Bulletin of the College of Education*.

GROUP 1 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 a study of economics is useful.

Cs Introduction to Economic Analysis

3 cr, §1, 2, §1T-2T; prereq B; may substitute for Econ 2 as a 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.

If,w,s,2f,w,s† Principles of Economics

3-4 cr ar, 3-4 cr ar†, §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.

1Hf,w,s-2Hf,w,s† Honors Course: Principles of Economics

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

50Af-Bw Economic Problems of the American Economy

3-3 cr, §1, 2, §1T-2T, §B-C; offered 1967-68 and alt yrs

3-4 cr ar, 3-4 cr ar†; 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.

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). Other courses described below are in Group 3.

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 ‡

70 / Course Offerings and Major Requirements

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 1966-67 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 students majoring in economics; 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, the centrally planned economy. Analysis of American and Soviet economies.

170 Economics, Ethics, and Economic Philosophy

3 cr; prereq 2 or equiv; offered when feasible

The literature and issues it raises; relation of ethics to economic organization, practice, and policy. Different economic philosophies; elements involved in formulation of an 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 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.

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 equiv
Introduction to household and welfare theory. Applications of evaluative techniques to various market phenomena and government policies.

135Af-Bw-Cs Foundations of Economic Analysis

3-3-3 cr; prereq 165, 166, Math 43 or equiv
Essentially a 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.

175 Economic Analysis III: Welfare Theory and Policy

3 cr; prereq 185A
Decision problems faced by the household and development of elementary welfare economics; evaluation of various allocative mechanisms and government policies.

176Aw Economic Analysis II: Income Theory

3 cr; prereq 166 or equiv or #
General equilibrium models from which may be determined the 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 the pattern of movements over time of employment, incomes, and prices. Effects of various economic policies upon the magnitude of fluctuations; stability of the economy.

180A,B History of Economic Thought

3,3 cr; prereq 176A, 175 or #

Principal economic writings of the past. Particular theories are related to problems and policies of the times and to contemporary theories. A: Classical economists, Marx, and beginnings of neoclassical economics. B: Development of neoclassical economics through the 1930's. Origins of macro-theory.

185Aw Economic Analysis I: Price Theory

3 cr; prereq 165 or equiv

Theories of choice as applied to consumers, firms, and resource owners, economic behavior in competitive and monopoly market situations.

185Bs Advanced Microeconomics

3 cr; prereq 185A or #

Price and output policies under conditions of imperfect competition. Problems of choice under conditions of uncertainty.

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. Aggregative theories of distribution. "Exploitation" and "maldistribution problems."

195A-B-C Decision-Making and Operations Analysis

3-3-3 cr; prereq 165, Math 43 or equiv or #

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

Econometrics and Statistics**111 Elements of Statistics**

3 cr; prereq Math 10 or #; offered when feasible, summer only

Acquaints the 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, §1R 52; prereq 2 or equiv

Introductory course dealing with role of labor in the economy: labor as a factor of production; population and the labor force; economics of labor markets; labor market institutions; theories of wages and employment; unions and collective bargaining; 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 role of labor in industrial society; origin and growth of labor organizations and other labor market institutions. Economic and social consequences of these developments. Labor's progress and problems.

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. Nature and causes 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.

192 Economics of Collective Bargaining

3 cr; prereq 62, 65, 66, or equiv

Economic analysis of labor markets and their operation under conditions of indi-

72 / Course Offerings and Major Requirements

vidual 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. Topics include: 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 students majoring in economics; 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 the American Economy

3,3 cr; prereq 65, 66 or #; Green

Application 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 a different European country each year.

164 Economy of the U.S.S.R.

3 cr; prereq 2 or equiv

Development of economic organization of the state, planning and control of use of resources, and distribution of product. Performance of the 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 available to students majoring in economics; 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 students majoring in economics; 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 and §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 a 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 1966-67 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; 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.

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.

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 co-ordination 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 the 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.

179Af-Bw Industrial Organization

3-3 cr; prereq 165 or equiv or #; offered 1966-67 and alt yrs

Structure of American industry, past and present; factors influencing industry structure. Theories of the firm and competition; their 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 1967-68 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.

117w,s Basic Principles of Measurement

3 cr; prereq 116 or 216 or Psy 70 or equiv

Role of measurement in educational work; developments in educational and psychological measurement; measurement theory and practice as related to appropriate statistical methods; types and uses of derived scores, factors influencing reliability and validity of educational measurements.

140s Instruments and Techniques of Measurement

3 cr; prereq sr, 110 or 117 or equiv

Intensive study of selected instruments for measuring intelligence, achievement, interests, attitudes, and personality traits; emphasis upon their use in educational guidance, personnel work, administration, and supervision.

English (Engl)

(For courses in freshman English and composition, see page 79)

● Major Sequence in Arts College—

Prerequisites:

Engl 21, 22, 23

Requirements:

- A. Total of at least 31 credits in literature and language for the entire sequence, comprising the following:
 1. Engl 75, Chaucer; 55-56, Shakespeare; 162, Milton
 2. 18 additional credits in Upper Division courses, of which at least 9 must be selected from this list:
 - a. 108, 109, 110 (Romantic Poetry and Prose)
 - b. 126 (Restoration and Eighteenth-Century Drama)
 - c. 136 (Advanced Shakespeare)
 - d. 137, 138, 139 (Victorian Literature)
 - e. 147-148-149 (Middle English Literature)
 - f. 169 (Earlier English Drama)
 - g. 170 (Shakespeare's Later Contemporaries)
 - h. 187, 188, 189 (Eighteenth-Century Literature)
 - i. 194, 195, 196 (Elizabethan Prose and Verse)
 - j. 197, 198, 199 (Seventeenth-Century Literature)

Complete sequences, taken in order, are recommended.

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

Information about honors degrees in English may be obtained at the Upper 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.

LOWER DIVISION COURSES

(For courses in freshman English, see page 79)

21f,w,22w,s,23f,s Introduction to Literature

5,5,5 cr, \$19 for 21; prereq**

Chronological study of English literature with its historical background. Introduction to types of literature and literary ideas. 21: Chaucer, Spenser, Milton, and others. 22: The Restoration and the 18th century. Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan. 23: The romantic movement and the Victorians. Wordsworth, Coleridge, Byron, Shelley, Keats, Carlyle, Tennyson, Browning, and Arnold.

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, 54A; 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,54A The English Novel

3,3,3,3 cr, for 53, \$52 or \$53 before 1959f...for 54, \$53 before 1959f; 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. 54A: Reading of novels by such authors as Forster, Woolf, Mansfield, Waugh, Huxley, and Cary.

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 the 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 the middle and late periods.

60s Introduction to the English Language

3 cr; prereq ††; may not be counted toward a major in English in Arts College except by students taking 34 or more Upper Division cr in English; Allen

How English exemplifies basic concepts of language with respect to inner structure, outer form, time, situation, and user.

66f-67w Literature of the Bible

3-3 cr; prereq ††; O'Brien

Readings in the Old and New Testaments from literary point of view. Selections from the historical narratives, the prophets, psalms, tales, wisdom literature, apocalypse.

72f,w-73w,s-74f,s American Literature

3-3-3 cr, for 72, \$73 before 1958f...for 73, \$74 before 1958f; prereq ††...72 for either 73 or 74, except for Ed minors...or ‡

72: The beginnings through Melville. 73: Whitman through James. 74: Crane to the 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 and American Literature

3,3,3 cr, for 77, \$142...for 78, \$143...for 79, \$144; prereq ††; Youngblood, Reed

Critical survey of major figures; emphasis on basic trends and interrelations of the two literatures.

** Completion of, or exemption from, freshman English requirement.

†† Comp 1-2-3 or Comm 1-2-3 and 5 additional credits; or Engl A-B-C; or 5 credits in 21, 22, 23.

76 / Course Offerings and Major Requirements

Clas 80f Classical Epic in Translation

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

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

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

3 cr, §Clas 181; prereq same as 80

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

3 cr, §182; prereq same as 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

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 the 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 ††; Scoggins

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 ††; Levenson

113s American Short Story

3 cr; prereq ††; Turpie

Historical examination of American short story from 18th century to the present.

120f-121w Interpretation of Poetry

3-3 cr; prereq ††; Tate

Certain technical aspects of poetry in relation to poetic meaning. 120: Analysis of a number of short poems. 121: Emphasis on Coleridge, Housman, Frost, and Eliot.

123f, 124w. Technique of the Novel

3,3 cr; prereq for undergrad, English major with B avg, or †; Unger

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 Eighteenth-Century English Drama

3 cr; prereq 56; Moore

The heroic play, tragedy, comedy of manners, sentimental comedy.

127w Drama from ca. 1880 to ca. 1920

3 cr; prereq 56; Moore

Beginnings of modern realism, naturalism, and expressionism in English and Continental drama.

129s Drama Since ca. 1920

3 cr; prereq 56; Moore

Survey of chief dramatists, English, American, and Continental.

134s Origins of American Naturalism

3 cr; prereq ††; Bowron

136 Advanced Shakespeare

3 cr; prereq 56; O'Brien, McNaron

Special attention to two or three of his later plays; survey of some earlier ones.

137f,138w,139s Victorian Literature

3,3,3 cr; prereq ††; Stange, Joseph

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

The longer poems apart from *The Canterbury Tales*. Treatment primarily literary and historical.

147f-148w-149s Middle English Literature Exclusive of Chaucer

3-3-3 cr; prereq 75 and 100 or †

Leading genres of Middle English literature; some attention to continental traditions and influences. 147: Devotional prose and lyric verse. 148: Religious allegory and the drama. 149: Epic and romance.

154w,155s American Novel

3,3 cr; prereq ††; Bowron

†† Five credits in literature, English or American, exclusive of freshman English.

History of the American novel from the beginning to the present.

156s American Drama

3 cr; prereq ††; Kwiat
Critical survey of American drama; primary emphasis upon American drama from 1914 to present; some attention to historical and cultural background; some representative American plays of 18th, 19th, and early 20th centuries.

157f, 158w American Poetry

3,3 cr; prereq ††; Levenson, Tate
Critical survey of American poetry from Anne Bradstreet to the present; some attention to historical and intellectual backgrounds; emphasis upon major figures.

159, 160 Early American Literature

3,3 cr; prereq ††; C Foster
Critical survey: emphasis upon principal writers and major cultural themes, from Puritans to Transcendentalists.

162f, w, s Milton

3 cr; prereq 21 or 56
The minor poems, *Areopagitica*, *Paradise Lost*, and *Samson Agonistes*.

165f, w Structure of Modern English

3 cr; prereq ††; Allen
Introductory study of English phonemics, morphemics, and syntax.

166s History of English Language

3 cr; prereq ††
Historical influences upon, and changes within, the language as both a popular and a literary medium of communication.

167 Modern Rhetorical Theory

3 cr; prereq ††; Steinmann
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.

169 Earlier English Drama

3 cr; prereq ††; O'Brien
Interludes, moralities, the cyclic plays (selected), academic and court plays; plays of Kyd, Marlowe, Lyly, Greene, and Peele.

170 Shakespeare's Later Contemporaries

3 cr; prereq 56 or 169; O'Brien
Selected plays of Chapman, Jonson, Dekker, Marston, Webster, Heywood, Beaumont and Fletcher, Middleton, Ford, and Shirley.

173s Dr. Johnson and His Circle

3 cr; prereq †† and Δ; Moore
Boswell; Johnson's influence on his contemporaries.

174s American English

3 cr; Allen

The developing distinctiveness of the 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 the Linguistic Atlas of the 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.

176s Structure of Verse

3 cr; prereq ††; Youngblood
Technical devices: emphasis on tropes, rhythmic patterns, stanzaic forms. Primarily descriptive, but with some attention to history and theory of various techniques.

178 The South in Literature

3 cr; prereq ††; Tate

180 Influence of Poe

3 cr; prereq ††; Tate
The French "Symboliste" school; its influence on modern literature, chiefly poetry, in English.

181 Modern Literary Criticism

3 cr; prereq ††; R Foster
Major texts and movements in modern literary criticism; examination of a few of the more important historical documents from earlier centuries.

183f Poetry of T. S. Eliot

3 cr; prereq ††; Unger

184f, 185w, 186s Form and Idea in Dramatic Literature

3,3,3 cr; prereq ††...55-56 recommended; Hurrell

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 ††; Monk, Leyasmeyer
Survey of English literature from 1700 to 1790. Parallel readings and critical essays. Graduate students will submit a term paper each quarter.

190f, 191w, 192s Twentieth-Century Writers

3,3,3 cr; prereq ††; R Foster
In each quarter, at least two such writers as the following will be studied: Conrad, James, Joyce, Woolf, Lawrence, Forster, Hemingway, Fitzgerald, Faulkner, Shaw,

†† Five credits in literature, English or American, exclusive of freshman English.

78 / Course Offerings and Major Requirements

O'Casey, Frost, Pound, Auden. Authors chosen will vary from year to year, and will be annually specified in the *Class Schedule*.

193s Poetry of W. B. Yeats
3 cr; prereq ††; Unger

194f,195w,196s Elizabethan Prose and Verse

3,3,3 cr; prereq ††; O'Brien
194: From beginning of Tudor period to about 1580; medieval origins of the drama.

195: From early work of Spenser and Sidney to mid-nineties. 196: Decade centering in last year or two of the Queen's reign.

197f,198w,199s Seventeenth-Century Literature

3,3,3 cr; prereq ††; Unger, Monk
197,198: Prose and nondramatic poetry of the century down 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 credits 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 composition or communication without presenting a "Memorandum on Placement" as evidence of his assignment. On the basis of various factors, including examinations, the student is assigned to one of six categories: If he is assigned to Category 1, he is not required to take any course in composition or communication (though he may, if he wishes, take Engl A-B-C, Comp 1-2-3, or Comm 1-2-3), and he is eligible to take any course for which Engl A-B-C is the sole prerequisite. If he is assigned to 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 credits of advanced standing in composition. If assigned to Category 2, he must take Engl A-B-C, Comp 1-2-3, or Comm 1-2-3. If assigned to Category 3, he must take Comp 1-2-3 or Comm 1-2-3. If assigned to Category 4, he must take Comp X; and he must, after passing it, take Comp 1-2-3 or Comm 1-2-3. The other category—Category 4A—need not be explained here.

Engl A-B-C is a 15-credit course consisting of 9 credits of composition and 6 of literature; Comp 1-2-3, a 12-credit course consisting of 12 credits of composition; Comm 1-2-3 (offered in one of the interdisciplinary programs), a 12-credit course in composition and speech. The student may satisfy the Group A requirement for graduation, and for admission to the Upper Division, by passing any 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 composition in another college or university must consult the Committee on Scholastic Standing of his college before registering for any freshman course in composition or communication.

Any student who receives a grade of A in composition in Engl A or B and not less than a B in literature and any student who receives a grade of A in Comp 1 or 2 may, upon his instructor's recommendation, be exempted from further requirement in freshman English. Any student who receives a

†† Five credits in literature, English or American, exclusive of freshman English.

grade of A or B in Comp 1 or 2 may, upon his instructor's recommendation, take the next quarter of Engl A-B-C. Any student who receives a grade of D in either composition or literature in Engl A or B may not, unless his instructor recommends otherwise, take the next quarter of Engl A-B-C but must take the next quarter of Comp 1-2-3.

LOWER DIVISION COURSES

Comp Xf,w,s Preparatory Composition**
 No cr; prereq assignment to Category 4 or 4A (see "Important Note" above)
 A remedial course in composition.

Af,w-Bw,s-Cf,s Freshman Composition and Literature**
 5-5-5 cr; prereq assignment to Category 1, 1A, or 2 (see "Important Note" above)

Combined course in composition (9 cr) and literature (6 cr). Satisfies Group A requirement for graduation.

Comp 1f,w-2w,s-3f,s Freshman Composition**
 4-4-4 cr; prereq assignment to Category 1, 1A, 2, or 3 (see "Important Note" above)

Concentrates upon developing student's skill in writing exposition, with some reading in

expository literature chiefly as a means of providing subject matter for the writing. 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 the exceptionally able student.

Comp 27f,w,s-28f,w,s Advanced Writing**
 3-3 cr; prereq completion of, or exemption from, freshman English requirement; after first day of classes students must have Δ to attend class

27: (a) Expository prose; (b) argumentation.
 28: (a) Advanced expository prose; (b) description; (c) prose style.

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 #: R Foster
 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 the labor force. The courses are designed for students who will specialize in other subjects.

LOWER DIVISION COURSES

If,w,s Dynamics of Dating, Courtship, and Marriage
 3 cr; Huyck, Kokosh, Holland, Johnson, Torbett, staff
 Application of principles from the behavioral

sciences to dating, courtship, mate selection, engagement, mixed marriages, roles of men and women, interaction on marital spouses, and marital stability.

** Any student absent the first day will lose his place in class. Any student absent from the 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.

80 / Course Offerings and Major Requirements

1A1,w,s Dynamics of Dating, Courtship, and Marriage

3 cr, §1; Holland, Huyck, staff
(See FamS 1) Designed for Upper Division engaged or married students.

15f,w,s The Home and Its Furnishing

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; building furnishing costs.

Econ 20s Consumer Economics

3 cr; Maynes
For course description, see Econ 20 under Department of Economics

25f,w,s Parenthood

3 cr, §CPsy 80; Huyck
Examination of differing concepts of family roles—the 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 The Educated Woman in the 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.

Fine Arts/see Art

Foreign Studies/see Interdisciplinary Programs

French/see Romance Languages

Genetics (Gen)/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.

66 (replaces Agro 30 and Zool 66) Principles of Genetics

3 cr; prereq Biol 2 or equiv
The mechanisms of heredity, their implications for biological populations and application to practical problems.

68 (replaces Zool 68) Human Genetics and Social Affairs

3 cr; not open to students who have had Biol 2 or equiv
Introduction to genetics with special attention to human heredity with emphasis on

behavior and other topics of social concern. For students in programs not directly related to biological sciences.

96 (replaces Zool 96) Evolution

3 cr; prereq Biol 2 or equiv
Survey of evidence for and causes of organic evolution.

99 Special Projects

Cr ar; prereq 66 or equiv and #
Individual work on selected topics or problems.

101 Basic Genetics

Cr ar

For correction of deficiencies in background course work.

140 Intermediate Genetics I

3 cr; prereq 66 and Biol 60 or equiv

Structure and function of genetic elements at molecular and cellular levels. Organization and replication of genetic material, mutagenesis, recombination, genetic code and protein synthesis, episomes, suppression, complementation, and regulation.

141 Intermediate Genetics II

3 cr; prereq 66 and Biol 60 or equiv

Selected topics in population and quantitative genetics, cytogenetics, immunogenetics, and developmental and physiological genetics.

171 (replaces Zool 171) Genetics and Speciation

3 cr; prereq 15 cr in biology...66 and 71 or ¶71

Application of genetic principles to problems of speciation and evolution.

175 (replaces Zool 175) Human Genetics

3 cr; prereq 66 or #

Inherited characters in man, particularly in relation to medicine, with some reference to relation of genetics to marriage and social conditions.

176 (replaces Zool 176) Problems and Methods in Human Genetics

3 cr; prereq 175 and PubH 110 or equiv and #

Methods for research in human genetics. Importance of appropriate statistical techniques. Use of genetic concepts in exploring new problems. Individual study of current problems and group discussion.

Geography (Geog)

● Major Sequence in Arts College—

Prerequisites: Geog 1, 4, 41

Requirements:

A. 30 credits in Upper Division courses in geography, including:

1. One field course (131A, 165A, 168A, 171A, 184A)
2. Two technique courses (81, 87, 181, 182, 184, 185, 187, 188)
3. Two regional courses (61, 63, 67, 101, 102, 103, 106, 115, 117, 118, 120, 121, 122, 126, 131, 133, 134, 137, 141, 143)
4. Three topical courses, including 160 or 197 (71, 78, 151, 152, 153, 160, 162, 163, 165, 167-168, 171, 175, 177, 197)

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major requirement:* 1, Physical Geography (5 cr); 4, Human Geography (5 cr); 41, Economic Geography (5 cr). Elective courses in geography—at least 24 credits, including one course in each of the following areas: (a) Anglo-America, (b) Europe, (c) Soviet Union, (d) Southeast Asia, (e) Africa and the Middle East, (f) Latin America. A total of 39 credits 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 *Bulletin of the College of Education*.

Minor requirements: 28 credits of geography, including 1, 4, and 41 plus one course in each of three of the six areas listed for geography major.

82 / Course Offerings and Major Requirements

General Education—In the Lower Division, Geog 1, 4, and 41 deal with world patterns of resources, population, and production which are an essential part of general education. In the Upper Division, the survey courses of particular countries, continents, or regions of the world offer much of interest to the nonspecialist.

LOWER DIVISION COURSES

1f,w,s Physical Geography

5 cr; Barrett, Borchert

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 #: Barrett

Students attend lectures in Geog 1 and meet with lecturer 2 hours per week in the honors discussion section.

4f,w,s Human Geography

5 cr; Broek (f,s), Schwartzberg (w), Webb (f,w); Rice (w,s)

Geography of population and principal ways of life; capacity of the earth for future population.

4Hf,w,s Honors Course: Human Geography

5 cr; prereq #: Webb

Students attend lectures in Geog 4 and meet with lecturer 2 hours per week in the honors discussion section.

41f,w,s Economic Geography

5 cr; Adams, Lukermann

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 #: Adams, Lukermann

Students attend lectures in Geog 41 and meet with lecturer 1 hour per week in the 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 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 (formerly 107) Soviet Union

3 cr, §107; Adams

Character of and bases for regional diversity of physical resources, population, agriculture, manufacturing, and transportation in the U.S.S.R.

67f Geography of Minnesota

3 cr; Borchert

Survey of physical resources, population, and commercial production. Field trips in eastern Minnesota.

101w Western Europe

3 cr; prereq 5 cr or #: Webb

Physical and human geography considered as a whole, followed by a more intensive discussion of selected topics on the British Isles, France, the Low Countries, the Rhine basin, Norway, and Denmark.

102w Central Europe

3 cr; prereq 5 cr or #: Rice

Physical and human geography of Central Europe followed by a more intensive discussion of population patterns, resources, and industries in individual countries.

103f Norden

3 cr; prereq 5 cr 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 the U.S.S.R.

3 cr; prereq 63 or #: Adams

Regionalization, production specialization and interchange within the U.S.S.R.; cultural variations among regions; effects of policies of centralization and regional autonomy; present trends, prognosis, and comparisons with the United States. Periodical readings and research paper required.

115w (formerly 105) Mediterranean Region

3 cr, §105; prereq 5 cr or #: Webb

Physical and human geography of lands adjacent to the Mediterranean Sea: Greece, Italy, Spain, Portugal, and Southern France.

117w The Middle East

3 cr; Lukermann

Historical-geographical description of land and people in changing environment of

Afro-Eurasian bridgelands with analysis of location and pattern of its present cultural and physical resources.

118w Africa

3 cr; prereq 5 cr or #; Porter
Regional differentiation of human groups and environments with special emphasis on culture contact and problems of underdeveloped countries south of the Sahara.

120f South Asia

3 cr; prereq 5 cr or #; Schwartzberg
Physical and human geography of India, Pakistan, Ceylon, Afghanistan, and the Himalayan kingdoms; geographic aspects of social structure, population pressure, economic development, and international relations.

121w Southeast Asia

3 cr; prereq 10 cr or #; Broek
Physical and human geography of Burma, Thailand, Indochina, Malaya, Indonesia, and the Philippines; geographic aspects of population pressure, development of resources, and international relations.

122s East Asia

3 cr; prereq 5 cr or #; Hsu
Physical and human geography of China, Korea, and Japan; geographic aspects of population pressure, development of resources, and international relations.

126w Australia-New Zealand-Oceania

3 cr; offered 1966-67 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 (formerly 114) 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 (formerly 114A) Historical Geography of North America—Field Course

2 cr, §114A; prereq #131 or #; Lukermann
Sequential analysis of settlement and economy in the changing environment and resource patterns of Minnesota and contiguous states.

133s (formerly 112) Western United States

3 cr, §112; Mather
Regional analysis of physical and human resources of western United States.

134f (formerly 113) Eastern United States

3 cr, §113; Mather
Regional analysis of physical and human resources east of the Great Plains.

137s (formerly 111) Canada and Alaska

3 cr, §111; prereq 10 cr or #; Mather
Regional analysis of physical and human geography; examination of both internal and external areal relationships.

141s (formerly 109) Middle America

3 cr, §109; Barrett
Physical and human geography of West Indies and mainland from Mexico to Colombia.

143f (formerly 110) South America

3 cr, §110; Mather
Regional survey of physical resources, population, agriculture, manufacturing, and transportation in countries of South America.

Topical Studies

71f,w,s (formerly 60) Maps and Map Interpretation

3 cr, §60; prereq soph, 5 cr or #; 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 #; Lukermann
Historical and comparative geography of the changing landscape, socio-economic structure and trade relations of selected areas in the world undergoing industrialization in 18th, 19th, and 20th centuries.

151f (formerly 133) Climatology

3 cr, §133; prereq 1 or #; Barrett
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 (formerly 134) Advanced Climatology

3 cr, §134; prereq 151 or #; Barrett
Detailed consideration of methods and results of study of heat and moisture balance of the earth; reception and disposal of precipitation and energy in the local environment; qualities of vegetation and soil cover and terrain that influence local and regional climates; characteristics of ground and surface waters that reflect and influence local climate.

153s (formerly 135) Advanced Physical Geography

3 cr, §135; prereq 152 or #; Barrett
Laboratory work and field observations in quantitative description and analysis of terrain and climate. Particular emphasis on north central United States.

160f Development of Geographic Thought

3 cr, §197; prereq sr, 15 cr; Broek
Objectives, subdivisions, concepts, and methods of geography; special reference to different schools of geographic thought as expressed in literature of the last century.

84 / Course Offerings and Major Requirements

162s (formerly 100) Geographical Exploration and Discovery

3 cr, §100; prereq 5 cr or §; Webb
Extension of geographic horizons of Western society, by discovery of basic land-sea relationships of the earth, from Portuguese explorations along coast of Africa down to modern times.

163s (formerly 143) Political Geography

3 cr, §143; prereq 4 or §; Schwartzberg
Scope and methods of political geography; analysis of selected concepts, problems, and areas.

165f (formerly 153) 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 character of cities, their associations with rural areas, and their functional differentiation.

165Af (formerly 170) Field Course

3 cr, §170; prereq sr, 15 cr; 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 § for 167, 167 and § for 168; Borchert
Changing regional and local patterns of urban growth in the United States; methods and results of projection of future geographic patterns, and their relation to urban planning.

168As (formerly 169) American Cities—Field Study

3 cr, §169; prereq 168 or ¶168; Borchert
Directed field study of urban land use problem in the Twin Cities and vicinity. Excursion to another selected Midwestern metropolitan area.

171f (formerly 152) 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 economies of the world.

171Af Geography of Economic Localization—Field Course

2 cr; prereq ¶171 or §; Lukermann
Analysis of localization of economic activity, circulation of resources, and process of industrial regionalization in the economy of Minnesota and contiguous states.

175w (formerly 150) Rural Geography

3 cr, §150; Mather
Geographic components and assemblages of rural settlement. World regional occurrence and production patterns and geo-

graphic problems of rural settlement and agricultural production on the American scene.

177w (formerly 130) Geography of Outdoor Recreation

3 cr, §130; Lucas
Changing perception, use, and management of amenities of landscape, particularly rural landscape of North America since European settlement.

Geographical Techniques

81f,w,s. (formerly 70) Introduction to Cartography

3 cr, §70; prereq 5 cr or §; Hsu, Porter
Principles of map design, compilation, specification, and drafting. Map symbols. History of cartography. Projections—analysis of construction, properties, and uses.

87f (formerly 73) Quantitative Methods in Geography

3 cr, §73; prereq QA 5, or equiv or §; Adams, Porter, Hsu
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 (formerly 138) Statistical Cartography

3 cr, §138; prereq 81, QA 5 or equiv, or §; Porter, Hsu
Principles of and practice in representing quantitative data on maps. Analysis of dot, line, isogram, chorogram, and central tendency techniques. Representation of terrain.

182f (formerly 140) Advanced Cartography

3 cr, §140; prereq 181; Porter, Hsu
Advanced statistical mapping techniques; emphasis on mapping of population and settlement. Measures of distribution. History of cartography.

184s (formerly 139) Air Photo Interpretation

3 cr, §139; prereq 81 or §; 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 (formerly 139A) Air Photo Interpretation—Field Course

3 cr, §139A; prereq 184 or ¶184; 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 (formerly 165) Source Materials for Geographic Research

3 cr, §165; prereq sr, 15 cr; 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 #; Adams

Formulation of quantitative problems in the 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 #; Adams

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, 3.00 GPA and #; staff

Supervised investigation of selected topics.

91Hw Undergraduate Honors Seminar

3 cr; prereq 10 cr, 3.00 GPA and #; staff

Intended primarily for juniors. Supervised investigation of selected topics.

92H Undergraduate Honors Seminar

3 cr; prereq 10 cr, 3.00 GPA and #;

intended primarily for seniors; staff
Supervised investigation of selected topics.

190f,w,s Directed Readings

1-3 cr; prereq sr; staff

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 ; staff

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 Δ , sr, and grad

Special topics and regions offered by visiting professors in their research fields.

196s Proseminar: East and South Asia

3 cr; prereq sr; same as Anth 196, Pol 196, Ortl 196, and Hist 196; integrating course for students majoring in East and South Asia 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 the last century.

Geology and Geophysics (Geo)/School of Earth Sciences, Institute of Technology

● Major Sequence in Arts College—The following courses are required of all majors:

- A. GeCh 24-25, 26 or 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, 110, 120, 140
- F. An accredited field course
- G. Geo 115, 141, or 170, 171, or 141, 143 (or 144)

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 41-42, Geo 105
- B. Zool 66, 73, 94, 96, OrCh 41-42, Geo 105
- C. PCh 101A, 102A, 103A (or 104A), Geo 142

86 / Course Offerings and Major Requirements

D. Math 106, 131A-131B, Phys 100-102-104

E. Geo 115, 128, 131, Hydr 103, 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, 62, and 115 are designed for general education and are recommended for nonmajors interested in understanding the formation and history of the earth and its landscapes. 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 *Bulletin of the College of Education*.

LOWER DIVISION COURSES

Laboratory science credit can be gained for all courses listed.

1f,w,s Physical Geology

5 cr; prereq high school physics and chemistry recommended; 3 lect hrs, one 2-hr lab, 1-hr rec per wk; Rapp, Matsch, Craddock, staff

Introduction to scientific methods and study of the earth. Survey of main features of the physical world and of processes that have formed them.

2f,w,s Historical Geology

4 cr; prereq 1 or 11; 3 lect hrs, one 2-hr lab per wk; Sloan, staff

Evolution of the earth from its origin, with special attention to succession of physical

and biological events of the past 600 million years.

11f Introductory Physical Geology

5 cr; for prospective majors, science, and honor students; prereq high school or college chemistry or #; 3 lect hrs, 1 rec hr, two 2-hr labs per wk; Weiblen

Intensive sequence.

22w Introductory Historical Geology

5 cr; for prospective majors, science, and honor students; prereq 11 or #; 3 lect hrs, 1 rec hr, two 2-hr labs per wk; Swain

Intensive sequence.

UPPER DIVISION COURSES

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

62s Mineralogy and Lithology

5 cr, § old Geol 23-24; prereq 1 or 11 or #, 1 term college chemistry; 3 lect, 6 lab hrs per wk; Rapp

Introduction to crystallography, crystal chemistry, descriptive and determinative mineralogy. Textural, structural, and mineralogical variations of rocks and some ores.

99f,w,s Senior Research

3 cr; prereq sr in geology or geophysics, #; staff

Research on geological or geophysical problems. Written report. Emphasis on independent data collection (field or lab), and analysis of results.

100-101 Field Geology

Cr ar (by special or cooperative arrangement); prereq 120 or #

Measurement of stratigraphic sections; study of minerals, rocks, and fossils. Geologic surveying, aerial photographs, topographic

maps, plane table methods. Preparation of geologic maps and cross-sections.

103f,w,s Problems in Geology or Geophysics

1-6 cr; prereq #; staff

Individual research in laboratory or field problems.

104 Advanced General Geology

3 cr; prereq #; offered on demand; staff

Problems in modern and classical geology. Seminar-type discussions, evaluation of geologic literature, special projects.

105s Introduction to Paleontology

5 cr; prereq 2 or 22 or #; Sloan

Morphology and classification of major fossil groups.

106f Invertebrate Paleontology

5 cr; prereq 105; 3 lect, 4 lab hrs per wk; offered 1966-67 and alt yrs; Bright

Morphology, classification, and ecology of selected groups of invertebrate fossils.

107f Vertebrate Paleontology I

5 cr; prereq 105 or Zool 53; Sloan
Morphology, evolution, and stratigraphic distribution of fossil fish, amphibians, reptiles, and birds.

108w Vertebrate Paleontology II

5 cr; prereq 107 or Zool 53; Sloan
Morphology, evolution, and stratigraphic distribution of fossil mammals.

110w Sedimentology and Stratigraphy

4 cr; prereq 62; 3 lect, 2 lab hrs per wk; Graf, Swain
Sedimentary processes and products, modern sedimentary environments, principles of physical stratigraphy, classification of stratigraphic units.

111s Stratigraphy

3 cr; prereq 110; Swain
Typical and unique sequences of Precambrian to Cenozoic rocks; methods of presenting stratigraphic data; term paper.

112f Micropaleontology

3 cr; prereq 105; Swain
Biology and paleontology of microorganisms of geologic importance, including Foraminifera, Radiolaria, flagellate Protista, Diatomaceae, Characea, Ostracoda, and conodonts.

115s Geomorphology

4 cr; prereq 2 or 22, Math 10 or 15 or #; Geo 62 and Math 21 recommended; 3 lect, 2 lab hrs per wk; Hooke
Evolution of landforms. Relations of geomorphology to geology, climate, soil formation, 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 the Pleistocene.

117w Pleistocene Geology

3 cr; prereq 116; offered 1967-68 and alt yrs; Wright
Problems in Pleistocene history, particularly of North America, Europe, and the Mediterranean. Relation of climatic changes to soils, biogeography, archaeology. Pollen analysis.

118f Problems in Geomorphology

3 cr; prereq 115; Hooke
Selected geomorphic processes. Emphasis on fluvial processes and arid region geomorphology.

120f Structural Geology

4 cr; prereq 62 or 162 or #; 3 lect, 2 lab hrs per wk; Craddock
Primary and secondary structures of rocks; mechanics and modes of deformation. Exercises in three-dimensional representation and solution of problems.

121w Advanced Structural Geology

3 cr; prereq 120; Craddock
Problems and genesis of secondary structural features; analysis of typical examples. Term paper for graduate credit.

125w Sedimentary Geochemistry

4 cr; prereq PCh 103A or #; 3 lect, 2 lab hrs per wk; Graf
Properties of bulk and adsorbed water. Phase relations. Thermodynamic and kinetic implications of defective crystal structures. Stable isotope studies.

126s Sedimentary Petrology

4 cr; prereq 110 or #; 3 lect, 2 lab hrs per wk; Graf
Mineralogy, textures, structures, and classifications of sedimentary rocks. Role of tectonic framework. Differential effects of weathering and transport.

128 Limnology

4 cr, §Bot 138; prereq GeCh 26 or equiv and #; Shapiro
Description and analysis of events occurring in lakes, reservoirs, and ponds, beginning with their origins and progressing through a study of their physics, chemistry, and biology. Emphasis on interrelationships of these parameters, and on effects of civilization on lakes. Laboratory, field trips.

131f Groundwater Geology

3 cr; prereq 1 or 11, Math 23, 1 qtr physics and chemistry, or #; Papadopoulos
Origin, occurrence, and movements of ground water. Characteristics of aquifers and aquitards. Hydrogeologic units and boundaries. Recharge. Quality of ground-water supplies.

140f Mineral Systems I

4 cr; prereq 62 or #, trigonometry, a yr of college physics and chemistry; 3 lect, 4 lab hrs per wk; Zoltai
Symmetry elements, point groups, co-ordinate systems, crystal forms, lattices, plane and space groups. Introduction to X-ray diffraction, crystal structures.

141w Mineral Systems II

4 cr; prereq 140; 3 lect, 4 lab hrs per wk; Phinney, Rapp, Grant
Crystal chemistry and growth. Optical mineralogy; isotropic and anisotropic media in polarized light. Geometric and electromagnetic theories of optical mineralogy. Thin and polished sections; immersion techniques.

141Aw Mineral Systems IIA

3 cr; prereq 140; 2 lect, 4 lab hrs per wk; Phinney
Optical mineralogy portion of Geo 141.

142s Mineral Systems III

4 cr, §Geo 145 or §Geo 150; prereq 141, PCh 102 or 108, Math 31; 3 lect, 4 lab hrs per wk; Phinney

88 / Course Offerings and Major Requirements

Application of physical sciences to geologic problems. Rocks as chemical systems. Macroscopic and microscopic study of rocks and minerals.

143f Topics in Petrology

4 cr, §146, 147; prereq 120; offered 1966-67 and alt yrs; Grant

Associations, sequences, and structures developed through igneous and metamorphic processes. Laboratory, term paper.

144f Principles of Petrology

4 cr, §145; prereq 62; offered 1967-68 and alt yrs; Phinney

Igneous and metamorphic mineral assemblages. Textures discussed with reference to phase diagrams and physical processes. Petrologic problems. Laboratory.

145f Phase Equilibrium in Mineral Systems

3 cr; prereq 141, PCh 108 or 103; offered 1966-67 and alt yrs; Phinney

Graphical and mathematical treatment of one-, two-, three-, and four-component systems. Phase rule, open vs closed systems, effects of disequilibrium.

146w Igneous Petrology

3 cr; prereq 145; offered 1966-67 and alt yrs; Phinney, Grant

Igneous processes in light of experimental data and theory. Classical studies of igneous rock associations. Term paper.

147s Metamorphic Petrology

3 cr; prereq 146; offered 1966-67 and alt yrs; Grant, Phinney

Metamorphic processes in light of experimental data and theory. Classical studies in metamorphism. Term paper.

150f General Geochemistry

3 cr; prereq PCh 102 or 108 or §; Murthy

Introduction to basic principles and data of geochemistry; origin and cosmic abundances of elements; structure and composition of the earth.

151w Nuclear Geology

3 cr; prereq 142, 150 or §; offered 1966-67 and alt yrs; Murthy

Decay schemes; properties of radioactive elements in geochronology; geochemical processes in the origin and history of igneous rocks, continents, earth, solar system.

152w Problems in Geochemistry

2 cr; prereq 151 or §; offered 1967-68 and alt yrs; Murthy

Selected topics.

155w-156s Mineral Deposits

3-3 cr; prereq 120, 142 or §; Hall

Nature and distribution of mineral deposits, analysis of concentration processes in magmatic, hydrothermal, sedimentary, and surface environments.

157f Mineral Fuel Deposits

3 cr; prereq 110, 120 or §; Swain

Origin and distribution of petroleum and coal deposits: source materials, reservoir rocks, structures, stratigraphic distribution.

160w X-ray Mineralogy

3 cr; prereq 140 or §; Zoltai, Weiblen
Diffraction of X-rays by crystalline material. Instruments. Use of powder patterns for identification and research.

161s Single Crystal X-ray Diffraction

2 cr; prereq 160 or §; Zoltai
Single crystal X-ray diffraction. Lattice and space group determination. Introduction to crystal structure determination.

162s Soil Mineralogy

4 cr; not open to geology, mining and metallurgy majors; prereq 1 or 11 or §, a term of college chemistry; 3 lect, 6 lab hrs per wk; Rapp

Introduction to crystallography, crystal chemistry, descriptive and determinative mineralogy. Textural, structural, and mineralogical variations of rocks and some ores. Term paper.

163s Electron Microprobe Analysis

2 cr; prereq PCh 103 or Phys 110 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 14 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 120 or §
Physics and geology of earthquakes; causes, effects, distribution, seismic waves.

172s Introduction to Exploration Geophysics

3 cr; prereq 2 or 22, Phys 9 or 14 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 14 or 23, Math 23

Instrumentation, surveying techniques, reduction of data, interpretation, case histories.

176w Principles of Seismic Exploration

3 cr; prereq 2 or 22, Phys 9 or 14 or 23, Math 23

Reflection and refraction seismology; theory, interpretation, instruments.

177f Principles of Electrical Exploration

2 cr; prereq 2 or 22, Phys 9 or 14 or 23, Math 23; Mooney

Resistivity, electromagnetic, and other methods; theory, interpretation, instruments.

German (Ger)

- **Major Sequence in Arts College**—35 credits in courses numbered 56 or above, including 97, 98 and at least 12 other credits in literary courses.
- **Minor Sequence in Arts College**—15 credits in courses numbered 56A or above, of which at least 9 should be in literary courses.
- **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)

- A. Ger 80—History of the German Language (3)
(or) Clas 56—Elementary Linguistics (3)
- B. Ger 57-58-59—Composition (6)
- C. Ger 61-62-63—Conversation (6)
(or) Ger 64-65-66—Advanced Conversation and Essay Writing (6)
- D. Ger 60—Analysis of Modern German Structure for Teachers (2)
- E. Any 2 quarters (6 cr) of:
 - Ger 91, 92, 93—Civilization and Culture (Ger 68, Contemporary Germany, may be substituted for 93)
 - (or) Ger 95, 96—Survey of German Literature
- F. 12 credits in courses numbered 56A or above (at least 9 cr should be in literature courses)

German as a Minor Subject: 23 credits including:

- A. Ger 57-58-59
- B. Ger 60
- C. Ger 61-62-63
- D. 9 additional credits in literature courses numbered 56A or above

LOWER DIVISION COURSES

Note—A student who has had high school German courses cannot register for an equivalent beginning German course (1, 2, 3, or 4) without taking the German placement test.

There are three course sequences in first-year German, 1-2-3, 1A-2A-3A, and 1B-2B-3B, each of which prepares the students for 4, the second-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; lectures on CCTV twice a week, small drill sections three times a week; C Wood

Experience in speaking and oral comprehension through the acquisition of basic speech patterns and knowledge of the structure of the German language. A reading knowledge

is developed in the later part of the course through reading and analyzing texts.

1Af,w-2Af,w,s-3Af,w,s Beginning German: Oral Approach

5-5-5 cr; 5 class meetings a week
Basic experience in speaking, reading, and understanding German language and its structure through acquisition of basic pat-

90 / Course Offerings and Major Requirements

terms of speech and later through reading and analysis of texts.

1Bf-2Bw-3Bs Beginning German: Language and Culture

5-5-5 cr; 5 class meetings a week
Provides foundation for a reading knowledge adequate for cultural and professional purposes; a core of minimum essential vocabulary and familiarity with German structure necessary for speaking; an introduction to representative German figures such as Goethe, Heine, Thomas Mann, through a variety of German and English texts.

1Hf-2Hw Honors Course: Beginning German

5-5 cr, plus 5 cr on passing examination

UPPER DIVISION COURSES

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

50f-51w-52s Reading German: Beginning Course for Juniors and Seniors

3-3-3 cr, §1A-2A-3A, §1B-2B-3B, §1H-2H, or §high school German
Develops reading proficiency by concentrating on vocabulary building and reading techniques and reduces presentation of formal grammar to a minimum. Intensive study of a variety of texts in class.

53f,54w,55s German Literature in Translation

2,2,2 cr; offered 1966-67; Coleman, Kimber, F Wood
Requires no knowledge of the German language. German literature from medieval to modern times in its relation to other literatures; representative works are read in translation. Topics include *Parzival*, *Tristan und Isolde*, *Nibelungenlied*, *Minnesinger* and *Meistersinger*; humanism, Reformation and Counter Reformation; Goethe, Schiller, and the new humanism; romanticism; Heine, Wagner, Nietzsche, Hauptmann, Mann, Rilke, Werfel.

56Af,w,s Reading and Analysis of Literary Texts

3 cr; not open to students who have had 70 or above; prereq 4, or 4 yrs high school German
Short stories are read to develop reading fluency and appreciation of literary values.

56B Interpretation of Literature

3 cr; prereq 56A or §...recommended especially for German majors and honors students; Weiss
Instructor will initially present certain interpretations of literary works to familiarize student with basic techniques and terminology of literary interpretation. Major portion of course devoted to written or oral presentation of student's own interpretation of literary works. Interpretations analyzed and evaluated in class. In addition to liter-

after completing the 2 qtrs; for students of high ability as indicated by their college entrance records; prereq §; 5 class meetings a week; Ramras
Covers material of the 1B-2B-3B sequence.

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.

ary texts, students read certain books and articles in field of literary criticism.

57f-58w-59s Composition

2-2-2 cr; prereq 4 and 5
Review of German grammar; emphasis on colloquial usage, and original composition.

60f Analysis of Modern German Structure for Teachers

2 cr; for undergrad German majors; prereq 56 or 4 and Δ; C Wood
Experience in methods of linguistic analysis of German language structure into categories: syntactic, morphemic, phonemic analysis.

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 the use of spoken German.

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
An 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 the Present

3,3,3 cr; prereq 56A, or 4 and Δ; Menze

Reading and analysis of outstanding dramatic works. 73: Classical period. Lessing, Goethe, Schiller. 74: Nineteenth century. Kleist, Hebbel, Grillparzer. 75: Modern drama. Plays representing the more recent movements in German literature, naturalism, impressionism, expressionism.

76f,77w,78s German Prose of Nineteenth and Twentieth Centuries

3,3,3 cr; prereq 56A or #; taught in German; Taraba, Weiss

76: Nineteenth century. Selected Novellen by renowned mid-century prose writers, such as Keller, Meyer, Ludwig, Fontane. 77 and 78: Modern writers. Writers and literary movements of 20th century are represented in selected works of Thomas and Heinrich Mann, Schnitzler, Kafka, and others.

80w History of the 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

89Hw-90Hs Honors Course: Proseminar in German

3-3 cr; prereq candidacy for honors in German; Taraba and/or staff

89H: Organized around a significant theme in German literature (e.g., view of role of the artist from 18th to 20th century); different staff members lecture and conduct dis-

cussions on assigned reading within the area of their special competence. 90H: Writing honors papers under guidance of those professors whose areas have been chosen.

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 against a general historical and geographical background. Class discussions and lectures supplemented with demonstration materials.

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; Hirschbach

Reading of some of the more significant works, supplemented by lectures on history and development of German literature. 94: From beginnings to 18th century. 95: From 18th century to end of Goethe period. 96: From 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

Courses numbered 100 to 199 are open to seniors upon recommendation of advisers. Prerequisites are 14 credits 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; required of all grad majors; prereq 66 or equiv; offered 1966-67

133f Bibliography and Research Methods

3 cr; required of all grad majors

Literature

116f-117w-118s Middle High German Literature

3-3-3 cr; prereq 112, or #; Coleman

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 The German Novelle: From Goethe to Kafka

3,3,3 cr; Taraba

146f,147w,148s Literature of the Nineteenth Century

3,3,3 cr; Taraba

Literature, literary movements, and influences represented in drama, lyric, and shorter prose forms.

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 the Seventeenth Century

3-3 cr; Weiss

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

92 / Course Offerings and Major Requirements

170f,171w,172s Romanticism
3,3,3 cr; Menze

173f,174w,175s The Nineteenth-Century
Novel
3,3,3 cr; Menze

176f,177w,178s The Nineteenth-Century
Drama
3,3,3 cr; Menze

179A,B,C German Drama from Naturalism
to the Present

3,3,3 cr; Hirschbach, Weiss

A: 1880-1910. B,C: 1910 to present.

180f,181w,182s The Twentieth-Century
Novel

3,3,3 cr; Ramras, F Wood, Hirschbach

183f,184w,185s Studies in Literature of the
Twentieth 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

Germanic Philology and Linguistics

107f-108w-109s† Structure of Modern Ger-
man

3-3-3† cr; prereq sr with #, grad, C
Wood

Linguistic approach to study of structure
of present-day German.

110f-111w-112s† Middle High German Lan-
guage

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 Ger-
manic 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 the 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 Recon-
struction

3 cr; prereq #; Coleman

For Old Norse, see Scandinavian Depart-
ment.

Greek/see Classics

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 Hist 1, 2, 3 or 4, 5, 6 or 11, 12, 13 or 14, 15, 16 or 17, 18, 19 in the freshman year, Hist 23, 24 in the sophomore year, and 27 credits in history courses numbered 65 or above in their last 2 years. Of these Upper Division courses, at least 18 hours must be in 6-hour or 9-hour 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-hour or 9-hour 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.

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 9-hour Upper Division sequence course and Honors Course: History (82H-83H-84H). If for one reason or another it is not possible to take the honors course in the junior year, another 9-hour 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-hour 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 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 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 credits; at least 30 credits must be in Upper Division courses numbered 65 or above. See the *Bulletin of the College of Education* for details. *Minor recommendation:* a minimum of 29 credits of which at least 12 credits 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.

For a specialized minor curriculum in social studies see the *Bulletin of the College of Education*.

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

If, w, 2w, s, 3f, s **Civilization of the Modern World**

3, 3, 3 cr; Munholland, Noonan, Wright
1: Rise of European state system as frame-

work within which Western civilization developed; and economic, cultural, political, intellectual, and religious implications to the emerging system. 2: Struggle for control

94 / Course Offerings and Major Requirements

over the Western states system, and emergence of liberal democracy in the modern world. 3: Impact of industrialism upon Western and world civilization in the 20th century.

1Hf,w,2Hw,s,3Hf,s Honors Course: Civilization of the Modern World

3,3,3 cr; prereq #: Munholland, Noonan, Wright

Students attend lectures in Hist 1, 2, 3 and meet with the lecturer 1 hour per week to discuss readings, problems in historiography, and research methods relative to civilization of the 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; 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.

14f,15w,16s Ancient Civilization

3,3,3 cr; Leichty, Muhly

Survey of rise and fall of ancient civilization. 14: Near East to 500 B.C. 15: Greek civilization, 750-323 B.C. 16: Roman civilization to A.D. 305.

14Af,15Aw,16As. Ancient Civilization with Basic Readings

5,5,5 cr; T Jones, Muhly

Students attend lectures in Hist 14, 15, 16 and meet 2 additional hours per week to discuss assigned readings in literature of the Near East, Greece, and Rome.

17f,18w,19s History of Asia

3,3,3 cr; Marshall, Taylor

A survey of history of China, Japan, India, and Southeast Asia from ancient times to the present. 17: History and culture of China, Japan, and India to A.D. 1200. 18: Asia, A.D. 1200-1800 (Chinese late imperial period; India: Muslim domination; Japanese feudalism; beginning of Western influence). 19: Modern Asia: Impact of Europe, nationalism.

23,24 (formerly 20,21,22) American History

4,4 cr (formerly 3,3,3 cr); prereq soph; offered every quarter; Berkhofer, Berman, Brauer, Chambers, Green, Howe, Murphy, Rutman, Spear

Survey of political, economic, and social history of the United States with emphasis on forces that resulted in the emergence of Modern America. 23: Colonial, early national period through the sectional crisis. 24: Modern America.

23H,24H (formerly 20H,21H,22H) Honors Course: American History

4,4 cr (formerly 3,3,3 cr); prereq soph and #: Berkhofer, Berman, Brauer, Chambers, Green, Howe, Murphy, Rutman, Spear

Students attend lectures in Hist 23 and 24 and meet with the lecturer 1 hour per week to discuss readings, problems in historiography, and research methods in American history.

Mil 45w American Military History

3 cr; may not be used to satisfy Lower Division distribution requirements or the requirements for those who major and minor in history

United States Army operations from the American Revolution to the Korean War. A comprehensive survey of the history of land warfare as applied to the significant political, economic, social, and technical growth of the United States.

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

53f,54w,55s Civilization of the Modern World

3,3,3 cr, §1, §2, §3; Altholz, Thayer

56f,57w,58s History of England

3,3,3 cr, §4, §5, §6; Willson

59f,60w,61s History of Asia

3,3,3 cr, §17, §18, §19; Marshall, Stein, Taylor

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.

74f-75w-76s History of the Arabs (same as Arab 74, 75, 76)

3-3-3 cr; prereq # for 74; Chejne

74: From pre-Islamic days to downfall of Umayyads of Damascus. 75: From the Abbasids to fall of Baghdad in 1258. 76: From Crusades to modern times.

74Af,75Aw Ancient Israel (same as Heb 74,75)

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 the bearing of civilizations of ancient Mesopotamia and Egypt on cultural and social aspects of the Bible.

79f,80w,81s United States in the Twentieth 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.

82Hf-83Hw-84Hs† Honors Course: History

3-3-3† cr; prereq candidacy for honors in history, †; staff

86f,87w,88s American Colonies

3,3,3 cr; Rutman

86: In the 17th century. 87: In the 18th century. 88: In the empire and the revolutionary crisis.

87Aw,88As Era of the 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 the Revolution upon American life. 87A: Causes and course of the Revolution. 88A: The Revolution and an American nation.

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.

90f,91w-92s The American West

3,3-3 cr; prereq 91 or † for 92; Berkhofer

Interpretation of American frontier from its establishment in the colonies to its disappearance as a factor in American life. 90: Colonial frontier. 91: Mid-America. 92: Beyond the 100th meridian.

90Af-91Aw-92As American Social History

3-3-3 cr; Smith

90A: A topical introduction, through lectures and readings, to 1850. 91A: Independent research on topics planned in 90A. 92A: Lectures and readings from 1850 to 1950.

93f,94w,95s History of American Foreign Policy

3,3,3 cr; Brauer

93: Revolution, territorial expansion, to post-Civil War settlements, 1775-1871. 94: Period of commercial expansion and war, 1871-1920. 95: American foreign policy since Versailles.

93Af,94Aw American Business History

3,3 cr; Green

93A: Colonial to 1890. 94A: 1890 to the present.

96s History of American Political Parties

3 cr; offered 1966 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

100Bf,101Bw,102Bs Directed Study (Special course)

3,3,3 cr; prereq †; staff

Qualified senior and graduate students may register for 1 or more quarters with *consent of instructor* for work and training on a tutorial basis.

103Af,104Aw,105As The Ancient Near East

3,3,3 cr; Leichty

103Bf,104Bw,105Bs Greece to 200 B.C.

3,3,3 cr; offered 1967-68 and alt yrs; T Jones

103Cf,104Cw,105Cs History of Rome

3,3,3 cr; offered 1966-67 and alt yrs; T Jones

106Af,107Aw,108As Europe in Early Middle Ages

3,3,3 cr

106A: Reforms of Diocletian to first sack of Rome (410). 107A: Age of the 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: Later Middle Ages and early Italian Renaissance (1300-1450). 107C: High Renaissance (1450-1515). 108C: Reformation (1515-1560).

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 the 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 (formerly 105-106-107) Early Modern Europe

3,3 cr

96 / Course Offerings and Major Requirements

115A: The 17th century. 116A: The 18th 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 the Nineteenth Century

3,3 cr; Pflanze

115C: Reaction and revolution (1815-1852). 116C: National unification, industrialization, and imperialism (1852-1900).

115Df,116Dw,117Ds Europe in the Twentieth Century

3,3,3 cr; Munholland

115D: From 1890 to 1918. 116D: From 1918 to 1938. 117D: From 1938 to the 1950's.

115Ef,116Ew,117Es World War II

3,3,3 cr; Deutsch

115E: Origins and background. 116E: War period, 1939-1942. 117E: Period 1943-1945.

118Af,119Aw Modern France

3,3 cr; prereq 9 cr, or 15 cr in social science, or major in French; 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 the 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 the 18th century. 119D: The 18th century to 1867. 120D: From 1867 to the present.

118Ef,119Ew,120Es History of Early Russia

3,3,3 cr; Noonan

118E: Origins of Russia, Kievan period. 119E: Mongol conquest of Russia, rise of Muscovite state to the 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: 18th-century background. 119F: The 19th century. 120F: Fall of the Russian monarchy; the revolutions and the Soviet regime.

118Gf,119Gw (formerly 118G, 119G, 120G) 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 (formerly 122, 123, 124) History of the Scandinavian Countries

3,3,3 cr

118Kf,119Kw,120Ks History of Italy from Era of French Revolution to the Present

3,3,3 cr; Thayer

Survey of diplomatic, political, social, and intellectual history of Italy from late 18th century to the present. 118K: From 1789 to 1860. 119K: From 1860 to 1901. 120K: From 1901 to the present.

118Lf,119Lw History of Austria

3,3 cr; offered 1966-67 and alt yrs; Wright

118L: From foundation of the March to advent of nationalism (1809). 119L: From 1809 through dissolution of the monarchy to the Second Republic.

121Bf,122Bw (formerly 121B, 122B, 123B) Expansion of Europe

3,3 cr

121B: Era of discovery, commercial empires of Asia, settlement colonies of the Western Hemisphere, 1400-1763. 122B: Later colonization, imperialism, modernization, and nationalism beyond Europe, 1763-World War II.

121Cf,122Cw,123Cs Intellectual and Cultural History of Modern Europe

3,3,3 cr; offered 1966-67 and alt yrs; Altholz

121C: The 18th century and its background. 122C: The early 19th century, romanticism and liberalism. 123C: The late 19th and early 20th centuries, breakdown of intellectual unity of Europe.

122Af,123Aw (formerly 121A, 122A, 123A) Economic History of Europe

3,3 cr

122A: Medieval and early modern economic life. 123A: Modern European economic history.

124Af,125Aw,126As Modern England: Tudor and Stuart Periods

3,3,3 cr; offered 1966-67 and alt yrs; Willson

124A: 1485-1588, from Henry VII to defeat of Spanish Armada. 125A: 1588-1642, from Spanish Armada to English civil wars. 126A:

1642-1714, from civil wars to death of Queen Anne.

124Cf,125Cw,126Cs Modern England: 1783 to the Present

3,3,3 cr; offered 1967-68 and alt yrs; Altholz

124C: 1783-1846, triumph of the middle class. 125C: 1846-1901, the Victorian era. 126C: 1901-1951, war and social change.

127Af,128Aw,129As Modern England: Social History

3,3,3 cr; offered 1967-68 and alt yrs; Willson

127A: The age of Queen Elizabeth I. 128A: The 18th century. 129A: The age of Queen Victoria.

130Af,131Aw,132As History of the British Empire and Commonwealth

3,3,3 cr; offered when feasible

130A: First empire to 1783. 131A: Second empire, 1783-1914. 132A: Development of the 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 the field and its implications for general interpretation of American history.

139Bs Puritanism in American History

3 cr; prereq #; offered 1968 and alt yrs; Rutman

Puritanism as a reality and as a concept for historical interpretation.

139Cf,140Cw,141Cs Intellectual History of the United States

3,3,3 cr; Noble

139Ef,140Ew,141Es Social History of American Education (see 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 the 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 the United States

3,3,3 cr; Murphy

139G: From Magna Carta through the colonial and national experience. 140G: Civil liberties and challenge of industrialism, 1865-1918. 141G: Civil liberties and civil rights issues in modern context.

139Jf,140Jw,141Js Race and Nationality in American History

3,3,3 cr; Spear

Historical role of ethnic minorities in American society. Changing attitudes of Anglo-Americans toward Negroes, Orientals, and European immigrants and the varying responses of these groups to their minority status. 139J: From 1619 to 1865. 140J: From 1865 to 1920. 141J: From 1920 to the present.

141Ks. Great Figures in American Jurisprudence

3 cr; offered 1967 and alt yrs; Murphy

Analysis of role of leading jurists, and legal thinkers in shaping of 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; Beatty

145A: Colonial period. 146A: Latin-American republics. 147A: Recent Latin-American history.

148Af,149Aw (formerly 148A, 149A, 150A) 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, 1526-1947.

148Bs History of Southeast Asia

3 cr

98 / Course Offerings and Major Requirements

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 (formerly **148D, 149D, 150D**) Chinese History to A.D. 1279
3,3 cr; offered 1967-68 and alt yrs;
Taylor

148D: To 221 B.C. **149D:** To 1279.

148Ef, 149Ew (formerly **148E, 149E, 150E**) Chinese History, 1279 to 1949

3,3 cr; offered 1966-67 and alt yrs;
Taylor

148E: To 1800. **149E:** Since 1800.

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 111 recommended;
offered when feasible

151A: Prehistoric times to A.D. 600. **152A:**
A.D. 600 to the 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 History
3-3-3† cr

166Af-167Aw-168As† Medieval English History
3-3-3† cr; Hoyt

169Cf-170Cw-171Cs† Europe in the Eighteenth Century
3-3-3† 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

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

172E-173E† Modern European Intellectual History

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† (formerly **176B-177B-178B**) Scandinavian History

3-3-3† cr

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 The Atlantic Community: Early Modern Origins

3 cr; offered 1967 and alt yrs; Rutman

175Ff-176Fw-177Fs† Religious History of Modern Europe

3-3-3† cr; offered 1967-68 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 the Present

3-3-3† cr; offered 1966-67 and alt yrs;
Altholz

Proseminars in History of the Americas

181Af-182Aw-183As† Seventeenth- and Eighteenth-Century American History
3-3-3† cr; Rutman

181Bf-182Bw-183Bs† Era of the 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 1967-68 and alt yrs;
Loehr

181Jf-182Jw-183Js† Twentieth-Century American History
3-3-3† cr; Chambers

184Af-185Aw-186As† The West in American History
3-3-3† cr; offered 1967-68 and alt yrs;
Berkhofer

184Ew-185Es† The Negro in American History
3-3† cr; 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 1967-68 and alt yrs; Brauer
- 187Df-188Dw-189Ds† Intellectual History of United States in Nineteenth, Twentieth 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 1966-67 and alt yrs; Loehr
- 188Jw-189Js† Proseminar: American Business History
3-3† cr; Green
- 190Af-191Aw-192As† Latin-American History
3-3-3† cr; prereq reading knowledge of Spanish; offered when feasible; Beatty
- 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; Stein
- 193Cf-194Cw† (formerly 193C-194C-195C) Chinese History to A.D. 1279
3-3† cr; offered 1967-68 and alt yrs; Taylor
- 193Df-194Dw† Chinese History, 1279 to 1949
3-3† cr; offered 1966-67 and alt yrs; Taylor
- 196s East and South Asia (same as Anth 196, Geog 196, Ortl 196, and Pol 196)
3 cr; integrating course for students majoring in East and South Asia area studies program; interdepartmental staff
- 199As Southeast Asian History
3 cr; offered 1966 and alt yrs; Stein

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 the approval of the chairman of the subject area in the School of Home Economics and 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 220 Coffey Hall. A limited number of tally cards is available in 205 Johnston Hall.

LOWER DIVISION COURSES

If,w,s Clothing Selection

3 cr, §GC 3C; not open to srs

Overview of individual, familial, and societal factors affecting selection of clothing and related items. Principles of clothing selection originating from economic and design theory.

19f,w,s Visual Presentation

3 cr

Laboratory experiences designed to develop observation, perception, and communication through studies in basic art tools and mediums, visual elements, spatial representations, and lettering. Free and disciplined graphic expression including the development of a portfolio and sketchbook.

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. Arts and crafts of various countries studied briefly for their contribution to student's breadth of view, enjoyment, and understanding of other cultures.

21f,w,s Color

3 cr

Study of color theory and its application to problems in dress and interiors; experiments with paint mixing, color in light,

100 / Course Offerings and Major Requirements

color illusion. Emphasis on development of sensitivity and awareness.

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 (24) Home Planning and Furnishings I

3 cr; prereq soph
Problems involved in choosing location and in planning or selecting a dwelling unit and its furnishings. Emphasis on design and appraisal of individual and family needs.

24Bf,w,s Home Planning and Furnishing Experiences I

3 cr; prereq 24A or ¶24A
Problems in designing for living space needs. Experiences in evaluation of design quality of furnishing elements. Selection and coordination of fabrics, furniture, accessories in a studio room. Field trips.

25s Craft Design

3 cr; prereq 21 and 23 recommended
Applied design experiences with a variety of readily available materials for articles used in the home and dress.

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; interrelationship with choice, maintenance, and performance of consumer textiles.

70f,w Advanced Food Preparation

3 cr; prereq 40, BioC 1A
(Continuation of 40) Emphasizes scientific principles that underlie cookery processes and food preservation.

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 principles of nutrition to selection of food.

76f,s Nutrition of the Family

4 cr, §170, §171; prereq 31, 40, physiology or human biology
Principles of nutrition and problems of food selection most commonly met in everyday living.

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. Discussions concerning production problems of the home craftsman and the designer craftsman.

29s Art and the Environment

3 cr; prereq 3rd qtr fr
Art and design in housing; an individual's role and responsibility; contemporary and historic examples of alternative approaches to design of the physical home environment.

31f,w,s Introduction to Nutrition

3 cr, §GC 3B; not open to HE srs
Application of nutrition principles to food selection of college students. Includes information on relation of food to promotion and maintenance of health.

40f,w,s Food Preparation

5 cr; prereq 3rd qtr fr, 2 qtrs chemistry
Development of technique and application of fundamental science principles to cookery processes and preservation. Establishment of good standards for food products.

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.

100 Homes of the World

3 cr; prereq 24 or 29 or equiv
Study of home design in selected regions of the world.

120f,w,s Art History

3 cr
Art from Egyptian period to present. Painting, sculpture, and architecture of the past studied for influences on contemporary period. Field trips.

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.

123A History of Home Interiors and Furnishings I

3 cr; prereq 120 or equiv
Study of furnishings and interiors from ancient times through the 18th century,

including Oriental influences. Major emphasis given to European-American furnishings of the 18th century.

123B History of Home Interiors and Furnishings II

3 cr; prereq 120 or equiv
European-American furnishings and interiors of domestic architecture of the 19th and 20th centuries. Role of reproductions and adaptations.

125s Advanced Costume Design

3 cr; prereq 3, 22, or #
Problems in draping and sketching clothing designs. Pencil, crayon, and water color techniques; studies and reports on selected topics.

126f Craft Problems II

3 cr; prereq 25 or 26 or #
Advanced craft design in one selected medium. Readings.

How to Study/see Interdisciplinary Programs

Humanities/see Interdisciplinary Programs

Indian/see East and South Asian Languages

Interdisciplinary Programs

The Arts College offers both departmental and interdepartmental courses for the purpose of general education. Such courses are designed in the main for students who will not specialize in the academic areas with which these courses are concerned. Introductory courses in most departments help serve this purpose, and many departments offer courses beyond the introductory level also suitable to the interests of the nonspecialist. The student will find brief guides to such courses in the introductions to a number of department listings.

Interdepartmental courses or divisional courses devised especially for the purposes of general education are also offered by the Arts College. These courses draw subject matter and materials from several disciplines. They are designed in the main for students who will specialize in other subjects and thus will not be able to elect several courses in the field.

The courses have been arranged in six programs. In registering for these courses, write the program heading (abbreviated prefix) in the column labeled "department" as indicated in the listings that follow.

Communication (Comm)

If,w,s-2f,w,s-3f,w,s Communication
4-4-4 cr, §Comp 1-2-3 (formerly Engl 1A,2A,3A, and Engl 1B,2B,3B), §Engl A-B-C, or §Engl 10H-11H-12H; prereq assignment to Category 1, 1A, 2, or 3 (see Important Note on page 78)

The 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 utterances through the mass media of communication. Instruction individualized by conferences; staff consultant on speech available. Meets Group A requirement in Freshman English.

102 / Course Offerings and Major Requirements

1Hf-2Hw-3Hs Honors Course: Communication

4-4-4 cr, §Comp 1-2-3 (formerly Engl 1A,2A,3A, and Engl 1B,2B,3B), §Engl A-B-C, or §Engl 10H-11H-12H; prereq

assignment to Category 1, 1A, or 2 (see Important Note on page 78), 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.

Foreign Study (FoSt)

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 the year preceding the summer abroad, and writes a comprehensive report upon returning.

Humanities (Hum)

The subject of the humanities is man; his values, aspirations, and limitations. The subject is approached through a carefully integrated study of literature, philosophy, history and the arts. Humanities is a distinct field of study; it does, however, avail itself of the material of the social sciences, which deal with relations between men, and 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 credits in combined Modern World and European Heritage sequence of which at least 5 credits must be in European Heritage (at least 15 credits must be taken in Upper Division)
- B. Upper Division
 1. 9 credits in social science (history included)
 2. 9 credits in history of art or history of music
 3. 8 credits in philosophy
 4. 18 credits in literature (English or foreign)
 5. 9 credits in the 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 the Modern World I**
5 cr, §1A or §51; staff
Old Regime, French Revolution and Na-

poleonic Era, neoclassicism, and romanticism. Authors: Pope, Voltaire, Rousseau, Burke, Goethe, and Tolstoy.

1Af-2Aw-3As Humanities in the 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, staff

Each quarter corresponds to the respective quarter of Hum 1,2,3, but with reduced reading list.

1Hf,2Hw,3Hs,4Hf,w,s Honors Course: Humanities in the Modern World (same as Hum 1,2,3,4

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; staff

2f,w,s Humanities in the Modern World II

5 cr, §2A or §52; prereq 1 or 1A; staff
Industrial Revolution, liberalism and socialism, individualism. Authors: Smith, Malthus, Carlyle, Marx, Ibsen, Mill, Zola, Flaubert, Tolstoy, and Dostoevski.

3f,w,s Humanities in the Modern World III

5 cr, §3A or §53; prereq 2, 2A or 52; staff

Impact of science and the theory of evolution; religion and morals in a changing world. Authors: Darwin and the evolutionists, Nietzsche, Kierkegaard, Chekhov, Turgenev, Mann.

4f,w,s Humanities in the Modern World IV

5 cr, §54; prereq 1 or 1A, 2 or 2A, 3 or 3A; Bryan, Hallberg, Kliger, 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.

11f,12w,13s The European Heritage

5,5,5 cr, §61 for 11, §62 for 12, §63 for 13; staff

Masterpieces of European civilization from Homer to Cervantes. Literature, philosophy, theology, the arts of Greece, Rome, the

Middle Ages, and the Renaissance. Attention paid to ideals and forces of continuing importance to modern world.

11f The Greek Heritage

Greece through the Peloponnesian War. Emphasizes Golden Age of Athens: tragic visions of the dramatists, classical art and architecture, Athenian democracy, concepts of reason and justice. Authors: Homer, Hesiod, the dramatists, Plato, Aristotle, Thucydides, and, for purposes of comparison, *The Book of Job* and other readings from the *Old Testament*. Greek art and architecture.

12w Roman and Medieval Heritage

Hellenistic and Roman civilization. Epicureanism, and stoicism, neoplatonism, Hebrew background and setting for Christianity, Christian doctrine. Medieval society, faith, theocracy. Romanesque and Gothic art and architecture. Authors: Lucretius, Marcus Aurelius, *New Testament*, Augustine, church documents, Dante.

13s The Renaissance and Reformation

The 15th to 17th centuries. Rise of Italian communes, commercial life, banking; age of Lorenzo the Magnificent in Florence; ideal of beauty in art, politics, and morals; universal man. High Renaissance and the power of Rome, the Reformation in Germany, the Counter Reformation in Spain and France. Authors: Pico della Mirandola, Machiavelli, Castiglione, Luther, Calvin, Loyola, Montaigne, Pascal, Cervantes, Marlowe. Renaissance and baroque art and architecture.

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

3,3,3 cr; Hage, Murphy, Turpie

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

UPPER DIVISION COURSES

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

51f,w,52w,s,53f,s Humanities in the Modern World

5,5,5 cr, §corresponding qtr of 1-2-3 or

1A-2A-3A; prereq jr or sr; same staff as for 1-2-3

Similar to 1-2-3; more reading, papers.

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

104 / Course Offerings and Major Requirements

51Hf,52Hw,53Hs,54Hf,w,s Humanities in the Modern World

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 the Modern World

5 cr, §4; prereq jr or sr; Berryman, Bryan, Kliger, Louden, Penn
Similar to 4; more reading, papers.

55s Humanities in the Modern World V

5 cr; prereq 4 or 54; staff
Intellectual climate of the western world since World War II. The worlds of existentialism and "the absurd"; alienation, irrationalism; the anti-hero in literature; the new theology; influence of Zen. Readings in Camus, Hesse, Genet, Ionesco, Buber, Bultmann, Tillich, and others.

61f,w,62w,s,63f,s The European Heritage

5,5,5 cr, §corresponding qtr of 11, 12, 13; limited to jrs and srs; Ames, Berryman, Louden
Similar to 11, 12, 13; more reading, papers.

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

3,3,3 cr; Cooperman, Levenson
Introduction to American cultural history. Each quarter organized around topics that

disclose a major conflict of ideals—for example, liberty and property in the early Republic, individualism and majority rule in the pre-Civil War era, materialism and idealism in the present industrial age. Such figures as Jefferson, Hamilton, Thoreau, Mark Twain, Frank Lloyd Wright, and William Faulkner are studied.

99 Science and the Humanities

5 cr; prereq jr, sr or #; staff
Examines warfare between the two cultures, the scientific and the humanistic, through a consideration of decisive documents from Ficino and Vives to recent work of Polanyi, Koestler, Bronowski, and A. Huxley. Selected topics include (a) humanistic scholarship and the methodological character of the sciences, (b) creativity in arts and sciences, and (c) problem of the scientist's moral responsibility.

131f,132w,133s Humanities Proseminar

3,3,3 cr; prereq sr; Ames, Berryman, Bryan, Kwiat
Integrated review of humanities materials: the arts, the sciences, and civilization.

131Hf,132Hw,133Hs Humanities Proseminar

3,3,3 cr; for honors candidates in humanities and others with an over-all grade average of B or better; prereq sr and Δ; staff
Topics same as for 131, 132, 133.

Attention is called to the following courses: Art 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 East 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.

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 and 1A-2A are offered by the Departments of Botany and Zoology 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†,3s Orientation in the Natural Sciences

5-5†,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

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

science and meaning of the scientific method in physical and biological sciences. 1: Astronomy and physics. 2: Chemistry and geology. 3: Foundations of modern biology with stress on function, development, heredity, and evolution.

4f,w-5w,s† The Physical World

4-4† cr (formerly 3-3† 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 The Physical World

4 cr; prereq 4 and 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.

Attention is called to Biol 1-2 and 1A-2A (General Biology) listed under the Departments of Botany and Zoology.

UPPER DIVISION COURSES

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

171f,172w,173s Development of the Sciences

3,3,3 cr; prereq 1 yr biological 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. 171: Science of antiquity and Middle Ages. 172: Period from 1543 to 1800. 173: Selected high spots in modern science of 19th and 20th centuries.

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.

1f,w,s How to Study

2 cr (cr does not count toward B.A. degree)

Practical assistance to student in developing efficient methods of study and concentration, organizing material, preparing for examinations, and improving reading ability. Attention to orientation of students in attitudes and motivation, and relation of these to satisfactory performance.

11f,w,s Choosing a Vocation

2 cr (cr does not count toward B.A. degree); Hewer

Application of principles of occupational psychology to help students achieve self-understanding as a 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.

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; staff

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; staff

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.

3f,w,s Community

3 cr; prereq 1 or 2; staff

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, Work, Community

4,4,4 cr, §corresponding qtr of 1,2,3; staff

Similar to 1,2,3 except that 51,52,53 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; Dahl

Structural characteristics of poverty as described by social, legal, and economic criteria. Specific problems of poverty; unemployment, immobility, illiteracy, crime, and others. Private and public programs designed to alleviate poverty. Field work in depressed areas.

71f,72w,73s Selected Topics in the Classics of the Social Sciences

3,3,3 cr; prereq 15 Upper Division cr in two or more social sciences, C+ over-all average; Cooperman, Spear, staff

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 (Boas, Park, Kardiner). 73: Culture wholes (Le Play, Ratzel, Toynbee).

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 curriculums 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 Science 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 com-

prehensive 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 institutions 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 hereafter 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. Selection can ordinarily be made from the following list, but 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.

(Credits shown in parentheses)

Anth 1A—Introduction to Anthropology: Prehistoric Man and Culture (5)	Geog 4—Human Geography (5)
Anth 2A—Introduction to Anthropology: Cultural Anthropology (5)	Geog 41—Geography of Primary Production (5)
Econ C—Introduction to Economic Analysis (3)	Hist 1,2,3—Civilization in Modern World (9)
Econ 1-2—Principles of Economics (6)	Pol A-B—The State in Modern World (9)
Geog 1—Geography of Natural Resources (5)	Pol 25—World Politics (3)
	Pol 26—American Foreign Policy (3)

108 / Course Offerings and Major Requirements

- SSci 1-2-3—Introduction to Social Science (12) Soc 3—Introduction to Sociology: Social Problems (3)
Soc 1—Introduction to Sociology: Man in Modern Society (3)

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 fine arts, humanities, literature, and philosophy, for which the following courses may be considered:

(Credits shown in parentheses)

- | | |
|--|---|
| Art 1,2,3—Introduction to Art (11) | Hum 1-2-3-4—Humanities in Modern World (20) |
| CLit 45-46-47—Nature of Literature (9) | Hum 11, 12, 13—European Heritage (15) |
| Engl 19,20—Great English Writers (6) | Hum 21, 22, 23—American Life (9) |
| (or) Engl 21, 22, 23—Introduction to Literature (15) | Mus 31, 32, 33—Music Literature (6) |
| Engl 37, 38, 39—Modern Literature (9) | Phil 1—Problems of Philosophy (5) |
| | Phil 11—World Religions (5) |

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.

For the general international relations major the 45 credits in major courses must include a prescribed core curriculum of 30 or 33 credits comprising the following courses:

(Credits shown in parentheses)

- | | |
|---|---|
| Jour 124—International Communications and Foreign Affairs (3) | Pol 184—International Politics I (3) |
| (or) Jour 112—Communication and Public Opinion (3) | (or) Pol 187—International Organization I (3) |
| Jour 131—Public Opinion and Persuasion (3) | Econ 104—International Economics (3) |
| Pol 175—Diplomacy (3) | Geog 143—Political Geography (3) |
| Pol 180-181—International Law: Peace (6) | Hist 109, 110, 111—Europe in 20th Century (9) |
| | (or) Hist 115E, 116E, 117E—World War II (3) |

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 credits in the social sciences and, whenever available, 6 credits 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 credits will be distributed among courses in foreign language and literature and in fine arts, humanities, and philosophy. The rest of the 60 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*.

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; required for all international relations honors candidates; prereq 90H

150H Honors Course: Senior Honors Seminar

3 cr; open to international relations majors admitted to the honors program, or by §

Reading and research seminar on selected international relations topic.

151H Honors Course: Supervised Research Paper

3 cr; required for all international relations honors candidates; prereq 150H

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 jour-

nalism 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; related services; copywriting and layout; print and broadcast production; media, market, and consumer analysis; newspaper management, circulation, promotion; public relations; sales and promotion; mass communications research; journalism teaching.

Two additional degree programs offered co-operatively 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 nonjournalism 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 either 8 credits in American history (Hist 23, 24) in his Lower Division program or 6 American history credits in his Upper Division program (selections from Hist 81, 90, 93; 139C, 140C, 141C; or 142A, 143A, 144A are especially 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.

No student whose average is lower than C will be permitted to enroll in any journalism course, in either Lower Division or Upper Division.

● **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 co-ordinate 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 co-ordinated programs, which may include joint majors or interdepartmental planning.

● **News-Editorial Major Sequence for Bachelor of Arts**—Maximum of 45 credits 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 credits in journalism. Six of the elective credits must be numbered above 90. Students of superior scholarship may substitute outside courses for 6 of the additional credits with adviser approval.

In some cases other modifications of the sequence may be approved by the adviser.

● **Advertising Major Sequence for Bachelor of Arts**—Maximum of 45 credits including Lower Division courses in journalism.

Requirements:

- A. Jour 57, 60, 79, 112, 161-162, 163, 164; Mktg 57, Psy 156
- B. 3 credits from an adviser-approved area

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, 107, 107C, 117, 117C, 147, 187; Econ 69, 120 and either QA 51, Soc 45, or Psy 70.

Students of advertising wishing special training in commercial design are advised to elect work in the Department of Art. A student may prepare for a general minor in art by electing Art 23, 24, 25.

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, 170.

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, 58, 60; advertising majors should elect Jour 53, 59; 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, 71, 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 for news-editorial majors are Jour 18, 60, 79, 115, 121, 161, 177; for advertising majors Jour 16, 41, 50, 71, 101, 109, 115, 121, 177.

Photojournalism—students should elect Jour 6, 53, 65, 66; recommended are Jour 107-108, 84-85; Art 50, 83, 84, 85, and 3-6 credits 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 credits 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 credits chosen from among Jour 57, 90 or 121, 103, 109, 111, 112, and 124. EdT 74 (see *Bulletin of the College of Education*), 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 nonprofessional minor by undergraduates or graduates: Jour 90 or 121, 103, 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 fifth year of journalism work should consult a journalism adviser.

LOWER DIVISION COURSES

1f,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; 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; aspects of advertising. Laboratory exercises in fact-gathering and journalistic writing.

2 (see Spch 2)

3w Mass Communication in Modern World—Mass Media

3 cr, §Spch 3
Mass media and their social and cultural effects. Interaction between audience and media. The popular arts. Related areas of communication; advertising, public relations, propaganda. Future of mass media and mass culture.

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 in print and electronic media. Evaluation and criticism of visuals in creative typography, photography, and other visual techniques. Lectures, projects, and critiques.

6f,w Beginning Photojournalism

3 cr; prereq soph; Schuneman
Photography as a 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, 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; Charnley, Gillmor, Hage, Lindsay, Sim
Study of and practice in commonly used forms of reporting. Problems of news handling, access to information, ethics. Effective feature writing.

16w,s Mass Communications Law

2 cr; prereq 1, §14; Gerald, Gillmor
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, and other legal problems of communications media.

18f,w,s Principles of Advertising

3 cr; prereq soph, 1, C avg and §Comp 27...1 or §1 for Upper Division students; Barden
Theory, principles, and functions of advertising; its role in economic, social, and marketing structure. Newspapers, magazines, and radio and 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.

50f,w,s Interpretive Reporting

3 cr; prereq soph with B avg in I and 14 or jr, 14, C avg, Comp 27 or #; Charnley, Gerald, Gillmor, 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 I, 14; 4 hrs lab per wk; Sim

Basic copy editing problems and techniques; headline writing; proof reading.

53s Picture Editing

3 cr; prereq 14 or 18 or #; Schuneman
Criteria for picture selection. Analysis of work of Cartier-Bresson, Bourke-White, Capa, Eisenstaedt, Riis, Salomon, and others. Combining word and picture in communications; editing; layouts; editing television news film. 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 make-up. Press association teletype service.

56w Design and Typography: Editorial

2 cr; prereq 51 and ¶55 or #; Wilson
Principles of design in newspaper and periodical make-up. Type display. Relation of headlines to display and text. 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.

58s Newspaper and Periodical Design and Typography

3 cr; prereq 56 and #; Wilson
Analysis of major trends in format, make-up, and typography of newspapers and magazines. Experiments in make-up. Individual laboratory projects.

59w Advanced Advertising Typography and Layout

3 cr; prereq 57; Wilson
Practice and experimentation with display typography; individual laboratory projects

in retail advertising display, point of purchase display, posters, direct mail brochures, labels, etc.

60f,s Graphic Arts: Processes

3 cr; prereq jr; Wilson
Letterpress, offset lithography, and gravure printing processes; engravings and copy preparation; significant graphic arts developments.

65w Advanced Photojournalism I

3 cr, §7; prereq 6; Schuneman
Picture content for visual reporting by print and television. History of photojournalism. Law, invasion of privacy and ethics. Use of miniature camera, light and lighting. Lectures and laboratory.

66s Advanced Photojournalism II

3 cr; prereq 65 or #; Schuneman
Visual presentation of information and ideas. Magazine photography; production of series and sequences. Principles of advertising illustration. Photojournalism markets.

71w Business and Industrial Journalism

3 cr; prereq 41 or 51
For journalism majors and minors particularly interested in study of business and industrial press as specialized communications media; analysis and evaluation of content, staffs, and production. Gathering material for and writing of feature articles and other types of copy in the industrial field.

73f,w Magazine Writing

3 cr; prereq 50 or 41 and #; Charnley, Hage
Planning and writing feature articles for general, class, and trade publications; marketing; problems of magazine editing; employee publication and industrial journal problems.

74w Magazine Editing

3 cr; prereq 73, 56 or ¶56 and #; Charnley
Planning and editing consumer and specialized magazines; problems of magazine layout, design, and make-up; book publishing procedures. Individual projects in magazine editing and advanced magazine 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 (formerly 3 cr); prereq 18, 57, 60; 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.

82s Supervision of School Publications

3 cr; prereq 41 or 51; Sim

For those who plan to become advisers of high school or college newspapers, year-books, magazines. Emphasis upon editorial content, staff organization, editing, typography, make-up, and business management.

84f Radio News and Public Affairs

3 cr; prereq 50; Lindsay

Radio as medium of journalistic communication. Radio newsroom; radio news writing, editing, preparation. Uses of research in radio journalism. Basic preparation for television news.

85w Television News and Public Affairs

3 cr; prereq 84; Lindsay

Television as medium of journalistic communication. Television newsroom; television news writing and visualization. Use of news film camera; editing, scripting news film. Uses of research in television journalism.

86s Radio and Television Script Writing

3 cr; prereq 51 and # for journalism majors, 1 and # for speech-radio majors; not offered 1966-68

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; Charney, Emery

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 communication media. Individual news media and news commentators.

93f Community Newspaper

3 cr; prereq 41 or 51 or ¶41 or ¶51; Sim

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; Sim

Analysis of management problems: advertising, circulation, and commercial printing as sources of income; records and cost systems, plant layout and inventories; operating expenses; 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,w 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; communication of science and technology in 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.

106s Critical Writing

3 cr; prereq an Upper Division writing course and #; Charney, 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 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 History of Journalism

3 cr; Emery

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 in America.

110w Topics in History of Journalism

3 cr; prereq 109; Emery

Intensive study of significant individuals, newspapers, and periodicals in history of American journalism; examination of major periods of change and developing trends. Individual projects and readings.

111f Development of American Broadcasting

3 cr; Charney, 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; the journalist as broadcaster.

116 / Course Offerings and Major Requirements

112f,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 diffusion of information and in opinion formation.

114s Mass Communication Theory
3 cr; prereq 112; Nixon

Study of research concepts and findings that seem to offer the most promise for development of a general theory of mass communication. Analysis of research findings 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 newspapers, magazines, radio, television, and motion pictures. Procedures for study of mass media effects.

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, #; staff

118H (See 118)

121w Mass Media in a Dynamic Society

3 cr; prereq 18 or 50 for journalism majors, # for others; Gerald
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
Individual project method is used for analyses of communications problems of current importance in light of their social, economic, and technological environment. Conducted in small seminar-like groups.

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; Nixon

Channels of international communication and news gathering agencies. Factors affecting flow of news throughout the world. Role of foreign correspondent. Relation of communications to foreign affairs and international understanding.

125w Communication Systems of the Western World

3 cr; prereq 15 cr in social sciences with an Upper Division course in in-

ternational relations recommended; Nixon
Communications in other democracies as compared with the United States and with totalitarian systems. British Commonwealth, the Netherlands, Scandinavian countries, Switzerland, France, and Latin America emphasized; problems of constructing a free press in Germany, Italy, and Japan following World War II; prospects for newly developing areas.

126s Communications in Authoritarian Society

3 cr; prereq 15 cr in social sciences with an 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 of communications in selected communist states and other dictatorships.

131w Public Opinion and Persuasion

3 cr; prereq 112; Carter, Tichenor
Advanced study of theories of opinion formation, persuasion, and attitude change. Studies of the 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, Nixon, Gillmor
Analysis of major political, economic, and social developments and their interpretation in the editorial, interpretative article, and commentary.

142s News Interpretation for Radio and Television

3 cr; prereq 85; Lindsay
Preparation, writing, scripting of news analyses, commentaries, editorials, documentaries, interpretative material for electronic media. Emphasis on editorial investigation and content, style and techniques, audience and effects, in presentation of such programs.

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 of science content in various media.

149w Public Relations Principles

3 cr; prereq sr, 78, 112 or 15 cr in social sciences and #; Lindsay, Emery
Principles of public relations function; application of principles in industry, government, education, social agencies, and other

institutions; pertinence of social science research and journalistic implication in the public relations process. Case studies and analyses.

150s Institutional Public Relations

2 or 3 cr; not open to journalism majors; prereq sr, #; Lindsay
Principles and practices of public relations in public health, social work, education, and other community institutional service fields. Use of mass media and journalistic implications of public relations process.

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, rate economics.

162f,w Advertising: Radio and Television Media

3 cr; prereq 18, 79, ¶161 or #; Barden
Contrasts and similarities of radio and television characteristics; interaction of sponsor, agency, station network, and station representative; program and market selection; rate structure, audience analysis; creating and measuring impact of commercials.

163f,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; comparison of rates and relative economy of media purchasing, scheduling and appropriations; cases and problems.

164w,s Current Advertising Developments and Problems

3 cr; prereq sr, 163 or #
Creative, management, research, media, and technical developments in advertising. Discussion and analysis of specific problems and case studies to aid in the advertising-marketing process. Contributions of related fields of behavioral sciences and communications.

177f 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 the United States, areas of present tension. The Bill of Rights and journalism today.

190s Advanced Problems in Journalistic Writing

3 cr; prereq grad, demonstration of acceptable writing achievement and #; Charnley, Hage
Investigation and analysis of problems of advanced professional accomplishment in the fields of journalistic writing. Uses of literary and journalistic forms. Development of individual effectiveness in journalistic presentation.

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 105 and 102 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.

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 *Bulletin of the Library School* and the *Bulletin of the Graduate School*.

A special 24-credit 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 for advice.

118 / Course Offerings and Major Requirements

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 teaching 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; Wezeman, Van der Boom

General reference tools and other sources of information. Theory and practice of reference work.

103 Cataloguing and Classification

3 cr; Simonton, Samanisky

Basic principles of descriptive cataloguing, rules of entry, subject headings and classification in libraries, for all types of libraries.

104 Selection of Library Materials

3 cr; Freeman, Wezeman

Techniques, standards for selection of books, magazines, pamphlets, phonograph records, films, etc.

105 History of Libraries and Librarianship

3 cr; Shove

Social trends affecting libraries and their functions in modern society; librarianship as a profession.

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. Required for minimum certification.

172 Reading Guidance for Adolescents

3 cr; prereq 104; Olson, Kromer

The library's relationship to the teen-ager in terms of his interests and needs. Method of introducing books and developing and guiding reading. Required for minimum certification.

173 Reading Guidance for Adults

3 cr; prereq 104; Wezeman

The learning and reading ability of adults. Books are read and discussed in the fields of light fiction, psychology, religion, travel, history, biography, essays, poetry, drama, and science. Books are reviewed from the standpoint of adult reading and evaluation of book collections.

Linguistics

● Major Sequence in Arts College—Clas 106-107 or Anth 180-181, and at least 21 additional credits in the following courses chosen after consultation with adviser. All candidates are expected to have a fair knowledge of Latin.

General Courses/For details, see listing under each department involved

Ling 1-2-3† Introduction to Study of Language

3-3-3† cr; prereq undergrad; Lehn

Descriptive analysis. Historical analysis. World languages, dialects, and contrastive grammar. Introduction to methods by which history and structure of language is studied. Fulfills "A" in distribution requirements for bachelor of arts degrees.

Clas 56f Elementary Linguistics

3 cr; prereq 1 yr foreign language study on college level or equiv or #

Engl 60s Introduction to the English Language

3 cr; Allen

Clas 106w-107s Introduction to the Study of Language

3-3 cr; prereq 56 or §

Ling 151f,152w,153s Readings Course

1 to 3 cr per qtr; for majors only

Anthropology (Anth)

Anth 180-181† Descriptive Linguistics

3-3† cr; prereq Δ; Spencer

Anth 185 Language and Culture

3 cr; prereq 2A or 100 or Δ; Spencer

Classics

Clas 56f Elementary Linguistics

3 cr; prereq 1 yr foreign language study on college level or equiv, or §; D Swanson

Lat 101 Structure of Latin

3 cr; prereq 3 cr Latin above 60 and Clas 56

Clas 106w-107s Introduction to Study of Language

3-3 cr; prereq 56 or Δ; D Swanson

Lat 133s Vulgar Latin

3 cr; open to advanced students of Latin or a Romance language with §; offered 1967-68 and alt yrs; D Swanson

Grk 73 Hellenistic Greek

3 cr; prereq Δ; offered 1966-67; D Swanson

Grk 101 Structure of Greek

3 cr; prereq 2 yrs Greek and Clas 56; offered 1966-67; D Swanson

Skt 181f-182w-183s Readings in Sanskrit

3-3-3 cr; prereq sr or §

East and South Asian Languages

Chin 105-106-107 Introduction to Chinese Linguistics

3-3-3 cr; prereq Chin 103 or Clas 56 or §; S Wang

Indn 106-107 Hindi Linguistics

3-3 cr; prereq §, some background in linguistics; Staneslow

Indn 105 Structure of Hindi

3 cr; prereq Clas 56, Anth 180, or §; Staneslow

Jpn 105-106-107 Introduction to Japanese Linguistics

3-3-3 cr; prereq Jpn 103 or Clas 56 or §

English (Engl)

60s Introduction to the English Language

3 cr; prereq Comp 1-2-3 or Comm 1-2-3 and 5 addtl cr...or Engl A-B-C... or 5 cr in 21,22,23; Allen

165f,w Structure of Modern English

3 cr; prereq 5 cr in literature in English Department, exclusive of classics and A-B-C; Allen

100f Old English

4 cr; prereq 5 cr in literature in English Department, exclusive of classics and A-B-C

166 History of English Language

3 cr; prereq 5 cr in literature in English Department, exclusive of classics and A-B-C; offered when feasible; Allen

102w Readings in Old English Prose and Verse

3 cr; prereq 100

103s Beowulf

3 cr; prereq 100

174s American English

3 cr; Allen

120 / Course Offerings and Major Requirements

German (Ger)

- 60 Analysis of Modern German Structure for Teachers
2 cr; prereq 56A or 4 and Δ; C Wood
- 107-108-109† Structure of Modern German
3-3-3† cr; prereq sr with #, grad; offered 1966-67; C Wood
- Linguistic approach to study of structure of present-day German.
- 110-111-112† Middle High German
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
- 114-115† Methods of Comparative Germanic Linguistics
3-3† cr; prereq 113; C Wood
- 119-120-121† Old High German
3-3-3† cr; prereq 112 or #; Coleman
- 122-123† History of the German Language
3-3† cr
- 125 Runic Inscriptions
3 cr; prereq #; C Wood
- 126 Old Saxon
3 cr; prereq 121; C Wood

Middle Eastern Languages

- Arab 54f-55w-56s Dialectic Analysis
3-3-3 cr; prereq Arab 5; staff
- Arab 105w Structure of Arabic
3 cr; prereq 2 yrs of Arabic or #; staff
- Arab 154f-155w-156s Seminar: Development of Arabic Language and Literature
3-3-3 cr; prereq #; staff
- Heb 151f-152w-153s Northwest Semitic Inscriptions
3-3-3 cr; prereq Heb 53 or #; staff

Philosophy (Phil)

- 162 Philosophy of Language
3 cr; prereq Phil 2, 6 Upper Division
- credits in philosophy or #; offered when feasible; Mason

Psychology (Psy)

- 117 Analysis of Behavior
3 cr; prereq Psy 2, one course numbered 50 or above; MacCorquodale
- 118 Verbal Behavior
3 cr; prereq Psy 2, one course numbered 50 or above; MacCorquodale

Romance Languages

- Fren 107-108-109 Structure of Modern French
3-3-3 cr; prereq 57 or ¶57 or #; Mantini
- Span 107-108-109 Structure of Modern Spanish
3-3-3 cr; prereq 57 or # or ¶57; Narváez
- Rom 114s Introduction to Romance Philology
3 cr; Williams

Scandinavian (Scan)

121-122-123 Old Norse: Language and Literature

3-3-3 cr; prereq one Germanic language other than modern English, or ‡; Hasselmo

124 The Structure of the Scandinavian Language

3 cr; prereq one Germanic language other than modern English; Hasselmo

125 History of the Scandinavian Languages

3 cr; prereq one Germanic language other than modern English; Hasselmo

126 Seminar: Scandinavian Linguistics

3 cr; prereq 124 and 125 or ‡; Hasselmo

Slavic and East European Languages

Russ 107-108-109 Structure of Modern Russian

3-3-3 cr; prereq 4-5-6 or ‡; Donchenko

Russ 125-126-127 History of the Russian Language

3-3-3 cr; prereq 6 or equiv

Slav 113-114-115 Old Church Slavic (Old Bulgarian)

3-3-3 cr; prereq Clas 56 or equiv

Speech, Communication, and Theatre Arts

Spch 67 Phonetics

3 cr; prereq 5; Wendahl

SSPA122 Voice Science

3 cr; prereq 119, 120, 121

SSPA120f Anatomy and Physiology of the Speech and Hearing Mechanisms

3 cr; prereq Spch 119 or ‡; Lassman, McDermott

SSPA123 Laboratory Instrumentation

3 cr; Wendahl

Lithuanian/see Slavic and East European Languages

Marriage/see Family Studies

Mathematics (Math)/Institute of Technology

● Major Sequence in Arts College—

Prerequisites:

Math 42-43-44

Requirements:

A. Math 55, 106, 107-108 or 125A-125B or 130A-130B

B. At least 21 additional credits 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 *Bulletin of the Graduate School*.

● **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 42-43-44, 60 and 21 additional Upper Division credits. For specific requirements see *Bulletin of the College of Education*. *Minor recommendation*: Entrance credit in solid geometry or its equivalent; Math 42-43-44, or 60, and 9 additional Upper Division credits.

● **Placement of Students**—The placement decision in beginning mathematics courses is made for every freshman student at the time of admission, using the ACT tests and high school record. Results are available in the student's college office. Advanced standing students continue mathematics begun elsewhere, or if they have had none, take a placement test after arriving on campus.

Students who have studied the advanced topics of algebra traditionally labeled as college algebra, substantial analytic trigonometry, and elementary parts 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 description see the *Bulletin of the Institute of Technology*. Students who begin the sequence 21-22-23, 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.

LOWER DIVISION COURSES

Zf,w,s Preparatory Mathematics
No cr; no prereq; 5 hrs per wk; special fee

Supplements background in algebra for students whose background is insufficient. Covers most of material of high school

elementary and higher algebra courses; emphasis on the latter.

Tf,w,s Trigonometry
3 cr (open for cr if taken before 43, even to students with high school trigo-

ometry); prereq plane geometry and high school higher algebra and satisfactory Mathematics Placement score; §10 allowed

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 the 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 the imagination; currently important areas of research and application; aesthetic, cultural, humanistic qualities. Emphasizes illustrative material.

5A-Bf,w,s Foundations of Arithmetic

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 a logical and axiomatic basis of the rules for arithmetical operations with integers, rational numbers, and real irrational numbers; the real number line and inequalities as necessary background for teaching arithmetic in elementary school, topics from geometry and congruences; with some attention to the history of the subject and its role in our culture and civilization.

8 Solid Geometry

See *Bulletin of Institute of Technology*

10f,w,s College Algebra and Analytic Geometry

5 cr, §10A, §15; prereq high school higher algebra and satisfactory Mathematics Placement score

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. 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; prereq high school higher algebra and T or high school trigonometry and satisfactory Mathe-

matics Placement score; 1st course of a 2-qr sequence, specifically designed for students in pre-business administration curriculum and for other students requiring an 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 the Math 15, 42-43-44 sequence

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 *Bulletin of Institute of Technology*

12 College Algebra and Trigonometry

See *Bulletin of Institute of Technology*

14 Laboratory

See *Bulletin of Institute of Technology*

15f,w,s College Algebra

5 cr, §10, 10A; prereq high school higher algebra and T or high school trigonometry and satisfactory Mathematics Placement score

A standard college algebra course for students planning to take the sequence in analytic geometry and calculus. Functions and graphs, quadratic equations in one and two variables, progressions, complex numbers, inequalities, theory of equations, permutations and combinations, 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 *Bulletin of Institute of Technology*

21H-22H-23H Honors Courses: Calculus and Analytic Geometry

See *Bulletin of Institute of Technology*

30 Fortran Survey and Orientation

See *Bulletin of Institute of Technology*

31-32-33 Calculus and Analytic Geometry IV, V, VI

See *Bulletin of Institute of Technology*

31H-32H-33H Honors Courses: Calculus and Analytic Geometry

See *Bulletin of Institute of Technology*

40f,w,s Introduction to Calculus

5 cr, §42; prereq 15 or 10 and T or high school trigonometry

For those wishing a brief introduction of calculus, including some integration. 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, §40 or 42; prereq 10A; a 2nd course of a 2-qr sequence, specifically designed for students in the pre-business administration curriculum and for other students requiring an 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 the Math 15, 42-43-44 sequence

Limits and derivative differentiation of the elementary functions of one and several variables with applications to rates of change, maxima and minima, approximations by differentials, integration with standard forms and applications to area volume, simple differential equations.

42f,w,s-43f,w,s-44f,w,s Analytic Geometry and Calculus I-II-III

5-5-5 cr, §40; 43-44 are available for

Upper Division cr to all except mathematics and physics majors; prereq 15 or 10 and either T or high school trigonometry; may enter 43 from 40 if grade in 40 is A or B

Elements of analytic geometry and calculus. Plane analytic geometry including straight line, conic sections, parametric representations, polar co-ordinates, translation and rotation of axes. Introduction to solid analytic geometry, functions and limits, differentiation 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; 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

These courses are designed for students with a special interest in mathematics, and will cover material not in the 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.

60f,s Synthetic Metric Geometry

3 cr; prereq 21 or 42

Euclidean geometry including ruler and compass constructions and theorems on the triangle and circle not studied in a 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 *Bulletin of Institute of Technology*

70f,71w,72s History of Mathematics

2,2,2 cr; for the student with a general knowledge of mathematics and some curiosity about the historical development of mankind; prereq for any qtr 43 or 23

Development of main branches of contemporary mathematics within framework of a 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 Mathematical Problem Seminar

3 cr; prereq 44 or 32

Problems ranging from elementary algebra and geometry through undergraduate mathematics will be assigned and discussed weekly.

104 Variational Problems

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; prereq 55

Problem course, methods for solving ordinary differential equations of various types with the necessary theory for developing these methods.

107f,w-108w,s Advanced Calculus

3-3 cr; 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 32 or 44

Elementary properties of integers; prime and composite numbers; Euclid's algorithm; congruences; the theorems of Fermat and Wilson; primitive roots; indices; Diophantine equations.

110f,w,s Tutorial Course in Advanced Mathematics

Cr ar; prereq 32 or 44

Qualified students whose needs are not met by courses offered may make special arrangements for obtaining the content of other graduate courses regularly offered by the department.

111Aw-Bs Development of the Number System

3-3 cr; prereq 32 or 44

Systematic construction of the real number system by extension from the natural numbers via rational numbers to irrational numbers; negative numbers; properties of the system; operations with numbers and laws governing the operations.

112f Elementary Set Theory

3 cr; prereq 32 or 44

Basic properties of operations on sets, cardinal numbers, simply ordered sets, well-ordered sets, ordinal numbers, axiom of choice, axiomatics.

112Af-Bw-Cs 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.

115Af-Bw-Cs Differential Geometry

3-3-3 cr; prereq 32 or 55 and 131A or ¶131A

Curves in the 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 the theory of continuous transformation groups. Differential geometry of n-dimensions; parallelism, affine connection, curvature.

116Af-Bw Modern Geometry

3-3 cr; prereq 131A or ¶131A for 116B

Geometric transformations; similarities, affinities, collineation, inversion. The notion of a transformation group. Projective geometry as a study of the invariants of the general linear group (Erlanger Program). Problems in geometry of transformation groups, mathematical analysis of the space problem.

117Af-Bw-Cs Geometry

3-3-3 cr; prereq for each qtr 32 or 44

Selected chapters of geometry, such as convex bodies, projective geometry, geometry and imagination, elementary algebraic geometry, geometry of transformation groups, axiomatic geometry, geometrical constructions.

120 Group Representations

3 cr; prereq 131A; offered when feasible

Elementary theory of finite groups and of infinite abelian groups with some application to permutation and crystallographic groups; representation by matrices, characters.

125Aw-Bs Critical Reasoning in Mathematical Analysis

3-3 cr; prereq 32 or 44

Notions of limit, sequence, series, function, derivative and integral. Gives more mature understanding of these concepts. Technique

126 / Course Offerings and Major Requirements

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 the behavioral sciences. Examples and problems taken from the fields concerned. Topics include matrices, functions of several variables, probability, difference equations, learning models, two-person games.

130Af-Bw-Cs Introduction to Analysis

3-3-3 cr; principally designed for students planning to take grad work with a major in mathematics, as preparation for grad courses in analysis; prereq 32 or 55

Theory of real numbers; elements of point set theory; limits; continuity; infinite sequences and series; integration and differentiation; vector analysis.

Stat 131f-132w-133s Theory of Statistics

3-3-3 cr; prereq ¶55 for 131, ¶107-108 for 132-133, or equiv

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.

131A-B-C Linear Algebra and Group Theory

3-3-3 cr, §149, §142-143, §180; prereq 32 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 #; 3 rec hrs per wk

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; 3 hrs per wk

Introduction to integral equations with emphasis on applications and techniques of solution including the Fredholm formula, Neumann series, Laplace transforms, suc-

cessive 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 22 or 43 or ¶22 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 the 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 others, they are mainly analytic.

142-143 Linear Algebra

3-3 cr, §149, §131A-B-C; prereq 32 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 32 or 44

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 Calculus V: 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 co-ordinates, dyadics, applications.

147H Honors Course: Vector Analysis

3 cr; prereq #; 3 rec hrs per wk

A more theoretical and intensive treatment of the topics in 147.

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 44

Determinants, matrices, linear equations, vector spaces, quadratic and bilinear forms, characteristic roots, and 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 a parameter or variable limits, Stieltjes integral.

153 Advanced Calculus II

3 cr; prereq 108 or 151

Infinite series, computation with series, series with variable terms, uniform convergence, power series. Improper integrals. Fourier series and orthogonal functions. Fourier integrals. Special functions.

155-156 Tensor Analysis with Application

3-3 cr; prereq 147, 149...or 131A, 147... or #

157-158-159 Methods of Applied Mathematics

3-3-3 cr; prereq 108 or 151 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.

164-165-166 Theory and Programming of Modern Digital Computers

3-3-3 cr, §65, §165A; prereq 32 or 55 or #

Number systems. Analysis of arithmetic algorithms. Logical organization. Storage, control, and input-output units. Basic and advanced machine language and compiler programming. Libraries, advanced assembly techniques, interpretive systems, compilers. Application to mathematical and physical problems. Informal laboratory.

167 Fourier Series and Boundary Value Problems

3 cr, §173; prereq 32 or 106

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 147, 174, or 147, 168A, or #

General equations of fluid mechanics. Concepts from thermodynamics. Classical constitutive equations. Specialization to various subfields of fluid mechanics: hydrostatics, barotropic perfect fluids, gas dynamics, and viscous flow theory. Examples of exact solutions.

173-174-175 Elementary Partial Differential Equations

3-3-3 cr, §167, §168A; prereq 32 or 106 or #

Partial differential equations of theoretical physics, one-dimensional wave equation, characteristics, classification of second order equations, heat and Laplace equations, uniqueness, maximum principle, orthogonal systems, Fourier series, separation of variables. Complex numbers, derivatives and integrals of analytic functions, elementary functions and their geometry, Cauchy's integral theorem and formula, Laurent expansions, evaluation of contour integrals by residues. Fourier and Laplace transforms and their inversion, method of residues, applications to ordinary and partial differential equations, applications to the heat, wave, and Laplace equations.

178A-B-C Introduction to Probability

3-3-3 cr; prereq 108 or 151 or Stat 133 or #

Logical development and various applications of probability. Probability spaces, random variables, central limit theorem, Markov chains.

180 Group Theory

3 cr; prereq 143 or #

Permutation groups; groups related to geometrical configuration; invariant subgroups, the Jordan-Hölder composition theorem, Sylow groups, Abelian groups, elementary divisors, representation theory, applications.

181-182-183 Selected Topics in the Theory of Numbers

3-3-3 cr; prereq #

181A-B Topology of the 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 continue, Jordan curve theorem.

128 / Course Offerings and Major Requirements

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.

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-Euclidean Geometry

3 cr; prereq 32 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; prereq 32 or 44; 3 rec hrs per wk
Elementary and intuitive concepts associated with typical curves and surfaces. Construction of models. Elements of homotopy.

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 approximations, 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 co-ordinates and classical projective 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 a curve. First and second fundamental forms for a surface, Gauss curvature. Meusnier, Euler, Dupin theorems.

196-197-198 Special Functions in Mathematical Analysis

3-3-3 cr; prereq 168A or 174 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 background.

Microbiology (MicB)

● Major Sequence in Arts College—

Prerequisites:

- A. 10 credits in biological science
- B. 15 credits in inorganic chemistry and analytical chemistry
- C. 8 credits in organic chemistry

Requirements:

- A. May be taken concurrently with microbiology courses:
 1. Math 10 and 40

2. 12 credits of college physics

3. A foreign language is strongly recommended

B. MicB 53 or 153, 116, 121, and 16 additional Upper Division credits in microbiology or approved related subjects. MicB 116A strongly recommended for majors.

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 biological sciences, or ‡; Schmidt, Lindorfer, staff

Lectures, demonstrations, and laboratory instruction in morphology, physiology, taxonomy, and ecology of bacteria. Practical applications of fundamental principles.

102s** Medical Microbiology

4 cr; for other than med students; prereq 116; Johnson

Pathogenic bacteria, fungi, and viruses in relation to disease; principles of infection, pathogenesis, and immunity; microbiological techniques for laboratory diagnosis and antibiotic determination.

103s Soil Microbiology

4 cr; prereq 53 or 153, 8 cr in organic chemistry and ‡; Schmidt

Methods for enumeration and study of microflora and microfauna. Biochemical activities of soil population.

110s Microbial Genetics

3 cr; prereq 53 or 153 or ‡; offered 1966-67 and alt yrs; Bradley

Genetic mechanisms in bacteria, bacteriophages, fungi, protozoa, and algae. Mutagenesis; selection; adaptation; cytoplasmic inheritance; patterns of genic recombination; fine structure of genetic material.

111s Experimental Microbiology

5 cr; prereq 53 or 153 and 121 or ‡; staff

Advanced laboratory in comparative morphology, taxonomy, and physiology of bac-

teria. For microbiology majors and others interested in biological and chemical aspects of microbes. Stresses enrichment, isolation, identification, cultivation, structure, and function of microorganisms.

112s General Mycology

3 cr; prereq 53 or 153 or ‡; offered 1967-68 and alt yrs; Bradley

Physiology; genetics; development; ecology; evolution; taxonomy; economic importance of the 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

** Microscope required. Students may obtain use of microscope by purchasing \$3 microscope cards from the bursar.

130 / Course Offerings and Major Requirements

metabolism including oxidations and fermentations; nutritional requirements; antimicrobial agents; autotrophic mechanisms; and microbial differentiation.

122 Physiology of Bacteria Laboratory

3 cr; required of all grad students in microbiology and open to others by §; prereq 121; offered 1st term Summer Session only; Rogers

Techniques employed in study of bacterial physiology and metabolism.

124f Biology of Viruses

3 cr; prereq 53 or 153 and 121; Plagemann

Structure, composition and properties of bacterial and mammalian viruses; their in-

teraction 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 §; staff

153f** Biology of Microorganisms

4 cr, §53; prereq 5 cr in biological sciences, OrCh 61-62 or §; Dworkin

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 least one Middle Eastern language, and to acquaint him through original texts and through English translations with the culture of the peoples of the Middle East.

The department offers at present a major in Arabic and looks forward to offering a major in Hebrew within the next 2 years.

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 Heb 74, 75.

Arabic (Arab)

● **Major Sequence in Arts College**—Arab 51-52-53, 71-72-73, 81-82-83; 9 credits in courses 50 or above.

LOWER DIVISION COURSES

1f-2w-3s (formerly 61-62-63) **Introduction to Arabic Grammar and Reading**

5-5-5 cr (formerly 3-3-3 cr); staff
Vocabulary forms and syntax, intensive graded reading and speaking facility.

4f-5w-6s (formerly 1-2-3) **Beginning Spoken Arabic**

5-5-5 cr; staff
Study of one modern dialect. Students expected to use the laboratory for practice, and may take course simultaneously with or independently of Literary Arabic.

UPPER DIVISION COURSES

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

51f-52w-53s (formerly 71-72-73) **Intermediate Arabic**

4-4-4 cr; prereq 3 or §; staff

Readings in simple, classical, and modern prose; constant review of grammar.

** Microscope required. Students may obtain use of microscope by purchasing \$3 microscope cards from the bursar.

54f-55w-56s (formerly 51-52-53) Dialect Analysis

3-3-3 cr; prereq 5; staff
Study of differences in various Arabic dialects, contrasting at least two of these.

61f-62w-63s (formerly 54-55-56) Arabic Composition

3-3-3 cr; prereq 53 or #; staff
Introduction to various styles of prose compositions in Arabic, and setting themes for compositions in Arabic.

71f-72w-73s (formerly 101-102-103) 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.

74f-75w-76s History of the Arabs

3-3-3 cr, §Hist 74-75-76; prereq # for 74; Chejne

74: From pre-Islamic days to downfall of the Umayyads of Damascus. 75: From the Abbasids to the fall of Baghdad in 1258. 76: From Crusades to modern times.

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. 78: Various branches of Muslim scholarship in medieval times. 79: Revivalist period from 19th century to the present with reference to transmission of ideas and to various intellectual movements.

81f-82w-83s (formerly 74-75-76) Survey of Arabic Literature

3-3-3 cr; prereq 63 or #; staff
Pre-Islamic, Umayyad, Abbasid, and modern prose and poetry at an advanced level.

91s (formerly 78) Asian Civilization: Islamic World

3 cr; prereq soph with #, or jr; staff

105w Structure of Arabic

3 cr; prereq 2 yrs of Arabic or #; staff
Descriptive analysis of the main structure of Arabic, classical and colloquial.

151f-152w-153s Directed Readings

1 to 3 cr per qtr; for advanced students wishing to work on special problems; prereq 63 or #; staff
Reading and periodic consultations.

154f-155w-156s Seminar: Development of the Arabic Language and Literature

3-3-3 cr; prereq # for 154; staff
154: Early state of the Arabic language from pre-Islamic times to middle of 8th century. 155: Development in the Golden Age of the Abbasid. 156: Decline of the language and its revival in modern times.

161f Hispano-Arabic Literature and Culture: History of Islamic Spain

3 cr; prereq #; Chejne

162w 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

191H-192H-193H Honors Course: Research

1 to 3 cr per qtr; prereq 153 or #
Individual studies for honors work at an advanced level.

Aramaic

UPPER DIVISION COURSE

101f-102w-103s Aramaic

3-3-3 cr; for students preparing for Biblical studies, ancient history majors, and students specializing in semitic languages; prereq 53 or #; staff

Introductory course stressing fundamentals of grammar and fluency in reading of Biblical and Ancient Aramaic, including the Aramaic parts of Daniel and Ezra, inscriptions and papyri from Syria, Egypt, Mesopotamia and the Persian Empire.

Hebrew (Heb)

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 a basic vocabulary of Biblical Hebrew. Reading of selected chapters in the book of Genesis. May serve as a foundation for Modern Hebrew.

132 / Course Offerings and Major Requirements

25 Survey of Hebrew Grammar

3 cr; for students who, through previous studies, have the ability to read simple texts, but desire a firm grammatical foundation; prereq at least 3 yrs study below college level, or #; staff

Intensive review of grammatical forms and patterns chiefly through a systematic analysis of a variety of Hebrew texts, oral drill, 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 the elementary level; open to qualified Lower Division students; prereq 3 or qualifying exam; staff

Selected readings from narrative portions of the *Bible*; readings in medieval and modern prose.

74f,75w Ancient Israel

3,3 cr, §Hist 74A,75A; no knowledge of Hebrew required; Paradise

History of Israel and development of its religion as seen against background of the ancient Near East. Special attention to the bearing of the civilizations of ancient Mesopotamia and Egypt on the cultural and social aspects of the *Bible*.

101f-102w-103s Advanced Biblical Hebrew

3-3-3 cr; for majors and others adequately prepared to read the *Bible* in Hebrew; prereq 53 or #; staff

Exegesis of a Biblical text with due attention to results of historical, linguistic, and archaeological research.

104f-105w-106s Postbiblical Literature

3-3-3 cr; prereq 53 or #; Toledano
Selections from various genres of postbiblical literature including philosophical, literary, legal, and religious texts.

114s Introduction to Comparative Study of Semitic Languages

3 cr, §Ling 114; prereq grad or #, and 1 yr of two semitic languages, ¶Heb 3; Paradise

Historical survey of linguistic development in the semitic languages. Selected problems in phonology and morphology.

151f-152w-153s Northwest Semitic Inscriptions

3-3-3 cr; prereq 53 or #; staff
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.

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 curriculums, to develop individual characteristics and attributes of leadership essential to an officer. For information concerning the requirements and the opportunities of this program, see the *Bulletin of Army, Navy, and Air Force ROTC* 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

Military Science I

41f,w Employment of Firepower

1 cr; Leadership Laboratory**

Provides student with understanding of organization of the Army for modern tactical and strategic environments. Modern units and techniques of the individual soldier.

42f,w Military Seminar

No cr; prereq 41 and Δ

U.S. Army customs and courtesies. Practical exercises in leadership, command, and individual and unit drill formation. Includes requirement of satisfactory completion of a concurrent course in communications, psychology, science, or political science as approved by PMS. IT students also must have approval of their departmental adviser for the concurrent courses.

43s United States Army and National Security

1 cr; Leadership Laboratory**

Survey: problems of national defense as pertains to U.S. Army in general war, limited and cold war, joint operations, and impact of modern technology on warfare techniques with emphasis on the individual's personal responsibilities as citizen and leader.

Military Science II

44f Military Maps and Aerial Photography

1 cr; Leadership Laboratory**

Tactical and strategic use of United States and foreign military maps, elementary cartography, and land navigation. Use of aerial photographs and modern surveillance systems in military mapping and tactical operations.

45w American Military History

3 cr, §Hist 45

U.S. Army operations from the American Revolution to the Korean War. Survey of the history of land warfare as applied to significant political, economic, social, and technical growth of United States.

46s Introduction to Basic Tactics

1 cr; Leadership Laboratory**

Small unit operations in conventional and unconventional battlefield environments. Training of combat soldier to include physical and psychological conditioning, technical proficiency, and motivation through leadership.

UPPER DIVISION COURSES

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

Military Science III

151f,w Problems of Special Warfare

3 cr; Leadership Laboratory** and concurrent academic course††

Problems of the law of war, guerrilla warfare, psychological warfare, and counterinsurgency/counterguerrilla operations as applied in modern military operations.

152w Advanced Tactics and Training

3 cr; prereq 151 and Δ

Small unit leadership and psychology of small groups in identification of personality characteristics, study of individual needs, values, and capabilities. Emphasis on solving leadership problems. Conduct of military

training and development of Army instructor. Practice teaching by the student. Advanced small unit operations in conventional and unconventional battlefield environments.

153s Functional Organization of the United States Army

3 cr; Leadership Laboratory**

Survey of history, training, equipment, and developmental trends of all combat arms and services. Tactical operations in all phases of land warfare. Field exercise encompassing all material studied in Mil 152 and 153 stressing practical application of techniques and principles under simulated tactical conditions.

** Leadership Laboratory is taught concurrently to all cadets during fall and spring quarters. This laboratory is designed so that individual students can demonstrate their progressive ability in individual and group drill. Progressive and extensive practice in voice and command, unit formations, exercise of command, bearing, and posture. Assists in identification and development of individual leadership traits, and qualities of character.

†† Includes requirement of satisfactory completion of a concurrent Upper Division course, 3 or more credits in communications, psychology, science, or political science as approved by PMS. IT students must also have the approval of their departmental adviser for the concurrent course.

Military Science IV

154f Command and Staff Operations

4 cr; Leadership Laboratory^{oo}
 Comprehensive study of combat operations and logistics as related fields. Principles of command management, staff organization and staff procedures, supervision, and coordination by the commander.

155w Role of United States in World Affairs

1 cr; concurrent academic course^{††}
 Analysis of the U.S. geographical position,

economic potential, and military potential, as compared with other world powers.

156s Army Administration

4 cr; Leadership Laboratory^{oo}
 Military personnel management procedures, including records, classification and assignment, unit fund accounting, and legal and military justice matters. Field exercise stressing practical application of material studied in 152-156. Service orientation for the newly commissioned officer.

Music (Mus)

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, 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 credits 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.

Students electing Upper Division sequences A and B are required to play or sing an *Upper Division Qualifying Examination* before enrolling in Upper Division.

^{oo} Leadership Laboratory is taught concurrently to all cadets during fall and spring quarters. This laboratory is designed so that individual students can demonstrate their progressive ability in individual and group drill. Progressive and extensive practice in voice and command, unit formations, exercise of command, bearing, and posture. Assists in identification and development of individual leadership traits, and qualities of character.

^{††} Includes requirement of satisfactory completion of a concurrent Upper Division course, 3 or more credits in communications, psychology, science, or political science as approved by PMS. IT students must also have the approval of their departmental adviser for the concurrent course.

Lower Division

Freshman Year

Music Theory: Mus 1T-2T-3T (3 cr per qtr)
 Applied Music: Mus 11 through 30 (2 or 4 cr per qtr)

Sophomore Year

Music Theory: Mus 4T-5T-6T (4 cr per qtr)
 Applied Music: Mus 11 through 30 (2 or 4 cr per qtr)
 History of Music: Mus 34, 35, 36 (3 cr per qtr)

Upper Division

During junior and senior years a student must complete an academic minor (see page 11) and one of the following major sequences:

A. Applied Music (Instrumental)—Total of 36 credits in applied music (Lower and Upper Division credit), including a minimum of 6 credits in Mus 11, Piano, or 11A-B-C, Class Piano (functional knowledge of the instrument or exemption by demonstrated ability). Senior recital required.

(Credits shown in parentheses)

Mus 84—Form and Analysis (3) 15 additional Upper Division credits in music
 Mus 97-98-99—Counterpoint (6)

B. Applied Music (Vocal)—Total of 36 credits in applied music (Lower and Upper Division credit), including a minimum of 12 credits in Mus 11, Piano, or 11A-B-C, Class Piano, or demonstrated ability to play simple accompaniments. Senior recital required.

(Credits shown in parentheses)

Mus 84—Form and Analysis (3) 15 additional Upper Division credits in music
 Mus 115, 116, 117—Vocal Literature (6)

C. History and Literature—Total of 24 credits in applied music (Lower and Upper Division credit), including a minimum of 12 credits in Mus 11, Piano, or 11A-B-C, Class Piano (functional knowledge of the instrument or exemption by demonstrated ability).

(Credits shown in parentheses)

Mus 84—Form and Analysis (3) 105-106, 107, 108, 109, 110, 124-125-126, 130, 130A, 131, 131A, 132, 132A, 133, 134-135-136, 144, 145, 146, 151-152, 154-155-156, 164-165-166
 Mus 97-98-99—Counterpoint (6)
 Mus 121-122-123—Advanced Harmony (6)
 Minimum of 21 credits from: Mus 104-

D. Theory and/or Composition—Total of 24 credits in applied music (Lower and Upper Division credit), including a minimum of 12 credits in Mus 11, Piano, or 11A-B-C, Class Piano (functional knowledge of the instrument or exemption by demonstrated ability).

(Credits shown in parentheses)

Mus 84—Form and Analysis (3) Mus 141-142-143—Orchestration (6)
 Mus 97-98-99—Counterpoint (6) Composition Major: Mus 127-128-129—Composition (6) plus 9 elective Upper Division credits in music
 Theory Major: 15 elective Upper Division credits in music
 Mus 121-122-123—Advanced Harmony (6)

136 / Course Offerings and Major Requirements

E. Piano Pedagogy—Total of 30 credits in Mus 11 and 61, Piano. A public performance required.

(Credits shown in parentheses)

Mus 84—Form and Analysis (3)

Mus 97-98-99—Counterpoint (6)

Mus 170-171-172—Piano Pedagogy I
(6)

Mus 180-181-182—Piano Pedagogy II
(6)

9 additional Upper Division credits in music

Modification of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Upper Division.

For a special curriculum in music education see the *Bulletin of the College of Education*. For courses in music education which are open to Arts College students, see page 142.

● **Music Minors**—A departmental minor consists of 15 Upper Division credits in music worked out in consultation with the chairman of the department.

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). Students with some performing ability may receive credit in voice, piano, organ, all instruments, Mus 11 through 30 and 61 through 80; private instruction without credit for beginners.

LOWER DIVISION COURSES

1f,w Introduction to Music

5 cr, §50 (see 50); Goode

Introduction to music in the repertory of our culture, exploring selected forms and styles from the 17th through 20th centuries. Listening abilities developed through aural analyses of musical textures, recognition of the articulation of phrases, periods, and sections leading to an understanding of the relationships of large units of musical form. These listening techniques, along with a discussion of aesthetic principles, are used to define musical styles.

1Tf,w-2Tw,s-3Tf,s Music Theory

3-3-3 cr; primarily for music majors and minors

Development of musicianship through both auditory and visual perception; participation in ear training, sight singing, keyboard drills.

4f,w,s Fundamentals of Music

2 cr; prereq nonmusic major

Knowledge of piano keyboard, major and minor scales, triads, elementary ear training, rhythmic dictation.

4Tf,w-5Tw,s-6Tf,s Music Theory

4-4-4 cr; prereq 3T; Malcolm

(Continuation of 3T) Greater emphasis on harmonic analysis, part writing, and clef reading.

7Af-Bw-Cs Ear Training

2-2-2 cr; primarily for music majors, transfer students deficient in aural aspects of theory; Malcolm

Résumé of aural work included in 1T-6T.

31f,32w,33s Music Literature

2,2,2 cr; primarily for those not majoring in music

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

** Students may receive credit for 2 years or 6 quarters of work completed at the University of Minnesota.

40f,41w,42s Orchestra

1,1,1 cr (music majors may earn total of 12 cr); prereq #: Sieber
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
Performances of major symphonic-choral works with the Minneapolis Symphony Orchestra, University Symphony Orchestra, and University Concert Band. Entrance by audition only.

43Sf,44S w,45Ss St. Paul Campus Chorus**

1,1,1 cr; prereq #
Prepares for at least one public appearance

each quarter as well as for special events connected with St. Paul Campus.

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 #
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 \$35 for 2 credits, or \$70 for 4 credits, per quarter is charged for individual lessons for all Lower Division students and nonmusic majors.

COURSES IN 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.)

Courses numbered from 11 through 30 (Lower Division) and 61 through 80 (Upper Division) carry either 2 credits per quarter (maximum of 10 private half-hour lessons) or 4 credits (maximum of 10 private hour lessons). A minimum of 12 credits is required in Lower Division applied music. A maximum of 36 credits in applied music may count toward a baccalaureate degree.

All students taking applied music *except for elective credit* are required to attend Music Hour, held weekly in Scott Hall Auditorium.

● **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 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.

** Students may receive credit for 2 years or 6 quarters of work completed at the University of Minnesota.

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**—Students who wish to take applied music as an elective should perform two compositions that reveal the student's level of performance.

Note—Applied music courses 11 through 30 and 61 through 80 are offered as electives for nonmusic majors and as part of degree programs for Lower Division and Upper Division music majors. For elective credit, place an E after course number. When taken for no credit, place the letter V after the appropriate number. Prerequisite for elective and Lower Division courses is an entrance examination; prerequisite for Upper Division courses is a placement test. Elective courses carry 2 credits; Lower and Upper Division courses carry 2 or 4 credits.

- | | |
|--|---|
| <p>11f,w,s Piano
2 or 4 cr; prereq entr exam; Weiser, Freed, McNab, Ivory</p> <p>11Af-Bw-CS Piano: Class Lessons**
2-2-2 cr; prereq 4 (nonmusic majors), # (others) for 11A; McIntyre
Development of skills at the keyboard in harmonization, improvisation, sight reading, accompanying, repertoire, technique.</p> <p>12f,w,s Voice
2 or 4 cr; prereq entr exam; Schuessler, Knowles, Oja</p> <p>12Af-Bw-Cs Voice: Class Lessons**
2-2-2 cr</p> <p>13f,w,s Violin
2 or 4 cr; prereq entr exam; McSpadden, Sambuco</p> <p>14f,w,s Viola
2 or 4 cr; prereq entr exam; McSpadden, Sieber</p> <p>15f,w,s Cello
2 or 4 cr; prereq entr exam; Jamieson</p> <p>16f,w,s Double Bass
2 or 4 cr; prereq entr exam; Fitch</p> <p>17f,w,s Flute
2 or 4 cr; prereq entr exam; Opava, Niosi</p> | <p>18f,w,s Oboe
2 or 4 cr; prereq entr exam; Angelucci</p> <p>19f,w,s Clarinet or Saxophone
2 or 4 cr; prereq entr exam; Fitch, Williams</p> <p>20f,w,s Bassoon
2 or 4 cr; prereq entr exam; Beckerman</p> <p>21f,w,s Trumpet
2 or 4 cr; prereq entr exam; Chenette, Tetzlaff</p> <p>22f,w,s French Horn
2 or 4 cr; prereq entr exam; Binstock</p> <p>23f,w,s Trombone
2 or 4 cr; prereq entr exam; Weinman, Zellmer</p> <p>24f,w,s Tuba
2 or 4 cr; prereq entr exam; Walton</p> <p>25f,w,s Percussion
2 or 4 cr; prereq entr exam; Dahlgren, Fine</p> <p>26f,w,s Harp
2 or 4 cr; prereq entr exam; Miller</p> <p>27f,w,s Organ
2 or 4 cr; prereq entr exam; Fleischer</p> <p>27Af-Bw-Cs Organ: Class Lessons**
2-2-2 cr; prereq #; Fleischer
Elementary organ technique, hymn playing, simple organ literature.</p> |
|--|---|

** 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.

- 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 *Bulletin of the Graduate School*.

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.

- 54f-55w-56s (formerly 60-61-62) Instrumental Ensemble**

2-2-2 cr; Oberg
Performance of chamber music of great composers; sonatas, trios, quartets, quintets, etc.

- 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
A 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 the Minneapolis Symphony Orchestra in a 2-hour demonstration-concert of master works. Emphasis upon structure, elements of or-

chestral tone color, and roles of the performer and conductor.

- 83su Piano Teachers Summer Workshop**
4 to 6 cr; prereq 2 yrs piano, 2 yrs theory

Discusses the place of music in liberal education of the individual, with implications drawn for the setting and approach for piano instruction in the private studio. If teacher registers for 4 credits, he attends a 2-hour period of lectures and demonstrations for each day of the 5-week summer term. If teacher registers for 6 credits, he is given the opportunity to teach, with the guidance of the instructor, a group of four children for a 1-hour group lesson twice a week. Lectures and demonstrations may be taken without credit. Credit is not available for both 83 and the 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.

- 90f,91w,92s Advanced Instrumental Ensemble**

2-2-2 cr; prereq sr, 56; Oberg
Performance of more difficult chamber music looking toward public presentation.

- 96Hf,w,s Honors Course: Independent Study**

2-6 cr; prereq 3.00 grade point avg
Primarily for departmental honor students; culminating in a senior thesis in music history and literature, or music theory, or normal piano, or an original composition, or a special outstanding recital.

- 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 credits 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, Oja

140 / Course Offerings and Major Requirements

- 63f,w,s Violin**
2 or 4 cr; prereq entr exam or placement test; McSpadden, Sambuco
- 64f,w,s Viola**
2 or 4 cr; prereq entr exam or placement test; McSpadden, Sieber
- 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
- 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; staff
Advanced literature in piano, voice, organ, and orchestral instruments.
- 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 the 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 1967-68 and alt yrs; Riedel
Musical culture in middle and northern Germany during 17th and 18th centuries. The 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 1967-68 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 concerto 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 1966-67 and alt yrs; Riedel
The 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 the 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.
- 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 the 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 1966-67 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.

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

Opera as music and drama: production, styles, cultural background, from late 16th century to present—modern repertoire, broadcast by the Metropolitan Opera Company.

127f-128w-129s Composition

2-2-2 cr; prereq 99 and 123; Fetler, Argento

Original work in various forms.

130f Symphonies of the Classical Era

3 cr; prereq 6 cr in music history or art history or political history since 1750 or English or German literature since 1750, or #; offered when feasible

Through Mozart and Haydn; evolution of form and style in relation to contemporary thought and art through the French Revolution.

130Af Early Romantic Music

3 cr; prereq 36 or #; offered 1966-67 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

Evolution of Beethoven's symphonic form and style as a reflection of intellectual, political, and artistic currents of the Napoleonic era.

131Aw Late Romantic Music

3 cr; prereq 36 or #; offered 1966-67 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 the Romantic Era

3 cr; prereq same as 130; offered when feasible

Schubert, Schumann, Mendelssohn, Berlioz, Liszt, Brahms, Franck, Dvorak, Tchaikovsky, Bruckner, Richard Strauss; their relation to the dominant romantic trends of the 19th century.

132As Neoromantic Music

3 cr; prereq 36 or #; offered 1966-67 and alt yrs; Riedel

1885-1917. Music of Bruckner, Mahler, Sibelius, 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 the music of the period 1550-1759. A study of 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

1-1-1 cr; prereq 6T; Argento

Practical ear training as applied to the piano; chorales are transposed into all keys in four parts and expanded chords by melodic and harmonic analysis; modulation.

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 the Renaissance to the 20th century.

140E Interpretation of Choral Masterpieces

3 cr; offered when feasible

A short-term modification of Mus 140.

141f-142w-143s Orchestration

2-2-2 cr; prereq 6T; Argento

Scoring instruments of the orchestra for ensemble combinations and full orchestra.

144f,145w,146s Bach Through Beethoven

3,3,3 cr; prereq 36; offered 1967-68 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

The student is given the opportunity to prepare and perform operatic roles both standard and contemporary. A union of musical and dramatic interpretation is emphasized and the student, in addition to his ensemble work, is given scheduled private instruction. All projects and roles will be sung in the 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 composi-

142 / Course Offerings and Major Requirements

tion emphasized, as well as the various national schools of organ playing. Demonstration on the organ.

151w-152s Introduction to Musicology

3-3 cr; prereq 110, or #; offered 1967-68 and alt yrs; Riedel

Scope, aims, methods, and resources of research in musicology, including fields of acoustics, psychology, sociology, and theory.

154f-155w-156s Music in the Middle Ages and Renaissance

3-3-3 cr; prereq 36; offered 1967-68 and alt yrs; Riedel

Monophonic music from the 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.

161w-162s Band Arranging

3-3 cr; prereq 6T, 143 or MuEd 65 or #; offered 1967-68 and alt yrs; Benicriscutto

Scoring for band instruments; creative arrangements for marching or concert bands.

164f-165w-166s Music in the Baroque Era

3-3-3 cr; prereq 36; offered 1966-67 and alt yrs; Laudon

Development of the vocal, instrumental, and sacred styles of the 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 the following situations: 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 the student teacher gains practical, on-the-spot experience and training in teaching children.

175w Training in Advanced Musicianship

3 cr; prereq 6T; Fetler

Dictation of melodic, harmonic, rhythmic, two- and three-part contrapuntal materials; score reading, both vocal and instrumental; training in tonal memory.

177s Analysis of Contemporary Music

3 cr; prereq 6T; Fetler

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 the following situations: piano minor, piano major, music education piano major, nonmusic major, in college teaching. Also adult education and extension classes, along with the public school teacher. In addition to demonstration and lecture classes there will be a required laboratory set-up whereby the student teacher gains practical, on-the-spot experience and training in teaching adult students.

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.

190 Hymnology

3 cr; prereq 6 cr in 34,35,36 or Art 56-57-58 or Phil 11 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.

197f-198w-199s Advanced Counterpoint

2-2-2 cr; prereq 99; Fetler

Bach's *Art of the Fugue*; practice in technique of writing 3- and 4-voice fugues; contrapuntal devices and problems; analysis of polyphonic examples of various periods.

Music Education (MuEd)/College of Education

The following courses in music education are regularly open to Arts College students:

65f,w Instrumentation

3 cr; prereq Mus 6T

Orchestra and band instruments in combina-

tion; revision of materials suitable for school use; discussion of capabilities of school performers on the various instruments.

Natural Science/see Interdisciplinary Programs

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 *Bulletin of Army-Navy-Air Force ROTC* 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, 12-13 or §
Underlying reasons and circumstances under which the 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 the 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.

1. Line Sequence

3rd Year

51f Naval Operations 3 cr

Elements of shipboard operations; relative motion, tactical communications, rules of the 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 navigating 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 float- ing 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

144 / Course Offerings and Major Requirements

and application of Uniform Code of Military Justice.

63s Principles of Naval Leadership

3 cr; prereq 62, 68 or #

Management psychology, individual differences, group dynamics, and the art of manipulating these to produce a desired good.

II. Supply Corps Sequence

3rd Year

57f Supply Management I

3 cr

Introduction to Navy supply management. Case studies and problems in organization, budgets, and inventory management.

58w Supply Management II

3 cr; prereq 57 or #

Series of problems in financial management and accounting, and procurement of naval material.

59s Supply Management III

3 cr; prereq 58 or #

Series of problems in management of material in a shipboard supply department, security, inventories, and supply support.

4th Year

63s Leadership

3 cr; prereq 62, 68 or #

Management psychology, individual differences, group dynamics, and art of manipulating these to produce a desired good.

67f Retail Sales

3 cr

Ship's store afloat introduction. Organization and operation of ship's stores afloat. Problems and case studies in ship's stores.

68w Retail Sales: Leadership

3 cr; prereq 67 or #

Operation and management of service activities, balance sheets and operating statements. Problems and case studies in ship's stores afloat. Principles of naval management and functions of the Uniform Code of Military Justice.

III. Marine Corps Sequence

3rd Year

54f Evolution of the Art of War I

3 cr

Evolution of warfare from earliest recorded times up to and including the Mexican War.

55w Evolution of the Art of War II

3 cr

Continuation of the evolution of the art of war, to include Civil War campaigns, World Wars I and II, plus a 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 the 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, German, History, Philosophy, Political Science, Scandinavian, Sociology.

See under the respective departments for courses.

Norwegian/see Scandinavian

Oriental/see Slavic and Oriental Languages

Personal Orientation/see Interdisciplinary Programs

Philosophy (Phil)

● Major Sequence in Arts College—

Prerequisite for major sequence:

Phil 1 and 2. Phil 1A and 2A ordinarily will not be accepted for this requirement

Requirements:

At least 10 credits in the history of philosophy area, one of which shall be 52 or 52H, and other philosophy courses to make a total of at least 30 credits in Upper Division philosophy courses including at least 12 credits in courses numbered 100 or above

Phil 1, 2, and 3 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 202).

LOWER DIVISION COURSES

1f,w,s Problems of Philosophy

5 cr; prereq^{oo}; staff

Introduction; main fields of investigation; permanent problems; principal methods and schools of philosophy; historical and contemporary views.

2f,w,s Logic

5 cr; staff

Difference between logical and fallacious reasoning; functions and uses of language; rules of good definition and sound argument.

3f,w,s Ethics

5 cr; prereq^{oo}; staff

Examination of problems that arise when human beings attempt to think systematically about conduct and values (are there absolute standards?), problem of free will, and survey of historical views about the right and the good.

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.

Attention is called to Ortl 75, 76, 77 (Asian Civilization) and Arab 162 (Hispano-Arabic Culture) listed under Slavic and Oriental Languages.

50f,51w,52s,53f General History of Western Philosophy

4,4,4,4 cr; staff

Survey of major developments in Western philosophic thought from its beginnings

among the 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 Des-

^{oo} Phil 2 is open to freshmen. Phil 1 and 3 are open to third-quarter freshmen.

146 / Course Offerings and Major Requirements

cartes through Hume; impact of science; backgrounds of contemporary philosophical problems. 53: Later modern philosophy from Kant through the 19th century.

50H,51H,52H,53H Honors Course: General History of Western Philosophy

4,4,4,4 cr; prereq #: staff
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
Introduction to principles of scientific method; definition and classification; observation, measurement, experiment; elementary statistical concepts; hypotheses, evidence, and confirmation; nature and limits of the scientific enterprise.

90H,91H,92H Honors Course: Undergraduate Seminar

3,3,3 cr; prereq honors candidacy and 6 cr in Upper Division philosophy courses; staff

Topics of contemporary interest and importance taken up in weekly meetings under direction of a different faculty member each quarter. Independent work and active participation by members of the seminars will be emphasized.

93H Honors Course: Thesis

2 cr; prereq sr, honors candidate in philosophy, GPA of 3.50 or better in previous work

Individual assignments carried out under direction of honors candidate's adviser or another 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.

103w Eighteenth-Century Philosophy

3 cr; for history and literature students as well as philosophy majors; offered when feasible

Philosophic background of 18th-century enlightenment; rationalist and empiricism currents; deism; optimism; great chain of being. Readings from works of Locke, Hume, Voltaire, Diderot, Pope, and others.

105f Introduction to American Philosophy: Puritanism to Pragmatism

3 cr; especially for students of American history and literature; Ross
Puritanism, the Revolutionary period, transcendentalism, and evolutionism. Among philosophers discussed: Edwards, Paine, Emerson.

106w American Philosophy from William James

3 cr; prereq 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 1967-68 and alt yrs; Raab, Mason

Ethical principles, theoretical and practical, at the basis of the social order.

109f History of Ethics: British Moralists

3 cr; prereq 3 or 1 qtr history of philosophy or #: offered 1967-68 and alt yrs; Terrell

Ethical theory as it developed in Great Britain from 17th through 19th centuries. Emphasis on Hobbes and the reaction against him, Butler, the moral sense theory and Hume, intuitionism and utilitarianism, Sidgwick.

110f History of Ethics: Selected Classical Moralists

3 cr; prereq 3 or 1 qtr history of philosophy or #: offered 1966-67 and alt yrs; staff

One or more systems of moral philosophy outside of the British tradition (see 109), e.g. Plato, Aristotle, Stoics and Epicureans, Aquinas, Kant. 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 #

Philosophy of Aristotle based on analysis of selected passages from his major works. Particular attention given to his relationship to Plato. Survey Aristotelian tradition in Western philosophy.

116 Plato and Aristotle

3 cr; prereq 50 or #: offered when feasible; Cohen, Mathews

Comparative presentation of metaphysics and epistemology of Plato and Aristotle, special reference to problem of the universals.

118 Medieval Philosophy

3 cr; prereq 50, 51 or #: Matthews
Selected topics in the 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 1966-67 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 1967-68 and alt yrs; Lewis, Terrell
Detailed study of the *Essay Concerning Human Understanding*.

130 Berkeley

3 cr; prereq 52 or #; offered 1966-67 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 #; 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 the 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 #; staff
Current systematic and critical philosophies, especially idealism, naturalism, realism, pragmatism, positivism as represented by their principal exponents.

141f,142w,143s Studies in Contemporary Philosophy

3,3,3 cr; prereq 52 or #; staff
Intensive studies of works of selected individual philosophers. Usually a single philosopher will be studied each quarter, the philosophers studied varying from year to year. Specific topics will be announced in *Class Schedule*.

150s Ethical Theory

3 cr; prereq 3 or #; staff
Distinguishing characteristics of a moral judgment; application of moral judgments to motives, acts, and persons; moral freedom and responsibility; moral relativity, skepticism, and justification of moral standards; examination of representative systems.

151w Principles of Aesthetics

3 cr; prereq 3 cr in philosophy or #
Sample topics: standards of evaluation; aesthetic experience; representation, meaning.

154f Elements of Symbolic Logic

4 cr; prereq 2 or #; Brodbeck
Systematic introduction to modern logic. Topics include dimensions of language; calculus of propositions, classes, and relations; applications to foundations of mathematics.

155w Intermediate Symbolic Logic

3 cr; prereq 154; Brodbeck
Axiomatic development of logic; properties of deductive systems; modal and many-valued logics; application to philosophical problems.

156s Philosophy of Logic

3 cr; prereq 155 or Math 112A or #; Brodbeck
Selected issues, including application of logic to philosophical problems: logic and reality; logical truth; relation of logic to mathematics; theory of descriptions; theory of types; paradoxes; identity; intensionality.

157 Metaphysics

3 cr; prereq 1 qtr history of philosophy, or #; Brodbeck
Some recent attempts to discover general principles characteristic of the universe.

158 Theory of Knowledge

4 cr; prereq 2 or #; Feigl
Analysis of the logical structure and experiential roots of knowledge. Topics include meaning, validity, truth, reason and experience, induction, criteria of objectivity, and reality.

160 Philosophy of Science

4 cr; prereq 2 or #; Feigl
Provides a clear understanding of meaning, methods and implications of modern science through examination of basic concepts, pre-suppositions, and procedures. Topics include description, explanation, prediction, experimentation; space, time, number, matter,

148 / Course Offerings and Major Requirements

energy, causality, probability, statistics; organic life, evolution, mind.

162 Philosophy of Language

3 cr; prereq 2, or 6 Upper Division cr in philosophy or #; offered when feasible; Mason

Study of contemporary attempts to deal with philosophical problems about language. Special attention given to concept of meaning. Some attention given to notions of language found in various forms of philosophical analysis.

164 Logic of the Social Sciences I

3 cr; prereq 15 cr in social science, psychology, education, history, or philosophy, or #; Brodbeck

Philosophical examination of foundations of behavioral sciences in general; concepts, laws, and theories; concrete illustrations from these sciences; problems of value and objectivity; logical nature of social philosophies and ideologies; role of social scientist in a democratic society.

165 Logic of the Social Sciences II

3 cr; prereq 164; offered when feasible; Brodbeck

More specific study of items introduced in preceding course; with greater attention to logical methods and problems peculiar to each of the specialized social sciences.

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 1966-67 and alt yrs; Murphy

Concept of law with special focus on contemporary discussion. Sample topics: definition of law; law, morality, and custom; legal reasoning; causation and responsibility.

171 Philosophies of India I

3 cr; prereq 5 cr in philosophy or 3 cr in courses pertaining to India or #; Potter

Basic concepts of Hindu, Buddhist, and Jain philosophies of life, as found in ancient and modern sources. Introduction to Indian theory of philosophical argumentation and inference.

172 Philosophies of India II

3 cr; prereq 171 or #; Potter

Introduction to problems of systematic inquiry in India, with special attention to analyses of causation, freedom, and knowledge in Buddhism, Jainism, Nyaya-Vaisesika, Purva-Mimamsa, Samkhya, and the various Vedantas.

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 #; staff

Topics to be arranged according to students' interests.

193f,194w,195s Seminar: History and Philosophy of Theology

3,3,3 cr; prereq sr or #

Physical Education for Men (PEM)

A towel and locker fee of \$3 per quarter plus \$1 deposit, or a 3-quarter fee of \$7.50 plus \$1 deposit is charged students using physical education facilities for classes for which a uniform is required. Uniforms for class work or recreational activity may be rented for \$3 per quarter.

The following courses in physical education for men are open, with a maximum of 6 credits, to Arts College students. Students planning to enter the College of Education later are held to a requirement of 3 credits.

1A1f-Bw-Cs Sports Education

1-1-1 cr, except where noted

Orientation in variety of recreational sports. Objective: to provide instruction in those sports in which men may participate now and in future years as a means of obtaining recreation, regular exercise, and social intercourse.

1A1f-Bw-Cs Sports Education

Adapted Activities

Archery, Bgn

Badminton, Bgn^{oo}

Bowling, Bgn^{††}

Conditioning

Dance, Ballroom, Bgn^{oo}

Dance, Folk and Square. Bgn^{oo}

^{oo} Coed

^{††} Additional Charge

Dance, Modern, Bgn ^{oo}	Skiing ^{oo} ††††
Diving	Wrestling
Fencing, Bgn ^{oo}	1Cs
Figure Skating, Bgn ^{oo} (1A, 1B)	Angling
Foundations of Physical Activity (2 cr)	Softball
Golf	2Af-Bw-Cs Sports Education
Gymnastics	1-1-1 cr, except where noted
Handball, Paddleball	Offers an opportunity to develop proficiency in elected recreational sports.
Ice Skating, Bgn ^{oo} (1A, 1B)	2Af-Bw-Cs Sports Education
Judo, Bgn††	Bowling, Int††
Karate, Bgn††	Dance, Modern, Int ^{oo}
Scuba Diving§§	Dance, Modern, Adv ^{oo} (2A, 2B)
Swimming, Bgn	Fencing, Int ^{oo} (2B, 2C)
Tennis, Bgn	Life Saving
Trampoline, Apparatus	Swimming, Int
Volleyball, Bgn	Tennis, Int
Weight Training	Water Safety Instructor (2 cr)
Wrestling	
1Af	2Bw
Soccer	Figure Skating, Int ^{oo}
Touch football	Ice Dancing ^{oo}
1Bw	2Cs
Basketball	Dance, Ballroom, Int ^{oo}
Curling ^{oo} ††	Dance Techniques ^{oo}
Officiating: Football, Volleyball	Judo, Int††

Physical Education for Women (PEW)/College of Education

The following courses in physical education for women are open to Arts College students. No more than 6 credits in activity courses may apply to the B.A. degree. Students planning to enter the College of Education later are held to a requirement of a specified number of credits as designated by the major department. After this credit requirement has been met, a choice may be made of "additional elective" courses listed below.

Students register for physical education classes on the Minneapolis Campus at 205 Johnston Hall and at Coffey Hall on the St. Paul Campus. Students should check the *Class Schedule* to be sure their activity rating is suitable for the class in which they registered.

All classes meet in Norris Gymnasium for the first meeting (except St. Paul Campus classes). 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 possible cancellations.

^{oo} Coed

†† Additional Charge

†† Furnish own equipment or uniform

§§ Rent Equipment

150 / Course Offerings and Major Requirements

Fall Quarter (A)

Aquatics

- Swimming, Beginning
- Swimming, Advanced Beginning
- Swimming, Intermediate
- Swimming, Advanced
- Swimming, Synchronized
- American Red Cross Senior Life Saving
- American Red Cross Water Safety Instructors' Course

Dance

- Ballroom Dance, Beginning (co-ed)
- Folk and Square Dance, Beginning (co-ed)
- Modern Dance, Beginning, Intermediate (co-ed)

Gymnastics

- Conditioning Exercises
- Posture and Individual Exercise
- Apparatus

Individual and Dual Sports

- Archery, Beginning
- Badminton, Beginning
- Bowling, Beginning, Intermediate
- Fencing, Beginning (co-ed)
- Golf, Beginning
- Riflemarksmanship, Beginning
- Skating, Beginning (co-ed)
- Skating, Figure, Beginning (co-ed)
- Social Games and Mixers

Team Sports

- Volleyball, Beginning, Intermediate
- Field Hockey

Winter Quarter (B)

Aquatics

- Swimming, Beginning
- Swimming, Advanced Beginning
- Swimming, Intermediate
- Swimming, Advanced and Diving
- American Red Cross Senior Life Saving
- American Red Cross Water Safety Instructors Course

Dance

- Ballroom Dance, Beginning (co-ed)
- Folk and Square Dance, Beginning (co-ed)
- Modern Dance, Beginning, Intermediate, Advanced (co-ed)

Gymnastics

- Adapted Activities
- Conditioning Exercises
- Posture and Individual Exercise
- Stunts, Tumbling, Free Exercise

Individual and Dual Sports

- Archery, Beginning
- Badminton, Beginning, Intermediate
- Bowling, Beginning, Intermediate
- Curling, Beginning (co-ed)
- Fencing, Beginning, Intermediate (co-ed)
- Riflemarksmanship, Beginning
- Skating, Beginning (co-ed)
- Skating, Figure, Beginning, Intermediate (co-ed)
- Ice Dancing (co-ed)
- Social Games and Mixers
- Skiing, Beginning and Intermediate (co-ed)

Team Sports

- Basketball, Beginning, Intermediate
- Volleyball, Beginning, Intermediate

Spring Quarter (C)

Aquatics

- Swimming, Beginning
- Swimming, Advanced Beginning
- Swimming, Intermediate
- Swimming, Advanced and Diving
- Swimming, Synchronized
- American Red Cross Senior Life Saving
- American Red Cross Water Safety Instructors Course

Dance

- Ballroom Dance, Beginning, Intermediate (co-ed)
- Folk and Square Dance, Beginning (co-ed)
- Modern Dance, Beginning, Intermediate, Advanced (co-ed)
- Dance Techniques (co-ed)

Gymnastics

- Adapted Activities
- Conditioning Exercises
- Posture and Individual Exercise

Individual and Dual Sports

- Archery, Beginning, Intermediate
- Fencing, Beginning, Intermediate (co-ed)
- Golf, Beginning, Intermediate
- Riflemarksmanship, Beginning

Social Games and Mixers
Tennis, Beginning, Intermediate, Ad-
vanced
Track and Field

Team Sports

Lacrosse
Softball

Additional Elective Courses—These courses may not be used to meet any college requirement in physical education:

25f,w,s American Red Cross First Aid
(Standard and Advanced Course)

2 cr; co-ed

54s Camp Leadership

3 cr; co-ed

76s The Teaching of Creative Dance for Children

3 cr; co-ed; prereq beginning modern dance

80s History and Trends in Dance
3 cr; co-ed; prereq #

87f Dance Composition

2 cr; co-ed; prereq #

88s Advanced Dance Composition

2 cr; co-ed; prereq #

89s Dance Production

3 cr; co-ed; prereq #

Physics (Phys)/Institute of Technology

● **Major Sequence in Arts College**—Phys 100A-101A-102A, 103A-104A-105A, 107-109-111, 123; plus 6 credits of a laboratory course chosen from 120, 121, 122, 133, 133A, 134, 136, 144, 146, 148. 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).

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 third year, a student must have completed Phys 9 or 23, 23A and Math 32 or 106 by the end of his second year.

In consultation with his adviser, the student may wish to petition the Scholastic Standards Committee for substitution for the required Phys 107-109-111. For some students, an appropriate substitution would include Phys 50-51 plus 6 credits chosen from Phys 113, 120, 121, 122, 124, 125, 144, 146, 148, 165, 166, 167.

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 curriculums leading to these two majors see the *Bulletin of the College of Education*.

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.

152 / Course Offerings and Major Requirements

2. Students who have any credit in one of the sequences Phys 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 22).

LOWER DIVISION COURSES

1-2-3 Introduction to Physical Science

3-3-3 cr; not prereq for advanced physics courses; prereq high school algebra and plane geometry for 1, 1 or $\frac{1}{2}$ for 2, 1 or $\frac{1}{2}$ for 3; 3 lect hrs per wk

Demonstration lectures on principles of physics and underlying physical phenomena. 1: Mechanics. 2: Heat and electricity. 3: Sound and light.

1A-2A-3A Introduction to Physical Science Laboratory

1-1-1 cr; not prereq for advanced physics courses; prereq $\frac{1}{2}$ 1-2-3; 2 lab hrs per wk; combination of 1-2-3 with 1A-2A-3A may be used to fulfill the laboratory science group requirement in CLA Laboratory course given in conjunction with Phys 1-2-3.

4-5-6 General Physics

5-5-5 cr; primarily for premedical students; prereq Math 40 or $\frac{1}{2}$ Math 40 or equiv for 4; 4 lect, 1 quiz, 2 lab hrs per wk

4: Mechanics. 5: Heat and electricity. 6: Sound and light. Laboratory work is an integral part of course.

7-8-9 General Physics

5-5-5 cr; primarily for students majoring in physics, mathematics, or chemistry; prereq Math 21 or Math 22A or Math 42, Math 22 or $\frac{1}{2}$ Math 22 or Math 23A or $\frac{1}{2}$ Math 23A or Math 43 or $\frac{1}{2}$ Math 43 for 7...7 and Math 23 or $\frac{1}{2}$ Math 23 or Math 44 or $\frac{1}{2}$ Math 44 for 8...8 for 9; 4 lect, 1 quiz, 2 lab hrs per wk

7: Mechanics. 8: Heat, electricity. 9: Sound and light. Laboratory work is an integral part of course.

20 Elementary Physical Acoustics

5 cr, $\frac{1}{2}$ 3, 6, 9, 23; intended primarily for music and music education majors; prereq 1 yr high school algebra

Physical principles of acoustics and wave motion with particular application to the field of music and musical instruments. Laboratory work is an integral part of the course.

21 General Physics

4 cr; prereq $\frac{1}{2}$ 21A, Math 21 or $\frac{1}{2}$ Math 21 or Math 22A or $\frac{1}{2}$ Math 22A or Math 42 or $\frac{1}{2}$ Math 42; 4 lect and 1 quiz hr per wk

Classical mechanics.

21A Physics Laboratory

1 cr; prereq $\frac{1}{2}$ 21; 2 lab hrs per wk
Laboratory exercises in mechanics.

22 General Physics

4 cr; prereq 21, $\frac{1}{2}$ 22A, Math 22 or $\frac{1}{2}$ Math 22 or Math 23A or $\frac{1}{2}$ Math 23A or Math 43 or $\frac{1}{2}$ Math 43; 4 lect and 1 quiz hr per wk

Thermodynamics, sound, geometrical and physical optics.

22A Physics Laboratory

1 cr; prereq $\frac{1}{2}$ 22; 2 lab hrs per wk
Laboratory exercises in heat, sound, and optics.

23 General Physics

4 cr; prereq 22, $\frac{1}{2}$ 23A, Math 23 or $\frac{1}{2}$ Math 23 or Math 44 or $\frac{1}{2}$ Math 44; 4 lect and 1 quiz hr per wk

Electricity and magnetism.

23A Physics Laboratory

1 cr; prereq $\frac{1}{2}$ 23; 2 lab hrs per wk
Laboratory exercises in electricity and magnetism.

UPPER DIVISION COURSES

Upper Division credit is allowed for Phys 8-9 or 22-23 to students not majoring in chemistry, mathematics, or physics.

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

50 Intermediate General Physics

4 cr; prereq 6 or 9 or 23, Math 31 or $\frac{1}{2}$ Math 31 or Math 55 or $\frac{1}{2}$ Math 55; 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 $\frac{1}{2}$ 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 55 or ¶Math 55, 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 106 or ¶Math 106; 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 106 or ¶Math 106; 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 ; 3 lect hrs per wk
Atomic, molecular, and nuclear physics emphasizing implications for the 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, Δ during previous spring qtr
Employment (contracted by the student) with an industrial firm in a professional or semiprofessional capacity doing work in the field of physics. Applications must be approved by the department prior to employment. Ten weeks of summer employment with a written report on this work approved by both employer and the department.

100-102-104 Mechanics, Electricity, and Magnetism

4-4-4 cr, §100A or §MM 138 for 100; prereq 3rd yr, 9 or 23, Math 32 or

106 for 100...100 or MM 138 for 102...102 for 104; 4 lect hrs per wk

Theoretical course 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 3rd yr, 9 or 23, Math 32 or 106 for 100A...majors in fields other than physics may use MM 138 as prereq for 102A; 3 lect hrs per wk

Newtonian mechanics: emphasis on conservation principles. Topics include: particle dynamics in one, two and three dimensions with special attention to the central force problem; dynamics of a system of particles including general motion of a rigid body and normal-mode analysis of coupled systems; moving co-ordinate systems; mechanics of continuous media including wave motion and elementary hydrodynamics; general co-ordinates and the Lagrange formulation of mechanics. Mathematics beyond the prerequisites is developed as required.

103A-104A-105A Introduction to Electric and Magnetic Fields

3-3-3 cr; prereq 4th yr or §, 9 or 23, Math 32 or 106 for 103A; 3 lect hrs per wk

Classical theory, developed with aid of vector calculus. Topics include electrostatics and potential theory, magnetostatics, Maxwell's equations, material media and plasmas, electromagnetic waves, and electromagnetic radiation.

107-109-111 Atomic and Nuclear Physics

3-3-3 cr, §50 or §51; prereq 9 or 23, Math 32 or 106, § if taken out of sequence; 3 lect hrs per wk

Emphasis on interpretation of experimental phenomena. Topics include kinetic theory, Maxwell-Boltzmann distribution, special relativity, the nuclear atom, atomic and molecular structure and spectra, black-body radiation, wave mechanics, nuclear physics, modern developments in classical physics, astrophysics, particle physics.

108-110-112 Principles of Modern Physics

3-3-3 cr; prereq 51 or §, Math 153 or 108; 3 lect hrs per wk

Analytical course developing elementary quantum mechanics from its historical background with applications to atomic and nuclear physics. Topics include 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; prereq 4th yr physics major; 3 lect hrs per wk

154 / Course Offerings and Major Requirements

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 cr; prereq 51 or ¶107 or ¶108, $\#$; 6 lab hrs per wk
Techniques and methods used in physics research laboratories. Vacuum gauges and equipment; mass spectroscopy; X-ray diffraction; health physics; detection of charged particles, neutrons and gamma rays; and the measurement of several fundamental atomic constants.

123 Thermodynamics and Kinetic Theory

3 cr; intended primarily for students with background of sr physics majors; prereq 9 or 23, Math 32 or 106 or equiv; 3 lect hrs per wk
Formulation of the basic laws of thermodynamics concerning temperature, energy, and entropy, and their application to simple systems; introduction to kinetic theory of gases.

124 Statistical Mechanics

3 cr; prereq 123 or $\#$; 3 lect hrs per wk
Introduction to transport phenomena; principles of statistical mechanics with applications to equilibrium; properties of classical and quantum systems.

125 Introduction to Solid State Physics

3 cr; prereq 124 or $\#$; 3 lect hrs per wk
Structure; thermal, magnetic and dielectric, and electronic properties of crystalline solids.

131 Geometrical Optics

3 cr; prereq 3rd yr, 15 cr in physics, Math 23 or 44; 3 lect hrs per wk
Fundamentals of ray optics and study of its application to optical instruments and their components.

133 Physical Optics

3 cr; prereq 3rd yr, 15 cr in physics, Math 23 or 44; 3 lect hrs per wk
Wave theory of interference, diffraction, polarization, and double refraction, with a study of their applications.

133A Physical Optics Laboratory

1 cr; prereq ¶133; 3 lab hrs per wk
Parallel to 133.

134 Experimental Optics Laboratory

3 cr; prereq 3rd yr, 15 cr in physics, Math 23 or 44; 1 lect and 5 lab hrs per wk
Spectrometry, optics of compound lenses, photometry, absorption, interferometry, and polarized light.

136 Spectrum Analysis Laboratory

3 cr; prereq 3rd yr, 15 cr in physics, Math 23 or 44; 1 lect and 5 lab hrs per wk
Measurement of wave lengths, intensities and absorption coefficients in the infrared, visible, and ultraviolet regions of the spectrum.

144 Electrical Measurements

4 cr; prereq 9 or 23, Math 31 or 55; 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 Physics of Vacuum Tubes and Associated Circuits

4 cr; prereq 144 or $\#$; 3 lect and one 3-hr lab per wk
Characteristics of vacuum tubes, power supply and amplifier circuits with emphasis on applications to physics research.

148 Applications 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.

165 Introduction to Physics of the Atmosphere

3 cr; prereq 50, Math 32 or 106
Survey of physical processes that determine the mean state of the atmosphere. Topics in radiative transfer and thermodynamics are reviewed in preparation for the discussion of the heat budget and temperature distribution of the atmosphere. Atmospheric properties and phenomena treated 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. The basic equations of meteorological hydrodynamics are introduced and applied in actual weather situations.

167 Meteorology II

3 cr; prereq 166, vector analysis or $\#$
Introduction to theoretical meteorology. Critical examination of the mathematical models used to describe the large-scale flow processes; energy transformations in atmospheric flow; atmospheric turbulence and eddy transport.

171A-171B-171C Classical Physics

4-4-4 cr; prereq 104 or both 102A and 105A, Math 153 or 108, $\#$; 3 lect hrs and 1 problem session per wk
Classical mechanics, special theory of relativity, and classical electrodynamics. Application of advanced mathematical techniques to these subjects.

181A-181B-181C Quantum Mechanics

4-4-4 cr; prereq 110 or equiv, Math 153 or 108 or equiv, #; 3 lect hrs and 1 problem session per wk

Development from first principles. Schrodinger equation, angular momentum, scattering, matrix representations, spin, approximation methods, interaction with 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 1966-67 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 1966-67 and alt yrs

Cosmic rays, their characteristics, and their motion in the interplanetary and interstellar medium. Topics in x-ray and radio astronomy.

196 Propagation and Detection of High Energy Particles and Electromagnetic Radiation

3 cr; prereq 112, 171C or #

This course is effectively the first quarter of the cosmic ray sequence but may be taken by students specializing in other branches of physics. 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 1966-67 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 credits 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 the dean of the 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

Beginning course in physiology emphasizing physical and chemical foundations and utilizing a quantitative approach.

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

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; staff

156 / Course Offerings and Major Requirements

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; staff

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 and staff

107f Human Physiology

8 cr (5 cr without lab); cr given independently for 106 and 107; prereq same

as for 106; 5 hrs lect, 6 hrs lab per wk; Visscher and staff

110-111w Physics for Biologists

3-3 cr; primarily for premedical students and students majoring in biological sciences; prereq 6 and Math 40 or Δ ; 3 hrs lect per wk; J S Beck

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.

Polish/see Slavic and East European Languages

Political Science (Pol)

● **Preparation for a Major Sequence**—12 credits, comprising Pol 1-2 (6 cr) and A-B (6 cr); plus history (Hist 1, 2, 3 or 20, 21, 22), or economics (Econ 1-2 and QA 5), or sociology (Soc 1, 2, and 45). In addition Phil 2 and Psy 1-2 are recommended.

● **Major Sequence in Arts College**—The foregoing preparatory work is designed to provide a general knowledge of:

- A. Systems of government of the United States and of major European states
- B. Principal terms and concepts of political science

To this knowledge the major sequence should add:

- C. Knowledge of the works of a number of great contributors to political ideas
- D. Fairly exact and thorough knowledge of some extensive part of at least three of the following fields of political science:

1. Political Theory: Pol 99A and Pol 160 through 166
2. Comparative Government and Politics: Pol 60, 61, 99B, 141-142 through 159A-B, 196
3. International Relations: Pol 99C, 171 through 196
4. Politics and Behavior: Pol 51, 67, 99D, 137, 138, 167-168
5. American Governmental Systems and Processes: Pol 52, 53, 99E, 107 through 131, 176
6. Public Law: Pol 60, 61, 99F, 101, 102, 103, 109, 180-181-182, 183

In addition the student must show ability to study independently and to write a satisfactory term paper in at least one of the chosen fields; for this he must register in one of the following: Pol 92H, 93H, 94H, 95, 99A, 99B, 99C, 99D, 99E, 99F.

To these ends a major student must obtain 30 credits in Upper Division courses in political science (not more than 15 may be in any one field nor more than 24 in any two fields). These must be distributed among the fields chosen in a pattern approved by a major adviser so as to avoid excessive concentration in one or two fields or fragmentation among many. The major and minor work should constitute an integrated plan of study.

● **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 106 in this bulletin and see the special bulletin, *Programs in International Relations and Area Studies*; consult Sapin, McLaughlin, Turner, Holt, Klein, Riggs, or Blue.

Public Administration Program—A distinct field of public administration is not offered by the department, but a number of courses in public 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 167).

Honors Program—A departmental honors program is open to students who have completed Lower Division work with a 3.00 grade point average and who obtain departmental approval. Honors candidates must complete 33 Upper Division credits 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 credits can be taken in any one field. In addition 9 credits will be taken in special honors courses: junior tutorial courses in the scope and methods of political science (Pol 90H) and great issues and major literature of political science (Pol 91H), and a senior honors thesis (for which credit is given in either 92H or 93H or 94H). Candidates must also pass an oral examination by a faculty committee. For admission to the program consult Professor Scott.

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation:* At least 36 credits in political science including Pol 1, 2, A-B, 25, 40, and at least 18 credits in Upper Division courses.

In lieu of a teaching minor, students will be required to take at least 48 credits in other social science departments. For further information see *Bulletin of the College of Education*.

● **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 or fields of concentration 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

158 / Course Offerings and Major Requirements

a graduate minor or related field in political science for the M.A. degree, and in part for the Ph.D. minor. See the *Bulletin of the Graduate School*.

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. Pol 80 and 81 are specifically offered for nonmajors. 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.

LOWER DIVISION COURSES

Af,w-Bw,s The State in the Modern World

3-3 cr; nonmajor students may enter either qtr; Lippincott, Fogelman, Benjamin, Schwarz

Examination of principles, structure, operation of the modern state. Emphasis on nation state: historical development, democratic government (United States, Great Britain), totalitarian government (Nazi Germany, Soviet Russia), conflict between states.

Dw,Es Tutorial: The State in the Modern World

3,3 cr; prereq A or B with grade of B or better; staff

Intensive work in selected topics drawn from the subject matter of Pol A-B.

If,w,s-2w,s† American Government and Politics

3-3† cr; staff

Analysis of principles, organization, procedures, functions of government in the 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; staff

Intensive work in selected topics drawn from the subject matter of Pol 1-2.

25f,w,s World Politics

3 cr; Blue, Riggs, Klein

Introduction to contemporary international relations; policies of the great powers; nationalism; internationalism.

26f,w American Foreign Policy

3 cr; Blue, Penikis

Introduction to institutions and processes which determine American foreign policy.

30s American Public Policy

3 cr; Chase, Eidenberg

Analysis of policy to meet major foreign and domestic issues facing the 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; Lippincott, Fogelman, Cooperman
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; staff

Survey of discipline of political science, its central problems and unifying concerns; introduction to the important research methods and data available to political scientists.

91Hf Honors Course: Senior Honors Seminar

3 cr; prereq 90H; staff

Readings in the 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 the honors program or one of the advanced tutorials, 99A-F; consult major advisers

96f,97w,98s Individual Reading and Research in Selected Fields

3,3,3 cr; prereq major and #; consult adviser

Not an organized course. In exceptional cases only and with consent of advisers, students may register under these numbers to obtain credit for supervised individual reading and research appropriate to their programs which is not available in regular courses.

Political Theory

99A Advanced Tutorial: Political Theory

3 cr; prereq jr or sr, 9 cr in Upper Division courses in political theory field, and #; staff

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; democracy and practical politics; critics of democracy.

162s Recent Political Thought

3 cr; jr, sr only; prereq B or 9 cr in social science or #; Shaw, Cooperman

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 the political theorist; the idea of planning in ideal states; achievement of utopia; stability and change in the great utopias; problem of authority and law; anarchist, socialist, and conservative utopias; utopia and totalitarian ideology; utopia and democratic ideology.

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: The 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; economics and politics.

166s Development of Political Thought: Early Modern

3 cr; prereq B or 9 cr in social science or #; Sibley

Machiavelli; the idea of sovereignty; Protestant conceptions; English Civil War; Hobbes, Spinoza, Locke, the idea of progress; Godwin, Burke, Rousseau, rise of romanticism; German idealism.

Comparative Government and Politics

60f,61w Introduction to Legal Systems

(See under 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 field, and #; offered when feasible; staff

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 the economic order.

143s Government and Politics of the 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; foreign, economic, and cultural policies; significance for Western civilization.

160 / Course Offerings and Major Requirements

145f Government and Politics of the Scandinavian Countries

3 cr; prereq 6 cr or 12 cr in social science; staff

146w Social Legislation and Social Institutions in the Scandinavian Countries

3 cr; prereq 2 or Soc 1; Rosenthal

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; major problems of foreign policy.

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.

153f Japanese Government and Politics

3 cr; Benjamin

Constitutional and political development in Japan; political ideas, government, political parties, and problems.

154w Chinese Government and Politics

3 cr; 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 #; Klein

Analysis of factors such as colonial institutions, the economy, the social structure, which condition constitutional and political organization.

156w Latin-American Government and Politics II

3 cr; prereq 155 or #; Klein

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 or Klein

Analysis of political problems of new nations with particular emphasis on political consequences of breakdown of the traditional society and problems of developing new institutional forms and procedures.

158s (formerly 135) Bureaucracy and Administration in Developing Countries

3 cr; prereq B or #; staff

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 (formerly 158-159) Comparative Governmental Systems: Principles and Problems

3-3 cr; prereq 6 cr in any Upper Division comparative government courses or #; Fogelman

Application of the comparative method to study of politics with reference to Western and non-Western institutions; organization of political power in the 20th-century state; parties and pressure-groups; voting behavior, representation and legislation; policy-making; bureaucracy; socio-economic bases of government.

196s Proseminar in East and South Asia (See under International Relations)

International Relations

99B Advanced Tutorial: International Relations

3 cr; prereq jr or sr, 9 cr in Upper Division courses in international relations field, and #; staff

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; staff

175f Diplomacy

3 cr; Penikis

Nature and functions, historical development of diplomacy; its relation to forms of government and power systems. Diplomacy by conference and in international organizations. Traditional, personal, open and secret diplomacies. Essentials of diplomatic usage. Diplomatic agents.

176w U. S. Foreign Affairs Administration

3 cr; Penikis

Control of foreign relations; treaties and executive agreements; structure and functions of foreign affairs agencies—Department of State, U.S. Information Agency, Central Intelligence Agency, Department of Defense, National Security Council; coordination of agencies; the 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, psychocultural characteristics, technological revolution; public opinion; political participation; role of parties,

interest groups, bureaucracy; leadership; decision-making processes.

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; prereq 184; Pirro
Analysis of systems of interaction among nation-states; balance of power, bipolar, and other types of international system; conflict and co-operation.

186s Regional International Systems

3 cr; prereq 185; Pirro
Examination and comparison of selected regional systems, past and contemporary; stability and change.

187f International Organization I

3 cr; Riggs
Study of the 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 co-operation; comparison of functional and political organizations; problems of international administration.

189s Regional International Organization

3 cr; Riggs
Analysis and comparison of selected regional international organizations; regional defense, social and economic co-operation; 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 the local community and the state. In election (even-numbered) years it will deal 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 the 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 field, and #; staff

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 the United States

3 cr, §2; not open to soph; staff

162 / Course Offerings and Major Requirements

Special reference to current problems and developments.

81w State and Local Government and Politics

3 cr, §2; not open to soph; staff

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 course in the American governmental systems and processes field, and §; staff

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 the President and governors; the 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 §; Eidenberg

Congress and the state legislatures at work.

109s The Judicial Process

3 cr; prereq 2 or §; Krislov

Structure of the American judiciary; selection of judges; process of litigation; influences on judicial decisions; impact of and compliance with decisions; role of Supreme Court in the American political system.

115f State Government

3 cr; prereq 2 or §; Mitau

The states in the American federal system; intergovernmental relations with national and local governments; governmental institutions and processes; special reference to Minnesota.

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 (formerly 126) Government and the Economic Order

3 cr; prereq 2 or §; Holt

Analysis of relation of government to major areas of the economy; policy decision-making emphasized.

121w (formerly 127) Administrative Regulation

3 cr; prereq 120 or 102 or §; staff

Administrative development of regulatory programs; problems of bureaucracy, interest groups, and safeguards.

122w (formerly 124) Government and Domestic Public Policy

3 cr; prereq 2 or §; offered 1966-67 and alt yrs; Gieske

Federal, state, and local policy-making in welfare, education, agriculture, labor, business.

130f (formerly 131) Administrative Process I

3 cr; prereq 2 or §; Jernberg

Organization theory and administrative behavior. Problems of centralization, rationality, bureaucratic processes.

131w (formerly 132 and 133) Administrative Process II

3 cr; prereq 130; Jernberg

Analysis of budgeting, planning, and personnel administration.

176w United States Foreign Affairs Administration (see under 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, rather than upon substantive rules of law. The latter are drawn in when needed for illustration. 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 the public law field, and §; staff

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 the 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 the law.

109s **The Judicial Process** (see under American Governmental Systems and Processes)
 180f-181w†-182s **International Law (Peace)**

(see under International Relations)
 183s **International Law (Conflict)** (see under 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 preparing for graduate work in psychology. Requires a 3.00 over-all 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, 225 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:

- A. Psy 1-2, 4-5, 70

Requirements:

- A. Special project: Psy 190
 B. 6 credits from the following: Psy 100, 104-105, 120-121, 128-129, 132-133, 117, 119
 C. 6 credits from the following: Psy 125-126, 140, 144-145, 162
 D. 6 credits from the following: Psy 148, 149, 150, 151

An individual research project must be completed under the personal supervision of a faculty member in the particular field of psychology selected by the student. This research project is to result in a thesis of high quality. The student may receive credit for this work by registering for Psy 190.

Additional Upper Division courses in psychology will be elected with consent of the adviser, leading to a total of from 27 to 33 credits.

Honors candidates may be required to attend regularly a departmental honors seminar in which matters of a substantive and professional nature will be discussed.

Students are encouraged to attend appropriate 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.

Course program:

Prerequisites: Psy 1-2, 4-5, 70

164 / Course Offerings and Major Requirements

Requirements:

- A. 6 credits from the following: Psy 120-121, 125-126, 144-145
- B. One of the following: Psy 55, 75, 148, 151
- C. 6 credits in at least two of the following groups:
 - 1. Psy 130, 160, or 161
 - 2. Psy 140
 - 3. CPsy 80
 - 4. Psy 117, 118, 132-133, or 190
- D. 9 to 15 additional credits in Upper Division psychology courses

All students majoring in psychology are strongly urged to elect courses in mathematics, especially Math 10 and 40. Math 10 and Biol 1-2 are recommended for students planning to enter graduate work in clinical psychology.

Psy 70 should be taken as soon as possible in the junior year.

Majors in psychology may take not more than 33 Upper Division credits in psychology, educational psychology, and child development combined. This is in accordance with the general principle that a liberal arts degree should not involve overspecialization.

Psy 190 requires original work and should not be taken until as late in the student's program as possible.

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 of Psy 1-2, 4-5, and 144-145 are available to qualified students.

For courses in child psychology see page 56.

LOWER DIVISION COURSES

1f,w-2w,s† General Psychology
3-3† cr; prereq soph or 3rd qtr fr with B avg; staff

General introduction to study of human behavior. Prerequisite for all advanced courses in psychology.

4f,w,s-5w,s†-6s Introductory Laboratory Psychology

2-2†-2 cr; prereq soph, 1-2 or ¶1-2; Fox, staff

Experiments illustrating contemporary subject matter such as: human and animal learning, motivation, verbal behavior, prob-

lem solving, visual perception, psychological measurement, personality and social psychology.

10s Applications 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; Roberts, Overmier
Roles of stimulus, receptor organ and brain, and of learning and motivation, in man's perception of his world. Lectures and demonstrations.

70f,w,s Principles of Psychological Measurement

3 cr, §QA 5, §Soc 45; prereq 2, 5; Campbell

Uses and limitations of fundamental varieties of psychological measurement.

75s Introduction to Psychology of Learning

3 cr; prereq 2; Trapold, Overmier

Basic methods in study of learning. Development of fundamental concepts and principles governing the learning process.

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, 70, or equiv; not offered 1966-67; LaBerge, Jenkins

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, 70, or equiv; not offered 1966-67; 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.

117w Analysis of Behavior

3 cr; prereq 75 except for students in Sequence A and grad students; MacCorquodale

Systematic formulation of topics of psychology based upon a Skinnerian analysis. Scientific method, learning, motivation, and emotion.

118f Verbal Behavior

3 cr; prereq 117 or #; MacCorquodale

An account of an individual's verbal be-

havior 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 Psy 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.

120-121† 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 70, or 5 and 5 cr in statistics; Jenkins, Darley, Dunnette

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.

127s Introduction to Behavioral Genetics

3 cr; prereq 125, 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 the 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.

130w,s Vocational and Occupational Psychology

3 cr; prereq 2 and 5 or 5 cr in statistics; Lofquist, others

Psychology of individual differences in intelligence, aptitudes, interests, and training as related to vocational counseling psychology and problems of work adjustment.

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 the elaborated drive structure. Motivation in complex situations involving set, level of aspiration, Zeigarnik effect, frustration, etc.

166 / Course Offerings and Major Requirements

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, 125-126 or ¶125-126 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 the adult.

137s Counseling Psychology III: Interviewing

3 cr; prereq 136 or #; Warnken
Dynamics of the counseling interview; interview techniques; diagnosis and appraisal; use of occupational information; psychological report writing.

140w Social Psychology

3 cr; prereq 2, 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 the individual's attitudes and behavior.

144w-145f Abnormal Psychology

3-3f 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.

147s Advanced Advertising Procedure

3 cr, §Mktg 147; prereq 156; Longstaff
Problems in advertising research, stressing both traditional and more recent techniques such as motivation research.

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, 70 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 co-ordinated 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

3 cr; prereq 2 and Principles of Economics; Longstaff
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.

160f,w Psychology in Personnel Work

3 cr; prereq 2, 5, or 3 cr in statistics and Principles of Economics or #; Longstaff
Selection and retention of a stabilized personnel. Standardized interview; principles and techniques of employment tests; methods of judging character qualities; rating scale; personnel classification methods; morale and its measurement.

161s Psychology of Individual Behavior in Industry

3 cr; prereq 70 or 3 cr in statistics; Dunnette
Measurement of individual differences and applications of such measurements to problems of human behavior in industry. Employee selection and placement, training and personnel development, employee motivation and morale, and human factors in the design of production systems.

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.

168w Quantitative Methods in Psychology

3 cr; prereq #; Yellott
Elementary set theory, probability theory, matrix algebra, difference equations, with applications to construction and evaluation of behavior models.

169s 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.

171f-172w†-173s Clinical Psychology
 3-3†-3 cr; prereq sr, 145 and a course in mental measurement or statistics; students intending to use this course professionally should postpone taking it until they are in Graduate School; Meehl, Meier, Schofield, Brantner, Stelmachers
 Theory and practice of personality appraisal, especially of deviant individuals and in a

psychiatric context. Diagnostic interview and mental status; history-taking; behavior ratings; psychological deficit; prediction; structured personality tests.

190f,w,s Project in Psychology

Cr ar; prereq sr, †; staff
 Individual library study or experimental investigation.

Public Administration (PA)

Professional education for public administration is at the graduate level—see *Bulletin of the Graduate School* and special *Bulletin on Graduate Education for Public Administration*.

Public Health (PubH)/College of Medical Sciences

● Major Sequence in Biostatistics in Arts College—PubH 110-120, 111-121, 130, 131, and 18 credits in Upper Division courses approved by the adviser.

For further information about undergraduate curriculums leading to graduate work in biostatistics consult with members of the staff in biostatistics.

For additional details of courses of study in public health see the *Bulletin of the School of Public Health*.

LOWER DIVISION COURSES

3f,s Personal Health
 2 cr, §2, §50; Thomson
 Normal body function; causes and prevention of disease.

4s Health Problems of the Community
 2 cr; prereq 2, 3, or successful pas-

sing of exemption exam (exemption from 2 or 3 on basis of military service does not serve as a prereq); Smith
 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.

51w Community Hygiene
 3 cr, §4, §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.

75s Introduction to Environmental Sanitation
 3 cr; prereq 3 cr in public health; Bond
 Principles of urban and rural sanitation re-

lating to water, food, wastes, housing, accidents, radiation, air, insects, rodents.

100Af Elements of Public Health I
 3 cr; prereq 3 or 50, or equiv and a course in bacteriology; G Anderson, Schuman, Thomson

Occurrence and prevention of communicable, degenerative, and industrial disease; protection of food, water, and milk; maternal and child health.

102Aw Environmental Sanitation
 2 cr; prereq 100A or †; Bond, others
 General principles of urban and rural sanitation; problems encountered by official health agencies.

168 / Course Offerings and Major Requirements

103f,w,s Public Health Bacteriology

Cr ar; prereq MicB 102, 116 and #; Bauer

Bacteriologic and serologic diagnosis, public health laboratory administration and methods.

106w Public Health Administration

3 cr; prereq 100A; G Anderson, Hamilton

Structure, basic functions, and activities of public health agencies.

Other courses in biostatistics designed primarily for students in public health, medicine, or Graduate School may be open to students in Arts College by special arrangement with Dr. Brown.

Physiological Hygiene

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 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,s Public Health Education

2 cr; prereq #; Grout

Planning educational aspects of community health programs; group procedures; public relations; selection, development, and use of mass media.

191f Science of Human Nutrition

3 cr; prereq #; Keys, J Anderson

Surveys; nutritional status; undernutrition; malnutrition; dietetics in social relief and medical practice.

192w Physiology of Exercise

Cr ar; prereq Phsl 106, 107 or equiv and #; Taylor, Simonson

Muscular efficiency, deconditioning, effects of exercise on metabolism and physiological systems.

For other courses in public health see the *Bulletin of the Graduate School*, or the *Bulletin of the School of Public Health*.

Biometry

110Af (formerly 110) 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.

111Af (formerly 111) Biometry Laboratory I

2 cr; prereq ¶110A; Bartsch

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

110Bw (formerly 120) 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.

111Bw (formerly 121) 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.

110Cs (formerly 130) Biometry III

3 cr; prereq 110B and ¶111C; Bartsch

Analysis of randomized block, factorial and split plot designs; χ^2 applied to frequency data; multiple regression.

111Cs (formerly 131) Biometry Laboratory III

2 cr; prereq ¶110C; Bartsch

Basic designs will be illustrated with numerous examples from the biological sciences; application of χ^2 to goodness of fit and heterogeneity tests.

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

Courses listed in this section are devoted wholly or in significant part to some aspect of religion. They are listed here together for two reasons, first, to give students with a *general* interest in religious studies some idea of the variety of ways in which they may pursue this interest, and, second, to assist students with a *special* interest in religious studies in working out a tailor-made interdepartmental major in this area. A student who wants an interdepartmental major in religious studies should read carefully the section of this bulletin devoted to interdepartmental programs p. 12 and then consult one of the faculty advisers listed on p. 236. (*Note:* Courses marked with an asterisk should be of special interest to students making up a program in religious studies.)

American Studies

*Hum 22 American Life

118 Baroque Art in Flanders and Holland
140 Scandinavian Architecture

Anthropology

- 115 Indians of the Great Plains
116 Indians of the Southwest
117 Indians of South America
119 Peoples and Cultures of Middle America
120 Peoples and Cultures of Africa
121 Peoples and Cultures of South Seas
124 Culture Sphere of China
125 Peoples and Cultures of India
126 Peoples and Cultures of Southeast Asia and Indonesia
*127 Islamic Culture Sphere
128 The Islam in Africa
*161 Primitive Religion

Art

- 2,3,4 Survey of the History of Art
56,57,58 Survey of the History of Art
100 Ancient Art: Old Oriental Cultures
103-104-105 Medieval Art
106 Italian Art of Fourteenth Century
107 Early Fifteenth-Century Art in Italy and Northern Europe
108 Late Fifteenth-Century Art in Italy and Northern Europe
110 Art of India
111 Art of China
112 Art of Japan
113 High Renaissance Painting in Italy and Northern Europe
114 Sixteenth-Century Sculpture and Architecture
115 Later Sixteenth-Century Painting
116 Baroque Art in Italy and Spain
117 Baroque Art in France and England

Classics

- Grk 1-2 Beginning Greek
Grk 3 Selections from Greek Prose
Grk 50-51 Reading Greek
*Grk 73 Hellenistic Greek
Lat 1-2-3 Beginning Latin
Lat 50 Reading Latin
*Lat 135 Medieval Latin
Clas 3 Age of Alexander
Clas 6 The World of Constantine
Clas 42 Greek and Roman Mythology
Clas 80/180 Classical Epic in Translation
Clas 81/181 Greek Tragedy in Translation
Clas 82/182 Aristophanes and Roman Drama in Translation
Clas 122 Introduction to Greek Archaeology

East and South Asian Languages

- Ortl 75 Asian Civilization: India
Ortl 76 Asian Civilization: China
Ortl 77 Asian Civilization: Japan

Education

- Hed 141 Critical Issues in Contemporary Education

English

- *66,67 Literature of the Bible
72 American Literature
104 Emerson and Thoreau
159-160 Early American Literature
106 Whitman and Twain
162 Milton

170 / Course Offerings and Major Requirements

Geography

- 4 Human Geography

History

- 1,2,3 Civilization of the Modern World
4,5,6 English History
11,12,13 Medieval and Renaissance History
14,15,16 Ancient Civilization
17,18,19 History of Asia
79,80,81 United States in the Twentieth Century
86,87,88 American Colonies
103A,104A,105A The Ancient Near East
103B,104B,105B Greece to 200 B.C.
103C,104C,105C History of Rome
106A,107A,108A Europe in the Early Middle Ages
106B,107B,108B Europe in the High Middle Ages
106C,107C Europe in the Late Middle Ages, Renaissance
*108C Reformation
115A,116A Early Modern Europe
118E,119E,120E Russia
121C,122C,123C Intellectual and Cultural History of Modern Europe
*187B-188B-189B Proseminar in American Religious History
139C,140C,141C Intellectual History of the United States
139E,140E,141E Social History of American Education
148A,149A,150A History of South Asia, Especially India
118C History of Germany
115D,116D,117D Europe in the Twentieth Century
*175F-176F-177F Proseminar in Religious History of Modern Europe

Humanities

- 51,61 Humanities in the Modern World
3,53 Humanities in the Modern World III
13,63 Renaissance and Reformation
11,61 The Greek Heritage
12,62 Roman and Medieval Heritage

Interdisciplinary Program

- NSci 171,172,173 Development of the Sciences

Library School

- Lib 105 History of Libraries

Middle Eastern Languages

- Arab 71-72-73 Advanced Literary Arabic
Arab 74-75-76 History of the Arabs

- Arab 77-78-79 Intellectual Life in Islam
Arab 81 Islamic World
Arab 161-162-163 Hispano-Arabic Culture
Aram 101-102-103 Beginning Aramaic
Heb 1-2-3 Beginning Hebrew
Heb 51-52-53 Intermediate Hebrew
Heb 56 Survey of Hebrew Grammar
Heb 74-75 Ancient Israel
Heb 101-102-103 Advanced Biblical Hebrew
Heb 151-152-153 Northwest Semitic Inscriptions

Music

- 105 American Music
107 Georg Friedrich Handel: Life and Works
108 Heinrich Schütz: Life and Works
109 Lasso and Palestrina
*134-135-136 History of Church Music
140 Interpretation of Choral Masterpieces
150 Organ Literature
154-155-156 Music in the Middle Ages and Renaissance
164-165-166 Music in the Baroque Era
190 Hymnology

Philosophy

- 1 Problems of Philosophy
3 Ethics
*10 Science and Religion
50-51-52 General History of Western Philosophy
105 Introduction to American Philosophy: Puritanism to Pragmatism
107 Philosophy in Modern Literature
109 History of Ethics
137 Kierkegaard
138 Contemporary Existentialism
167 Philosophy of History
171,172 Philosophies of India I and II
*182 Philosophy of Religion

Political Science

- 161 Problems of Democracy
162 Recent Political Thought
163 Political Theory and Utopia
164-165-166 Development of Political Thought

Romance Languages

- Fren 124 Montaigne and Pascal
Ital 159-160 Dante

Slavic and East European Languages

- Russ 75-76-77 Russian Civilization and Culture

School of Social Work

Soc 90 American Social Welfare

Sociology

*142 Religion as a Social Institution

Speech and Theatre Arts

5 Fundamentals

106 Discussion

126A History and Criticism of American Public Address

Th 11 Introduction to Theatre Arts

Rhetoric (Rhet)/College of Agriculture, Forestry, and Home Economics

47f,w,s Efficient Reading

1 cr for Arts College students; prereq score above 30th percentile on a standard reading test; not a remedial course; Brown

Increases reading rate, comprehension, and vocabulary.

Romance Languages

Romanic (Rom)

114s Introduction to Romance Philology

3 cr; required of all departmental majors; prereq Fren 30 or Ital 25 or Port 25 or Span 30 or §; Pattison

Origins of the Romance languages. Factors that influenced their growth and structure in early Catalan, French, Italian, Portuguese, Provençal, Roumanian, and Spanish texts.

French (Fren)

● **Major and Minor Sequences in Arts College—**

● *Major:* Fren 30, and 33 Upper Division credits, 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 course work in literature on the 100 level instead of the corresponding Upper Division offerings.

● *Minor:* A minimum of 15 credits in courses above 53. The department recommends one of the following sequences:

A. Fren 65, 66, 67; 85, 86, 87; 114

B. Fren 60, 61, 62 (12 cr) and 5 additional credits in Upper Division French

C. Fren 65, 66, 67 (9 cr) and 8 additional credits in Upper Division French

D. Fren 54, 55, 57, 107-108-109

172 / Course Offerings and Major Requirements

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation*: Fren 30, and 36 Upper Division courses including: Fren 54, 55, 56, 57, 60, 61, 62, 65, 66, 67; 107; 114. At least one more quarter of the 107-108-109 sequence or Clas 56 is recommended. *Minor recommendation*: 23 college credits of which 18 credits will be in courses numbered above 25, including: Fren 30, 55, 60, 61, 62.

LOWER DIVISION COURSES

Note—Juniors, seniors, and graduate students should consider Fren 50-51-52.

Honors Program—See Fren 2H, 3H, 25H and consult major advisers.

1f,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, Rydell, and staff
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.

2Hw-3Hs-25Hf 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 the Tuesday and Thursday sections of the 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 3 or 3 yrs high school French

Intensive review of grammatical forms and patterns principally through a systematic analysis of a variety of French 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 the principal genres are examined through stylistic analyses and literary explications. Students learn critical terminology and discuss literary problems and techniques.

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.

50f-51w-52s Reading French: A Beginning Course for Juniors and Seniors

3-3-3 cr, §1, §2, §3; prereq jr; cannot be counted toward either a major or a minor in French. May not be used to fulfill language requirement

Aims to develop reading proficiency by concentration from the outset on vocabulary building and reading techniques; formal grammar is reduced to a minimum. Intensive study of variety of texts in class, and individual projects in extensive readings.

54f,w French Composition

3 cr; prereq 25 or equiv

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.

56f French Phonetics

3 cr; prereq 25 or #; Sirval
(See old Fren 100)

57s Advanced French Composition

3 cr; prereq 54 or #

58w,s Advanced French Conversation

3 cr; prereq 55 or #

60f,61w,62s French Civilization and Culture

4,4,4 cr; prereq 25; Francis
Systematic study of development of French culture, with oral and written French exercises based on material of the course. Course conducted in French. 60: Middle Ages. 61: Period from Renaissance to French Revolution. 62: Beginning with French Revolution to present.

65f Survey of French Literature: Rabelais to La Bruyère

3 cr; prereq 30...§85 for majors; Francis

- 65Hf Honors Course: Survey of French Literature: Rabelais to La Bruyère**
3 cr; prereq 25H or 30 with an A, and #...¶85 for majors
- 66w Survey of French Literature: The Age of Enlightenment**
3 cr; prereq 30...¶86 for majors; Waldauer
- 66Hw Honors Course: Survey of French Literature: The Age of Enlightenment**
3 cr; prereq 25H or 30 with an A, or 65H, and #...¶86 for majors
- 67s Survey of French Literature: Romanticism to Surrealism**
3 cr; prereq 30...¶87 for majors; Lock
- 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
- 77f-78w-79s French Literature in English Translation**
2-2-2 cr; knowledge of French not required; does not count toward a major in French
For students with little or no knowledge of French but interested in contribution of France to European and world literature. 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 #
- 107f-108w-109s Structure of Modern French**
3-3-3 cr; prereq 57 or ¶57 or #; Mantini
- 110f French Romanticism**
3 cr; prereq sr with #, grad; offered 1967-68 and every 3rd yr
- 111w Nineteenth-Century Literature: The Drama**
3 cr (formerly 2); prereq sr with #, grad; offered 1968-69 and every 3rd yr; Lock
- 114s Introduction to Romance Philology/see Romanic, above**
- 121f Pre-Renaissance and Pléiade Poetry**
3 cr; prereq sr with #, grad; offered 1968-69 and every 3rd yr; Renaud
- 124w Montaigne and Pascal**
3 cr; prereq sr with #, grad; offered 1968-69 and every 3rd yr; Renaud
- 125f Renaissance and Baroque Drama: Corneille and the Origins of the Classical Drama**
3 cr; offered 1967-68 and every 3rd yr; Renaud
- 126s Classical Tragedy: Racine**
3 cr; offered 1968-69 and every 3rd yr; Renaud
- 127f Classical Comedy: Molière**
3 cr; offered 1966-67 and every 3rd yr; Renaud
- 128w French Poetry from d'Aubigné to La Fontaine**
3 cr; offered 1966-67 and every 3rd yr; Francis
- 129s Novel of the Seventeenth Century**
3 cr; offered 1967-68 and every 3rd yr; Renaud
- 130f Poetry of Victor Hugo**
2 cr; offered 1967-68 and every 3rd yr
- 131f Baudelaire and Parnassian Poetry**
3 cr (formerly 2 cr); offered 1966-67 and every 3rd yr
- 132f Symbolist Poets: Verlaine, Rimbaud, Mallarmé**
2 cr; offered 1967-68 and every 3rd yr
- 140w Novel of the Eighteenth Century**
3 cr; offered 1966-67 and every 3rd yr; Waldauer
- 141s Eighteenth-Century Dramatic Literature**
3 cr; offered 1967-68 and every 3rd yr; Waldauer
- 142f Voltaire**
3 cr; offered 1967-68 and every 3rd yr; Waldauer
- 143s Diderot**
3 cr; offered 1967-68 and every 3rd yr; Waldauer
- 144f Rousseau**
3 cr; offered 1966-67 and every 3rd yr; Waldauer
- 148s Drama of the Twentieth Century: Claudel, Giraudoux, Anouilh, Montherlant, Camus, Sartre**
3 cr; offered 1966-67 and every 3rd yr; Francis
- 149 French Dramatists of the Twentieth Century**
3 cr; prereq 30 and one literature course; Francis
Designed to reflect the variety of experimentation in French theatre since Cocteau.
- 150 Introduction to Formal Analysis**
3 cr; prereq 30 and one literature course
Outstanding literary texts from the Middle Ages to 20th century. Course is designed to reveal how language, themes, and structure analyzed as a whole, in depth, lead to

174 / Course Offerings and Major Requirements

maximal appreciation of the beauty and significance of a great literary text.

153w Balzac

3 cr; offered 1968-69 and every 3rd yr;
Lock

154s Stendhal

3 cr; offered 1967-68 and every 3rd yr;
Lock

155w Flaubert, Maupassant, and Narrative Techniques

3 cr; offered 1967-68 and every 3rd yr;
Lock

156w Zola, Goncourt, and the Naturalistic Novel

3 cr; offered 1968-69 and every 3rd yr

158w Proust and the Novel of the Twentieth Century

3 cr (formerly 2 cr); offered 1966-67
and every 3rd yr; Lock

159w The Existential Novel

3 cr; offered 1967-68 and every 3rd yr
Stress upon novelists from the thirties to the present whose work reveals concern for what Malraux calls the human condition: Malraux, Céline, Sartre, Camus, Blanchot, and Beckett.

161s Forms of the Novel in the Twentieth Century

3 cr; offered 1967-68 and every 3rd yr;
Lock

Emphasis upon innovations in novelistic form, from Gide's *Les Faux-Monnayeurs* (1926) to novels of Nathalie Sarraute and Alain Robbe-Grillet.

162 Le Nouveaux Roman: Representative French Novelists Since 1950

3 cr; prereq 30 and one literature course; Lock

Includes the last existentialist novels and innovations of Nathalie Sarraute, Alain Robbe-Grillet, Michel Butor, and others.

165w Poetry in the Twentieth Century: Apollinaire, Valéry, Eluard

2 cr; offered 1967-68 and every 3rd yr;
Francis

170 Rabelais

3 cr; prereq 30 and two literature courses, or #

A study of *Gargantua* and *Pantagruel* in the original text.

172 The Novel of l'Entre-Deux Guerras

3 cr; Francis

175f-176w-177s French Literary Doctrines from the Pléiade to the Present

2-2-2 cr; offered 1968-69 and every 3rd yr

190f,191w,192s Directed Readings for Undergraduates

1 to 3 cr per qtr; prereq consent of dept chm; staff

Italian (Ital)

● Major and Minor Sequences in Arts College—

Major: 27 credits in Italian courses numbered 60 or above including 114 and 3 additional credits chosen from the following:

Fren 65, 66, 67, 121

Engl 75; Lat 133

Hist 103A, 104A, 105A

Ital 159-160; 161-162

Minor: A minimum of 15 credits above Ital 50.

LOWER DIVISION COURSES

1f-2w-3s Beginning Italian

5-5-5 cr, §50

Stresses aural comprehension, correct pronunciation, basic grammar, and a practical reading knowledge.

25f Intermediate Italian

5 cr (formerly 3 cr); prereq 3 or #;
Seim

Conversational approach to a review of grammatical forms and patterns. Literary texts analyzed and discussed in Italian.

UPPER DIVISION COURSES

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

- 50w Reading Knowledge of Italian**
5 cr, §1; prereq reading knowledge of Latin or one of the Romance languages or §...no previous knowledge of Italian necessary; Seim
- 60f-61w-62s Italian Civilization and Culture**
3-3-3 cr; prereq 25 or §
Systematic study of development of Italian culture, with oral and written exercises in Italian based on the material of course. Course conducted mainly in Italian. 60: Middle Ages. 61: Humanism and the Renaissance. 62: Risorgimento to the present.
- 65f Survey of Italian Literature: Dante to Lorenzo de Medici**
3 cr; prereq **; offered 1967-68 and alt yrs
- 66w Survey of Italian Literature: The Renaissance**
3 cr, §185; prereq **; offered 1967-68 and alt yrs
- 67s Survey of Italian Literature: Tasso Through Pirandello**
3 cr, §186; prereq **; offered 1967-68 and alt yrs
- 114 Introduction to Romance Philology /**
see Romanic, above
- 150w Modern Poetry (Leopardi, Carducci, etc.)**
3 cr; prereq **; offered 1966-67 and alt yrs; Pipa
- 155f Modern Short Story (Verga, Pirandello, etc.)**
3 cr; prereq 3 or §; offered 1966-67 and alt yrs; Pipa
- 159f-160w Dante**
3-3 cr; prereq one course above 50; students may enter any qtr with §; offered 1967-68 and alt yrs; Pipa
- 161f-162w The Sixteenth Century**
3-3 cr; prereq one course above 50; offered 1966-67 and alt yrs; Pipa
- 164s Dante in English**
3 cr; prereq §; offered when feasible
- 172f Modern Drama (Giacosa, Pirandello, etc.)**
3 cr; prereq one course above 50; offered 1966-67 and alt yrs; Pipa
- 173s Boccaccio**
3 cr; prereq one course above 50; offered 1967-68 and alt yrs
- 174s Petrarch**
3 cr; prereq one course above 50; offered 1966-67 and alt yrs; Pipa
- 175w-176s The Italian Novel**
3-3 cr; prereq 62 or §; offered 1966-67 and alt yrs; Pipa
- 175: Manzoni's *Promessi Sposi*, Verga's *Mastro Don Gesualdo*, Fogazzaro's *Piccolo Mondo Antico*, Deledda's *Elias Portolu*.**
176: Three novels selected from the works of Svevo, Pirandello, Bacchelli, Palazzeschi, Silone, Moravia, Pratolini, Vittorini, Calvino.
- 180f Early Italian Poetry: The Frederician Poets and the Dolce Stil Nuovo**
3 cr; prereq 67 or §; offered when feasible; Pipa
Development of certain fundamental poetic forms (sonnet, *sestina*, *ballata*, *madrigale*, *canzone*.)
- 185w Survey of Italian Literature**
3 cr, §66; prereq at least one Upper Division literature course in any dept, or §
For upper division and grad students who wish to obtain a survey knowledge of Italian literature. Works may be read in translation if necessary.
- 186s Survey of Italian Literature**
3 cr, §67; prereq at least one Upper Division literature course in any dept, or §; offered when feasible; Pipa
For upper division and graduate students who wish to obtain survey knowledge of Italian literature. Works may be read in translation if necessary.
- 190f, 191w, 192s Directed Readings for Undergraduates**
1-3 cr per qtr; prereq consent of dept chairman; staff

** The prerequisite is Ital 3 or 4; but for students beginning Italian in the Upper Division it may be Ital 2 or 50 with consent of instructor.

Portuguese (Port)

● Major and Minor Sequences in Arts College—

Major: No major sequence is available in Portuguese only, but in exceptional cases students may be allowed by the department to combine Portuguese and Spanish to form a Portuguese-Spanish major.

Minor: A minimum of 15 credits above Port 30.

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.

30w Introduction to Luso-Brazilian Culture and Literature

3 cr; prereq 25 or §; Hamilton

Stresses the cultural development of Portugal and Brazil, examined in literary texts.

UPPER DIVISION COURSES

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 the Literature of Portugal and Brazil

3,3,3 cr; prereq 30 or §; Hamilton

114s Introduction to Romance Philology / see Romanic, above

190f, 191w, 192s Directed Readings for Undergraduates

1-3 cr per qtr; prereq consent of dept chm; Hamilton

Spanish (Span)

● Major and Minor Sequences in Arts College—

Major: Students may arrange major programs in either Sequence A or Sequence B:

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; 85B, 86B, 87B; 114.

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: A minimum of 15 credits in courses 54 or above. The department recommends one of the following sequences:

A. Span 65-66-67, 85A-86A-87A, 114.

B. Span 74-75-76, 85B-86B-87B, 114.

C. Span 54, 55, and 60-61-62 or 60-63-64.

D. Span 54, 55, 57, 107-108-109.

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation*: 36 Upper Division credits in Spanish including 54; 55; 57; 60, 61, 62, or 60-63-64; 65-66-67, or 74, 75, 76; 107, 108, 114. It is recommended that the student also take 109 or Clas 56. *Minor recommendation*: 23 college credits of which 18 credits will be courses numbered above 25 including one of the following sequences: 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 2 and those offering 2 yrs must take 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; Cúneo
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 the Tuesday and Thursday sections of the 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; Narvaez
An intensive review of grammar accomplished to a great extent through analysis of a variety of cultural and literary texts.

30f,w,s Introduction to Spanish and Spanish-American Literary Texts

3 cr; prereq 25 or 4 yrs high school Spanish or #; Rundorff

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; Narvaez

55f,w,s Spanish Conversation

3 cr; prereq 25 or equiv; Narvaez

56f Spanish Phonetics

3 cr; prereq 25 or #; Cúneo

57s Advanced Spanish Composition

3 cr; prereq 54; Narvaez

58w,s Advanced Spanish Conversation

3 cr; prereq 55; Narvaez

59 The Spanish Play

3 cr; prereq 3 or #; Serrano-Plaja

60f,61w,62s Spanish Civilization and Culture

3,3,3 cr; prereq 30 or equiv; Pattison

63w,64s Latin-American Civilization and Culture

4,4 cr; prereq 60 or #; Cúneo

65f Survey of Spanish Literature: Poema del Cid to the Celestina

3 cr; prereq 30...¶85A for majors; Rundorff

65Hf Honors Course: Survey of Spanish Literature: Poema del Cid to the Celestina

3 cr; prereq 25H or 30 with an A, and #...¶85A for majors; Serrano-Plaja

66w Survey of Spanish Literature: The Golden Age

3 cr; prereq 30...¶86A for majors; Serrano-Plaja

66Hw Honors Course: Survey of Spanish Literature: The Golden Age

3 cr; prereq 25H or 30 with an A, or 65H and #...¶86A for majors; Serrano-Plaja

178 / Course Offerings and Major Requirements

67s Survey of Spanish Literature: Neoclassicism to Early Twentieth Century

3 cr; prereq 30...¶87A for majors; Rundorff

67Hs Honors Course: Survey of Spanish Literature: Neoclassicism to Early Twentieth Century

3 cr; prereq 25H or 30 with an A, or 66H, and §...¶87A for majors; Rundorff

74f, 75w, 76s Survey of the Literature of Spanish America

3,3,3 cr; prereq 30...¶85B, ¶86B, ¶87B for majors; Floripe

79s A Century of Latin-American Thought: 1850-1857

3 cr (formerly 2 cr); prereq jr or §, 6 qtrs Spanish; Cúneo

Introduction to men who have molded the thought of Latin America and to the ideas that have shaped the attitude of people in their countries toward freedom, democracy, and social progress. Since there is no surer way to the heart and soul of a culture than a knowledge of the men whom it calls great, this course is another step in the understanding of the Latin-American republics. Conducted entirely in Spanish.

80f Spanish-American Novel and Social Problems

2 cr; prereq jr or §, 6 qtrs Spanish; Cúneo

Some outstanding social problems of Latin America as presented in the novels of its leading authors. These works capture the essence of social problems and suggest possible solutions for them. Conducted entirely in Spanish.

81w Spanish-American Novel and Social Problems

2 cr; prereq jr or §, 6 qtrs Spanish; Cúneo

Similar in scope to Span 80 but works and problems under study are different. Conducted entirely in Spanish.

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 the Golden Age

2 cr; prereq 30 or §, ¶66; Serrano-Plaja

86Bw Romanticism to Modernismo

2 cr; prereq 30 or §, ¶75; Floripe

87As Modern Spanish Literature

2 cr; prereq 30 or §, ¶67; Pattison

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

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: Nineteenth Century

3-3-3 cr; prereq 65, 66, 67; offered 1966-67 and alt yrs; Pattison

114s Introduction to Romance Philology/see Romanic, above

115f Spanish Literature of the Seventeenth Century: The Drama

3 cr; prereq 65, 66, 67; offered 1967-68 and alt yrs; Serrano-Plaja

116w Spanish Literature of the Seventeenth Century: The Novel

3 cr; prereq 65, 66, 67; offered 1967-68 and alt yrs; Serrano-Plaja

117s Spanish Literature of the Seventeenth Century: Poetry

3 cr; prereq 65, 66, 67; offered 1967-68 and alt yrs; Serrano-Plaja

120f The Ballad

3 cr; prereq 65, 66, 67; offered when feasible

130 Cervantes: Don Quixote

3 cr; prereq 65, 66, 67; offered 1966-67 and alt yrs

131w The Picaresque Novel

3 cr; prereq 65, 66, 67; offered when feasible; Rundorff

135 Development and Metamorphosis of "Don Juan" Theme

3 cr; prereq 1 Upper Division literature course or §; Rundorff

140f Latin-American Literature: Poetry

3 cr; prereq 65, 66, 67 or 76; offered 1967-68 and every 3rd yr; Floripe

Silva, Dario, Neruo, Chocano, Herrera y Reissig, Lugones, Agustini, Mistral, Ibarbourou, Storni, López Verlarde, and Neruda.

141w Latin-American Literature: Essay, Short Story, Drama

3 cr; prereq 65, 66, 67 or 76; offered 1967-68 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 1967-68 and every 3rd yr; Floripe

Gallegos, Azuela, Rivera, Gúirdales, Barrios, Gálvez, Lynch, Ciro Alegría.

- 143f,144w,145s Colonial and Nineteenth Century Latin-American Literature**
3,3,3 cr; prereq 65, 66, 67 or 76; offered 1966-67 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 1966-67 and every 3rd yr; Floripe
- 149 Contemporary Latin-American Novel**
2 cr; prereq 76 or #
- 155f Spanish Literature of the Sixteenth Century: The Novel**
3 cr; prereq 65, 66, 67; offered 1966-67 and alt yrs; Serrano-Plaja
- 156w Spanish Literature of the Sixteenth Century: The Drama**
3 cr; prereq 65, 66, 67; offered 1966-67 and alt yrs; Serrano-Plaja
- 157s Spanish Literature of the Sixteenth Century: Poetry**
3 cr; prereq 65, 66, 67; offered 1966-67 and alt yrs; Serrano-Plaja
- Arab 161f Hispano-Arabic Literature and Culture: History of Islamic Spain**
3 cr; prereq #
- Arab 162w Hispano-Arabic Literature and Culture: Arab Philosophy in Spain**
3 cr; prereq #
- Arab 163s Hispano-Arabic Literature and Culture: Hispano-Arabic Literature**
3 cr; prereq #
- 169 Valera**
3 cr; prereq 1 Upper Division literature course or #; Rundorff
- 171 Spanish Novel from Valera to Palacio Valdéz**
3 cr; prereq a survey course in Spanish literature; Pattison
- 172 Modern Spanish Novel (1900-1936)**
3 cr; 1 Upper Division literature course or #
- 174f Twentieth-Century Spanish Literature: Drama**
3 cr; prereq 65, 66, 67; offered 1967-68 and alt yrs; Pattison
- Benavente, Martinez Sierra, Linares-Rivas, Alvarez Quintero, Valle Inclán, Marquina, Garcia Lorca, and Casona.
- 175w Twentieth-Century Spanish Literature: Prose**
3 cr; prereq 65, 66, 67; offered 1967-68 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 1967-68 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 (1937-1951)**
3 cr; 1 Upper Division literature course or #
- 183 Contemporary Spanish Novel (1952-1965)**
3 cr; prereq 1 Upper Division literature course or #
- 185 Unamuno and the Existential Writers**
2 cr; prereq 1 Upper Division literature course or #
- 187 Un-Realism in the Spanish Theatre: Casona**
2 cr; prereq 1 Upper Division literature course or #
- 188 Contemporary Spanish Theatre: 1939-1965**
3 cr; prereq 1 Upper Division literature course or #
- 190f,191w,192s Directed Readings for Undergraduates**
1-3 cr per qtr; prereq consent of dept chm; staff

Russian/see Slavic and East European Languages

Sanskrit/see Classics

Scandinavian (Scan)

- Major Sequence in Scandinavian Languages and Literature in Arts College—36 credits 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.

180 / Course Offerings and Major Requirements

Nine credits 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, staff

4f Intermediate Norwegian
5 cr; prereq 3 or equiv; Simpson, staff

Swedish (Swed)

1f-2w-3s Beginning Swedish
5-5-5 cr; Saether, staff

4f Intermediate Swedish
5 cr; prereq 3 or equiv; Saether, staff

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 the 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.

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 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.

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 a Scandinavian major or toward fulfilling language requirement; staff

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 114w-115† 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 the 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 the 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 with special emphasis on Proto-Scandinavian and the 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.

Phil 137w Kierkegaard

3 cr; prereq one course from Phil 50-51-52 or #; Mason

Art 140f Scandinavian Architecture

3 cr; prereq sr, grad or Δ; Nelson

Art 141w Scandinavian Painting

3 cr; prereq sr, grad or Δ; Nelson

Art 142s Scandinavian Sculpture and the 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 the Poetic Edda and the Prose Edda.

Scan 151w The Icelandic Saga

3 cr; prereq 8 cr in literature; reading knowledge of a Scandinavian language required for majors only; Simpson

Literary study of the 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 the original of secular and religious literature from 14th to 17th century.

Scan 154f Holberg and the Period of the Enlightenment

3 cr; prereq 8 cr in literature; knowledge of a Scandinavian language required for majors only; Simpson

Representative figures of 18th century Dano-Norwegian and Swedish literature; emphasis on comedies of Ludvig Holberg, "the Molière of the North," and songs of Bellman.

Scan 161w The Nineteenth-Century Scandinavian Novel

3 cr; prereq 8 cr in literature; reading knowledge of a Scandinavian language required for majors only; Simpson

Examination of "the great tradition" in the modern Scandinavian novel, together with the circumstances, intellectual and political, social and economic, from which it grew.

182 / Course Offerings and Major Requirements

Scan 162s Contemporary Trends in Scandinavian Novel

3 cr; prereq 8 cr in literature; reading knowledge of a Scandinavian language required for majors only; Simpson

Characteristic trends in Scandinavian life and thought in the 20th century as expressed in the prose fiction of Knut Hamsun, Sigrid Undset, Johannes V. Jensen, Hjalmar Bergman, Pär Lagerkvist, Halldór Laxness, F. E. Sillanpää, and others.

Scan 171f Ibsen and the Beginnings of the Modern Drama

3 cr; prereq 8 cr in literature; reading knowledge of a Scandinavian language required for majors only; Gustafson

Intensive examination of the plays of Ibsen, especially with reference to role he has played as "founder" of modern European drama.

Scan 172w Strindberg and the Drama in Revolt and Transition

3 cr; prereq 8 cr in literature; reading knowledge of a Scandinavian language required for majors only; Gustafson

Strindberg as master of the naturalistic drama and as "father of modernity" in

European and American theater since his day.

Scan 173s Contemporary Scandinavian Drama and Theater

3 cr; prereq 8 cr in literature; reading knowledge of a Scandinavian language required for majors only; Gustafson

Examination of the Scandinavian drama and theater of today, particularly with reference to the experimental trends both in dramatic composition and staging.

Hist 172G-173G-174G† Proseminar: Scandinavian History

3-3-3† cr; Oakley

Scan 191f-192w-193s 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 Danish, Norwegian, Swedish, or Finnish, depending upon his language of primary interest.

Secretarial Training/see Business Administration

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 110-111-112.

Bulgarian (Blgr)

1f-2w-3s Beginning Bulgarian

3-3-3 cr; offered when feasible on alternating basis with Beginning Slovenian and Macedonian

Macedonian (Mace)

1f-2w-3s Beginning Macedonian

3-3-3 cr; offered when feasible on alternating 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, understanding, and reading basic Polish.

4f-5w-6s Intermediate Polish

3-3-3 cr; prereq 1-2-3 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 4-5-6 or §; offered when feasible; Zamojska

Reading and discussion of selected classic and contemporary texts.

Russian (Russ)

● **Major Sequence in Arts College**—Russ 56-57-58, 61-62-63, 71-72-73, and 6 credits each from 75-76-77 and 110-111-112.

● **Requirements for a Teacher's Certificate** (applicable only to students in the College of Education)—*Major recommendation*: 36 Upper Division credits including Russ 56-57-58, 61-62-63, 71-72-73, 75-76-77, and Clas 56. *Minor recommendation*: 27 Upper Division credits including Russ 56-57-58, 61-62-63; 71-72-73 or 75-76-77; and Clas 56.

LOWER DIVISION COURSES

1f-2w-3s Beginning Russian

5-5-5 cr; staff

Five class meetings a week. Provides basic experience in speaking, reading, and understanding the Russian language and its structure through the acquisition of basic patterns of speech.

For students who have demonstrated high ability and achievement during the first quarter.

2Hw-3Hs Honors Course: Beginning Russian

5-5 cr; prereq Δ; Sjoberg

4f-5w-6s Intermediate Russian

3-3-3 cr; prereq 3; Donchenko

Expansion of experience in speaking and understanding Russian, and reading of contemporary texts.

UPPER DIVISION COURSES

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

56f-57w-58s Russian Conversation

3-3-3 cr; prereq 6 or 17 or §; Alexeev

103f-104w-105s Russian Syntax and Composition

2-2-2 cr; prereq 63; Alexeev

Study of problems of syntax; practice in Russian prose composition.

61f-62w-63s Russian Composition

2-2-2 cr; prereq 6 or 17 or §; Alexeev

71f-72w-73s Readings in Russian Literature

3-3-3 cr; prereq 6 or §; Prokopov

Selected readings of representative Russian literature of various periods, in Russian. Discussion of material in Russian.

107f-108w-109s Structure of Modern Russian

3-3-3 cr; prereq 4-5-6 or §; Donchenko

110f-111w-112s Russian Literature in Translation

3-3-3 cr; prereq 9 cr in literature; knowledge of Russian required only of majors who will read assigned portions in the original; Prokopov

75f-76w-77s Russian Civilization and Culture

3-3-3 cr; prereq 10 cr in history or literature; knowledge of Russian not required; Donchenko

Aspects of Russian culture (land, peoples, languages, institutions, intellectual and artistic trends and achievements).

113f-114w-115s Soviet Russian Literature

3-3-3 cr; prereq 58 or §; Alexeev

Conducted entirely in Russian.

184 / Course Offerings and Major Requirements

125f-126w-127s History of Russian Language

3-3-3 cr; prereq 6 or equiv; offered when feasible

Linguistic analysis of historical development of Russian language

131f-132w-133s Russian Poetry: Nineteenth 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

Analytic approach to study of the novels of Dostoevsky.

151f-152w-153s Directed Readings

1 to 3 cr per qtr; prereq 73 or §; offered when feasible

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 1-2-3 or §; Sjoberg

Slavic (Slav)

UPPER DIVISION COURSES

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

71f-72w-73s South Slavic Literature
3-3-3 cr; offered when feasible

113f-114w-115s Old Church Slavic
3-3-3 cr; prereq Clas 56 or equiv; offered when feasible
Introduction to Slavic linguistics.

Slovenian (Slvn)

1f-2w-3s Beginning Slovenian
3-3-3 cr; offered when feasible on al-

ternating basis with Beginning Bulgarian and Macedonian

Social Science/see Interdisciplinary Programs

Social Work (SW)

Professional education for social work is at the graduate level—see *Bulletin of the Graduate School* and special *Bulletin of the School of Social Work*. The undergraduate preprofessional education for social work is jointly administered with the Department of Sociology—see Sequence B in Sociology below.

124f (old Pol 124) Government and Social Welfare

3 cr; prereq Pol 2 or §

Philosophy, policy development, and admin-

istration 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 and 45
- B. Total of 15 credits from sociology, anthropology, education, history, philosophy, political science, psychology, zoology

Requirements:

General sociology is built upon a core requirement of 21 credits as follows:

- A. Soc 53, 111, 120, 145 or 162, 180
- B. Soc 140 or 141
- C. Soc 170 or 171
- D. 9 additional credits in Upper Division sociology courses selected with approval of major adviser

Sequence B, Pre-Social Work Major

Prerequisites:

- A. Soc 1, 3, 45
- B. Pol 1-2 or 80
- C. Psy 1-2
- D. Anth 2A or 100
- E. Econ B-C or 50A-50B

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 credits in the humanities, approved by the adviser
- E. SW 124 or Soc 103 and one of the following: Pol 161, 162, Soc 170, 171, 172
- F. Psy 144-145

186 / Course Offerings and Major Requirements

A student majoring in this sequence must earn a minimum of 60 credits 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 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 *Bulletin of the Graduate School* and the special *Bulletin of the School of Social Work*.

Sequence C

Prerequisites:

- A. Soc 1, 3, 45
- 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, 100 or 102, 103, 118, 119, 123, 144, 145, 180, 120; or Anth 165; Soc 126 or 141, one of the following: Soc 170, 171, 172, Pol 161, 162
- B. CPsy 80 and 81
- C. Hum 54 or 6 Upper Division credits 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 credits in sociology including Soc 1, 3, 45, 53, 180 and at least 13 additional credits in courses numbered 50 or above.

See the *Bulletin of the College of Education* for additional required courses.

For a specialized minor curriculum in social studies see the *Bulletin of the College of Education*.

Honors Course—Students interested in the work of an honors course should consult the departmental faculty representative to honors council, Prof. Walter M. Gerson. For honors sections of Soc 1, 2, 3, 120, and 140, see the *Class Schedule*.

For purposes of general education the Department of Sociology recommends the following courses: Soc 1, 2, 3, 14, 53, 124, and 151.

LOWER DIVISION COURSES**1, 1A, 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; Gerson, Bennett, McNall, Fulton, Tallman

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.

1Af,w,s Man in Modern Society

3 cr; for AFHE students only; Nelson

1Hf Honors Course: Man in Modern Society

3 cr; prereq #; Nelson

2f,w,s The American Community

3 cr; prereq 1 or 1A or 1H or 3; Martindale, Zwerman

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: The American Community

3 cr; prereq #; Zwerman

3f,w,s Social Problems

3 cr; Fulton, Johnson, Gerson, McNall, 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; limited to 36 students; 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

45f,w,s Social Statistics

5 cr, §QA 5, §Psy 70

Introduction to statistical methods employed in analyses of social data including methods of measuring central tendency, dispersion, significance of differences, and correlation.

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 #; Ward, Finestone

General survey of field of criminology.

90f,w,s American Social Welfare

5 cr; prereq 3; Walz, Milstone

Analysis of American social welfare as a basic social institution.

91f,w,s Introduction to Social Work Process

3 cr; prereq 90 or consent of major adviser; Walz, Milstone

Analysis of nature of social work helping process through a 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 especial 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 #

188 / Course Offerings and Major Requirements

Study of law and judicial process for social workers, particularly those engaged in correctional field. Included are nature and effect of legal rules, constitutional, legislative, and judicial; the adversary process; the right to a hearing; the right to and function of counsel; fact determination under rules of evidence; concepts underlying criminal law and procedures; juvenile court; probation and parole.

104f Police Problems and Practices in the 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 §; Konopka

Current problems of institutional treatment of juvenile offenders and contributions of different professions to treatment.

106f Planning (same as Arch 132, and Pol 123)

3 cr; prereq sr; Borchert, Stone, Vivrett, Warp

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 §

Emphasizes cultural and social phases of population change, with particular reference to birth rates, death rates, and migration. Implications of population change.

112s World Population Problems

3 cr; prereq 1, or §; Gerson

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 the school, of welfare, case-work, and groupwork agencies, of the juvenile bureau in police departments, juvenile court, detention home, probation services, clinics, and integrated state agencies like Minnesota Youth Conservation Commission in prevention and modification of delinquent behavior.

120f,w,s Social Psychology

3 cr; prereq 1, or §; Rose, Stone, Bennett

Research and theory regarding relation of the 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 Soc 120)

121s Advanced Social Psychology

3 cr; prereq 120 or §; Rose

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 groups 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 §; Rose, Finestone

Interaction of social and cultural groups in America; particular reference to the 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. Considera-

tion of recent researches on social movements, reform and revolution, culture contact, impact of rapid technological change. The individual and the 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-qtr sequence with Psy 167 and Jour 115; Gerson

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 and CPsy 80 or #; Hill, Aldous

Analysis of the natural history of families, how they form, function, and achieve distinctive identities. Focus on 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 #; Gross, Gerson, 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 #; Gross

(See description Soc 140)

141f,w,s The Family

3 cr; prereq 1, or #; Johnson

Evolution of the family, development of unity or disunity, roles of the several members of the family, methods of investigation of the family.

142s Religion as a Social Institution

3 cr; prereq 1, or #; 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 The Newspaper as a Social Institution

3 cr; prereq 1, or #; Gerson

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, Gerson

Relationship of social mobility to social stratification and social organization. Analysis of hierarchical structure of society in relation to class and status.

145f Urban Sociology

3 cr; prereq 1, or #; Stone

Introduction to study of cities; urban ecology; urban institutions and urban way of life.

146w Industrial and Occupational Sociology

3 cr; prereq 1 and 15 cr in sociology, psychology, political science, or economics; Gross

Analyzes the occupational group, the factory, and the business enterprise as social institutions, with particular attention to contrasting functions of formal and informal organization, and to significance of co-operation, authority, communication, status, and group norms in the working situation.

148 Comparative Rural Societies: Latin America

3 cr; prereq 20 cr in sociology, economics, political science, or #; Ellenbogen

Demographic characteristics, systems of agriculture, settlement patterns, class and caste, family life, and level of living; other social institutions and social change.

150s Sociology of Popular Culture

3 cr; prereq 15 cr in sociology; Gerson

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 the 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 the aged.

190 / Course Offerings and Major Requirements

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 The Family in World Perspective (same as HE 183)

3 cr; prereq 1, Psy 1; Straus

Comparison of family organization and modes of functioning in selected major world civilizations. Emphasis on interrelations of the family with the 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 the rural community in American society; analysis of community demography, ecology, stratification, urbanization, and processes of co-operation and conflict.

161s Rural Community Analysis

3 cr; prereq 1, sr, or §; Donohue

Offered especially for all persons interested in rural community organization, rural teaching, extension work, and related fields. Emphasis placed on tools, techniques, and methods of making community field studies.

162f,w Rural Social Institutions

3 cr; prereq 1 or §; Donohue

Factors in rural environment that condition functioning of rural social institutions, including family, school, church, local government, health, and welfare.

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, with 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.

180f,w,s Methods of Social Research

3 cr; prereq 45 or equiv; Ramsey, Nelson

Survey, including advantages of major methods and limitations when applied to specific types of problems.

182w Statistical Methods

3 cr; prereq 45 or equiv; Tallman

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 45 or 182 or equiv

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 45 or equiv, and 180 or equiv; Straus

Direct experience with a variety of research techniques.

187w Quantitative Research Design

3 cr, §Geog 187; prereq Geog 87, Soc 45, §

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 45, §

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.

Spanish/see Romance Languages

Speech, Communication, and Theatre Arts

● Major Sequences in Arts College—

I. Oral Interpretation (Spch)

Prerequisites:

- A. Spch 5
- B. Th 11, 12, 21
- C. Psy 2

Requirements:

- A. Spch 61, 65, 67, 81, 82, 83, 105, 107, 108
- B. 6 credits of Upper Division courses in theatre

Students following the oral interpretation sequence should consider Spch 51, SSPA 99, Th 74 and 75. To meet either minor or elective requirements students should consider courses in English and American literature.

II. Public Address and Communication Theory (Spch)

Prerequisites:

- A. Spch 5, Th 11
- B. Psy 1-2

Requirements:

- A. Spch 51, 55, 56, 61, 67, 101, 102, 103, 106, 109, 126

III. Radio and Television (Spch)

Prerequisites:

- A. Spch 5, Th 11, 12, 21
- B. Psy 1-2

Requirements:

- A. Spch 65, 66, 67, 68, 69, 81, 106, 170, 171
- B. Th 63
- C. 3 credits from Spch 82, 83, 70, Th 61
- D. 6 other credits in Upper Division speech and/or theatre arts courses

192 / *Course Offerings and Major Requirements*

Students following the radio and television sequence should consider courses in journalism to meet either minor or elective requirements. Such students usually elect from among Jour 84, 85, 90, 111, 112, 114, 130, 162.

IV. Speech Science, Pathology, and Audiology (SSPA)

Prerequisites:

- A. Spch 5
- B. Psy 1-2, 4-5
- C. Phil 2
- D. Math 10

Requirements:

- A. SSPA 99, 119, 120, 121, 122, 140, 143, 170, 171, 172

Lower Division students who plan to follow the speech science, pathology, and audiology sequence are urged to acquire a broad background in the natural and social sciences. Suggested courses are as follows: Anth 2A, Cultural Anthropology; Biol 1A-2A, General Biology; Soc 1, Man in Modern Society; Econ 1, Principles of Economics.

V. Theatre (Th)

Prerequisites:

- A. Spch 5, 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 other credits in Upper Division speech and/or theatre arts courses

Students following the theatre sequence should consider the following courses to meet either minor or elective requirements: Psy 1-2; Mus 12A-B-C (special section for speech and theatre majors); Art 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; Extension Division: Theatre Dance (Extension Division credit only); Phil 151.

VI. Honors

An honors major is available to qualified students. Application for admission to the honors major should be made at the CLA Honors Division Office at the time of admission to the Upper Division of the Arts College. The

honors major is planned by the departmental co-ordinator with the assistance of an adviser.

Requirements:

- A. Not less than 36 credits in speech and/or theatre arts
 1. 6 to 9 credits in speech or Th 94H, 95H, and 96H
 2. One CLA honors seminar
 3. Preparation of an undergraduate thesis

Further information about the honors major may be obtained from the Departmental Honors Co-ordinator.

Speech Activities—All students in the University are urged to participate in Intercollegiate Debating, the Freshman-Sophomore Debate, the Freshman-Sophomore Oratorical Contest, the Pillsbury Oratorical Contest, the Verse Reading Contest, and the activities of the University Theatre.

Since many secondary school speech teachers are expected to direct speech activities, students preparing to enter teaching are urged to participate in the activities sponsored by the department.

Note—The University maintains a clinical service for students with speech or hearing defects. Students who desire treatment should consult the director of the Speech and Hearing Clinic, 215 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 descriptions for: Spch 2, 3, 4, 5, 50, 51, 55, 61, 65, 81, 82, 83, 106, Th 11, 12, 171, 172, 173.

Speech (Spch)

LOWER DIVISION COURSES

2f Communication in the Modern World: Interpersonal Communication

3 cr, §61; Donald 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 to social structure.

3w Communication in the Modern World: Mass Media

3 cr, §Jour 3
Mass media and their social and cultural effects. Interaction between audience and media. The popular arts. Related areas of communication; advertising, public relations, propaganda. The future of mass media and "mass culture."

4s Communication in the Modern World: The Performing Arts

3 cr; Ballet
Application of principles of communication to the arts of film, theatre, television, and other media.

5f,w,s Fundamentals of Speech

5 cr; Shapiro and staff
Development of basic skills in meeting a variety of speech situations: extemporaneous speaking, oral reading, discussion. Development of basic understanding of speech processes and forms.

5Hf,w,s Honors Course: Fundamentals of Speech

5 cr; prereq 3rd qtr fr with B avg; Bart, David Smith, Shapiro

6f,w,s Fundamentals of Speech

3 cr; prereq fr with Δ, soph, 5; Shapiro and staff
Activities progress from co-operative investigation to individual advocacy. Emphasis on investigation and persuasion ranging from informal committee session to formal meeting requiring parliamentary rules.

6A Voice and Articulation

3 cr; prereq 5 and §; offered when feasible

194 / Course Offerings and Major Requirements

Fundamentals of voice production and articulation. Examination and application of basic approaches used in voice and articulation improvement to individual cases.

9f,w,s Freshman Discussion and Debate

1 cr; open to freshmen who qualify for Freshman Debate Squad; prereq fr with C avg; Brock, Scott

UPPER DIVISION COURSES

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

Public Address and Communication Theory (Spch)

50f,w,s 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.

51f,w,s Advanced Public Speaking

3 cr; prereq 5; Bart, Brock, Scott, Shapiro, David Smith Preparation and delivery of speeches on current public issues.

55f,s,56w Speech Writing and Platform Speaking

3,3 cr; prereq 51 or †; Bormann, Piche Essentials of speech writing, organization, style. Presentation of speeches from manuscripts.

61f Introduction to Thought and Language in Human Behavior

3 cr, §2; prereq 5, Psy 2; Shapiro, Piche Basic orientation on the place of speech and language in human behavior; discussion of nature and function of the communication process.

67f,w,s Phonetics

3 cr; prereq 5; Wendahl Sounds of American English as they occur separately and in connected speech. Strong and weak forms, stress, assimilation. Practice in ear training.

97f,w Intercollegiate Oratory and Debate

2 cr; open to students who represent the University in annual contest of Northern Oratorical League and to students who qualify for intercollegiate debate squad; prereq soph with C avg, jr; Brock, Scott

97Af Intercollegiate Oratory and Debate

3 cr; designed for students interested in interscholastic speech competition; recommended for majors in College of Education; prereq 5; Brock, Scott, staff Performance in speech activities emphasized.

101f,102w,103s Argumentation and Persuasion

3,3,3 cr; prereq 5, Psy 2, 10 cr in social science; Brock, Howell, Scott Theories of modern motivational rhetoric. Analysis of persuasive speaking; practice in preparation and delivery of oral argument.

106f,w,s Discussion

3 cr; prereq 5; Bormann, Cashman, Howell, Shapiro, David Smith Co-operative thinking; recognition and definition of problems, critical analysis, examination of possible solutions. Planning, preparing for, participating in, and leading classroom, public, and radio and television discussions.

106A Public Speaking and Conference Leadership

3 cr; hospital administration majors only; Shapiro

108/Clas 108 The 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 the original language and in translation. Previous Upper Division work either in the study of a literature or in performance, but not necessarily in both, is expected.

109f Classical Rhetoric

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

110w History and Criticism of British Public Address

3 cr; prereq 5 and Δ; Jensen British orators, their works, the historical setting. British rhetorical theory.

124 Experiments in General Speech

3 cr; prereq 5, Psy 2; offered when feasible; David Smith Correlates of speech skills, audience reactions, and speech improvement.

126Aw History and Criticism of American Public Address

3 cr; prereq 5, Psy 2; Bormann Survey: history and criticism of religious and reform speaking in the United States from 1620 to 1920.

126Bs History and Criticism of American Public Address

3 cr; prereq 5, Psy 2; Bormann

Survey: history and criticism of political speaking in the United States from the time of the revolution to the present.

169s Speech and Language in Human Behavior

3 cr; Cashman, Shapiro

Basic orientation on the place of speech and language in human behavior. Individual projects and collateral reading.

169Aw Speech and Language in Human Behavior

3 cr; psychiatric nursing students only; Shapiro

Oral Interpretation (Spch)

81-82,83 Interpretative Reading

3-3,3 cr; prereq 5...81 is prereq to 82 or 83; Thompson, Fredricks, staff

Aesthetic theory of literature and of oral reading. Practice in reading for interpretation and mastery of technique.

105w Theory of Reading and Acting

3 cr; prereq 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.

107s Platform Reading

3 cr; prereq 83; Fredricks, Thompson

Advanced course in oral interpretation of selected poems and plays. Speech melody, rhythm, platform techniques. Problems in aesthetic analysis. Lecture recitals.

Radio and Television (Spch)

65f,w,s Radio and Television Speech

3 cr; prereq 5; Bart, Browne, Goldstein

Fundamentals of practice and theory. Emphasis on projects and exercises in performance and scripting; introduction to studio equipment and procedures.

66f,w,s Laboratory Section: Radio and Television Speech

1 cr; prereq 65 or ¶65; Bart

Arts and techniques of television. Basic experience with cameras, lighting, floor direction, and particularly the planning and construction of television visuals and settings in the on-the-air professional production environment.

68w,s Radio Production

3 cr; prereq 65

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.

69w,s Radio and Television Production

3 cr; prereq 65; Bart, Browne, Goldstein

Introduction to the problems of production. Equipment and staff organization; inter-relationships with program design. Exercises in production.

70f,s Television Production: Drama

3 cr; prereq 69; McCoy

Instruction and practice in specialized area of television production of drama. Aesthetics and techniques of use of television as a dramatic medium.

170s Radio and Television Programming

3 cr; prereq 65 or Th 63 or ¶; Bart, Browne, Goldstein

Theory and practice. Principles of program effectiveness; program policies of the industry. The FCC and programming. Emphasis on talk and discussion.

171f,s Advanced Television Production I

3 cr; prereq 69; Bart, Goldstein

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.

172f Advanced Television Production II

3 cr; prereq 171 and ¶; Bart, Goldstein

Advanced students solve production problems and apply creative techniques for regularly broadcast television programs.

173w 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.

174s Educational Television Programming and Administration

3 cr; prereq 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.

General (Spch)

94Hf,95Hw,96Hs Honors Course: Tutorial Seminar in Speech

3,3,3 cr; prereq candidate for graduation with honors in speech and Δ, ¶

Independent reading, thesis preparation, and discussion of research in selected fields.

122f,s Introduction to Research

3 cr; prereq sr, 5, 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 theatre arts and #

Directed reading and preparation of reports on selected subjects.

Speech Science, Pathology, and Audiology (SSPA)

UPPER DIVISION COURSES

99f,s Introduction to Speech Pathology and Audiology

3 cr; Siegel, McDermott
Survey of concepts basic to the understanding of normal and abnormal speech and hearing function. Introduction to the causes, characteristics, and modifications of communication problems.

101,102,103 Readings

Cr ar; prereq #; staff
Directed readings and preparation of reports on selected subjects.

119f Fundamentals of Sound

3 cr; Ward, Wendahl
Elements of acoustics necessary to an understanding of the quantitative aspects of speech pathology or audiology. Vibrators, transmission systems and their mathematical counterpart.

120f Anatomy and Physiology of the Speech and Hearing Mechanisms

3 cr; prereq 119 or #; Lassman, McDermott
Gross anatomy and function of structures related to respiration, phonation, articulation, and audition.

121w Acoustic Phonetics

3 cr; prereq 119, 120 or ¶120; Wendahl
Physiological and acoustical variables differentiating speech signals. Various phonemic classification systems including I.P.A. and Distinctive Feature Analysis; phonemic transcription is practiced.

122s Voice Science

3 cr; prereq 119, 120, 121; Wendahl
Close inspection of research data relevant to basic processes involved in speech production and perception. Topics: respiratory system as a generator, the vocal folds and articulators as sound sources and the vocal tract as an acoustic modifier of the sound source. Laboratory experience and exercises.

123s Laboratory Instrumentation

3 cr; Wendahl
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.

140f,w,s Diagnosis and Evaluation of Speech Disorders

4 cr; prereq 99 and 121 or ¶121, and #; Martin, Stoltz
Principles. Consideration of research and clinical materials relative to construction, administration, and interpretation of various diagnostic instruments. Observation and par-

ticipation in various diagnostic speech facilities.

141w Stuttering

3 cr; prereq 99 or #; Henrikson
Analysis of materials relating to development, characteristics, and treatment of stuttering. Class demonstrations and individual projects.

142s Voice Disorders

3 cr; prereq 99, 120 or #; Starr
Voice disorders (pitch, loudness, quality), their symptomatology, etiology, diagnosis, and treatment. Topics considered include: organic pathologies of the voice, psychological factors and voice, methods of diagnosis and treatment of voice disorders.

143w Articulation Disorders

3 cr; prereq 99, 121 or #; McDermott
Research and theory of nature, etiology, and treatment of articulatory problems.

144w Neuromuscular Disorders

2 cr; prereq 120, 143 or #; Greenberg
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. Topics considered include: sensory and motor problems; language problems; diagnosis and treatment.

145s Aphasia

2 cr; prereq 99, 120 or #; Greenberg
In adults and children. Etiology, language, and associated nonlanguage problems; therapeutic considerations and procedures.

146f Cleft Palate

2 cr; prereq 120, 143; Starr
Survey of medical, dental, and communication problems that occur in conjunction with cleft palate. Topics include: anatomy and physiology involved in velopharyngeal closure, etiology of cleft palates; surgical, orthodontic and prosthodontic treatment of cleft palate; articulation, voice, language and hearing loss problems occurring in persons with cleft palates.

147f Rehabilitation of the Laryngectomized

2 cr; prereq 99, 120 and #; 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. Co-operation with other rehabilitation agencies and personnel.

150w 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

3,3 cr; prereq 141, 142; staff

166Af,w,s Clinical Methods and Practice in Speech Pathology: Cleft Palate

1-3 cr; prereq 141, 142 or #; Starr

166Bf,w,s Clinical Methods and Practice in Speech Pathology: Voice

1-3 cr; prereq 141, 142 or #; Starr

166Cf,w,s Clinical Methods and Practice in Speech Pathology: Articulation

1-3 cr; prereq 141, 142 or #; McDermott

166Df,w,s Clinical Methods and Practice in Speech Pathology: Stuttering

1-3 cr; prereq 141, 142 or #; Martin

166Ef,w,s Clinical Methods and Practice in Speech Pathology: Neuromuscular Disorders

1-3 cr; prereq 141, 142 or #; staff

166Ff,w,s Clinical Methods and Practice in Speech Pathology: Aphasia

1-3 cr; prereq 141, 142 or #; Greenberg

166Gf,w,s Clinical Methods and Practice in Speech Pathology: Laryngectomy

1-3 cr; prereq 141, 142 or #; Henrikson

166Hf,w,s Clinical Methods and Practice in Speech Pathology: Hearing Impaired

1-3 cr; prereq 141, 142 or #; Houchins

170f Hearing Disorders

3 cr; prereq 99, 119 or #; 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.

171f,s Audiometry I

4 cr; prereq 99 and 119; Chaiklin

Pure tone and audiometry; air and bone conduction; screening audiometry; hearing conservation programs.

172s Communication Problems of the Hearing Impaired

3 cr; prereq 170 or #; Houchins

Effects of impaired hearing on speech and language development. Development of speech and language for hearing impaired individuals through speech, speedreading, auditory training, and other special methods and philosophies.

173w Audiometry II

3 cr; prereq 171; Lassman and staff

Loudness measurements and their relation to the assessment of auditory disorders. Theoretical bases of loudness measurements, relevant research on loudness variables; laboratory and clinical instrumentation, procedures such as loudness matching Bekey

audiometry, and difference limen tests; implications for auditory problems.

174w Speech Audiometry

3 cr; prereq 122, 171 or #; Chaiklin

Use of speech signals in evaluating the auditory system's function; types of stimulus materials, methods of administration, and interpretation of results; research on theoretical and applied aspects.

175w Galvanic Skin Response Audiometry

3 cr; prereq 173; Chaiklin

Galvanic skin response audiometry in the differential diagnosis of auditory disorder; nature of the GSR mechanism; historical aspects; conditioning literature relevant to audiometry; special applications such as instrumental avoidance and delayed feedback techniques.

176w Hearing Science

3 cr; prereq 170 or Psy 55; Ward

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

177 Industrial Audiology and Occupational Hearing Loss

3 cr; prereq 170 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.

180s Auditory Training

3 cr; prereq 119, 171 or #; Houchins

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.

181w Speech for the Hearing Impaired

3 cr; prereq 170 or #; Houchins

Speech problems resulting from impaired hearing. Survey of approaches of developing and teaching speech to the hearing impaired individual.

182f Lipreading and Lipreading Methods

3 cr; prereq 170 or #; staff

Theory, principles, and methods of teaching lipreading. Considerations of visual perception and learning. Supervised practice in teaching lipreading to hard-of-hearing persons.

183f Language for the Hearing Impaired

3 cr; prereq 170 or #; Houchins

Language problems resulting from impaired hearing. Survey of approaches of developing and teaching language to the hearing impaired individual.

198 / Course Offerings and Major Requirements

190f,191w,192s **Clinical Methods and Practice in Audiology**
3,3,3 cr; prereq 173 or 174 or ‡; Chaiklin and staff

Methods and supervised practice in analysis diagnosis and habilitation of communication disorders of persons with auditory impairments.

Theatre Arts (Th)

LOWER DIVISION COURSES

11f,w,s **Introduction to Theatre Arts**
3 cr; Ballet
History and theory of plays and production as well as various arts and crafts of the theatre.

12f,w,s **Laboratory Section: Introduction to the Theatre**
1 cr; prereq 11 or ¶11; Adey
Practice of arts and crafts of the theatre; scenery and particularly construction and painting, stage operation, publicity and promotion, theatre lighting, costuming, or make-up.

13Hf,w,s **Honors Course: Introduction to the Theatre**
1 cr; prereq 11 and ‡; Ballet
An enrichment honors course for students who have completed Th 11 with outstanding work in class.

21f,w,s **Beginning Acting: Creative Approach**
3 cr; prereq fr with Δ, or soph, 12 or ¶12; Herstand, Klein, staff
Creation and presentation of original scenes

and skits. Ability to respond to the imaginative situation with individuality and effectiveness is stressed.

22f,w,s **Beginning Acting: Creating a Role**
3 cr; prereq 21; Herstand, Klein
Application of creative techniques to the analysis, understanding, and theatrically effective communication of roles from dramatic literature.

23f,w,s **Beginning Acting: Technique**
3 cr; prereq 21 or ‡; Moulton
Fundamentals of body movement, rhythms, and acting technique. Individual and group performances.

24f,w,s **Stage Make-up**
1 cr; prereq 12; staff
Theory and practice in the art of stage make-up.

34f,w,s **Stagecraft: Construction and Painting**
3 cr; prereq soph, 12; Adey
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.

Total accumulation of credits allowable in courses 101, 102, 103, 114, 118, 119, 120, 121, 122, 123, 141-142-143, 151, 174-175-176: MFA candidates—unlimited credit; MA candidates—9 credits; PhD candidates—18 credits.

51Af,52Aw,53As **Our Theatre Today**
 $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$ cr; prereq acceptance as an undergrad theatre major or ‡; required of jr theatre majors; staff
Discussion and analysis of current trends, problems, and achievements in theatre of the present day.

51Bf,52Bw,53Bs **Our Theatre Today**
 $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$ cr; prereq 53A; required of sr theatre majors; staff
Discussion and analysis of current trends, problems, and achievements in today's theatre.

61f,w,s-62s,63w,s **Advanced Acting**
3-3,3 cr; 61f open only to students in major sequence E; 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.

74f **Play Production in the Secondary School**
3 cr; prereq 12; Adey
Technical fundamentals: stagecraft, design, lighting, and costuming.

89s **Introduction to Visual Arts of the Drama**
3 cr, §Th 34,74,90,91,92; prereq 12; Josal
Technical fundamentals of stagecraft, design, lighting, and costuming for B.F.A. candidates in acting.

90w,s **Costuming**
3 cr; prereq 12, 34; Schulze
Theory, design, and construction of costumes for stage and television.

91f,w Scene Design

3 cr; prereq 12, 34; Josal

Theory and practice of designing scenery as a functional environment for stage and television.

92f,s Stage Lighting

3 cr; prereq 12, 34; staff

Theory and practice in applying methods and principles of lighting in theatrical production.

94Hf,95Hw,96Hs Honors Course: Tutorial Seminar in Theatre Arts

3,3,3 cr; prereq candidate for graduation with honors in theatre arts, and Δ, ♯; staff

Independent reading, thesis preparation, and discussion of research in selected fields.

100w Introduction to Research

3 cr; prereq sr, Spch 5, 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, ♯; staff

Directed individual creative projects meeting approval of a faculty committee in one or more of these areas: playwrighting, directing, acting, and design.

111f-112w-113s Stage Direction

3-3-3 cr; prereq sr, 21, 6 cr from 90, 91, or 92 and ♯; Whiting, Balk

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.

114f,w,s Theatre Management and Promotion

3 cr; prereq 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.

115f-116w Playwriting

3-3 cr; prereq 21 or ♯; Thompson (f), Nolte (w)

Creative practice in play construction. 115: One-act play. 116: Full-length play.

117 Writing Radio and Television Drama

3 cr; prereq 21, Spch 5 or ♯; staff

118f,119w,120s Stage-Fencing and Combat: History and Execution

1,1,1 cr; prereq 12 or ¶12, ♯; 4 hrs per wk; Dusek

History of weapons through the ages; fighting and fencing with these weapons. Emphasis on their use in stage combat.

121f-122w-123s Problems in Acting

3-3-3 cr; prereq 61-62 and ♯; 5 hrs per wk; Herstand, Klein

Acting problems stemming from differences in genres and styles of dramatic production from the Greeks to the present. Emphasis on intensive scene and character analysis and on skill in communicating character and concept to an audience in individual and group performance.

127f,128w,129s Production for the Lyric Stage

3,3,3 cr; prereq music major or ♯, ¶Mus 147, 148, 149; Balk

Problems in acting, staging, and administration for the lyric stage.

131w 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. Observation of children's classes in creative dramatics. Readings, projects, term papers.

132s Children's Theatre

3 cr; prereq 12, or ¶12, or ♯; Graham
Selection, direction, and production of plays for children's audiences, co-ordinated with current productions of the Young People's University Theatre.

141f-142w-143s Production of Television Drama

3-3-3 cr; prereq 63 or Spch 65, Th 61, 111-112, Spch 69, and ♯; offered 1967-68 and alt yrs; Goldstein

151su Theatre Symposium

6 cr; grad or ♯; Ballet, staff

Intensive study of the art of the theatre with particular emphasis on productions and production methods of the Tyrone Guthrie Theatre. Conducted by professional critics, actors, directors, and designers as well as University faculty members.

171f,172w,173s History of the Theatre

3,3,3 cr; prereq sr, Spch 5, Th 12 and 100, or ♯; Herstand, Klein, Nolte

Plays, arts, and crafts of the theatre from their beginnings to present. Reports and projects.

174f-175w-176s History and Technique of Stage Movement

3-3-3 cr; prereq 171, 172, 173 and ♯; Moulton

Application of historical research in the areas of manners, games, and dances to techniques of body movement for the stage.

177,178,179 Theatre Backgrounds

3,3,3 cr; prereq jr, sr, grad, 11 or equiv plus 9 Upper Division cr in English, speech-theatre, Classics or modern languages; offered when feasible; Ballet

Selective examination of plays as part of the living theatre. Chronological, comparative study of development of theatrical ele-

200 / Course Offerings and Major Requirements

ments in the drama from its origins through the present time.

180 American Theatre

3 cr; prereq 12 or grad; offered when feasible; staff

The theatre as an aspect of American culture from 1752 to the present.

181,182,183 Readings in Theatre Arts

Cr ar; prereq 9 cr in theatre arts and #; staff

Directed reading and preparation of reports on selected subjects.

190f Advanced Problems in Costuming

3 cr; prereq 111-112 or #; offered alt yrs with 290; Moulton
Theory and design.

191w Advanced Problems in Scene Design

3 cr; prereq 111-112 or #; Josal
Special projects and reports.

192s Advanced Problems in Stage Lighting

3 cr; prereq 111-112 or #; Josal
Theory of stage lighting. Special projects and reports.

Statistics (Stat)

● Major Sequence in Arts College—Calculus through Math 108, 131A or 149, and 21 credits in Upper Division courses in statistics including Stat 131-132-133. Students majoring in statistics, also minoring in mathematics, must take 6 additional credits in Upper Division courses in mathematics or statistics.

LOWER DIVISION COURSES

41 Introduction to the Ideas of Statistics

3 cr; prereq Math 10 or #; staff

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 referred to below, numbered below 200, and 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; staff

Elementary probability and probability distributions; sampling and elements of statistical inference.

101w Introduction to Decision Theory

3 cr, §132; prereq Econ 101A, or Math 40, or Math 42, or Math 13, or #

Elements of probability; basic concepts in statistical decision theory; relationship to game theory and other types of decision problems; prediction and inference.

PubH 110A-110B-110C Statistical Methods (Biometry) (see PubH 110A-B-C, page 168)

3-3-3 cr; prereq Math 10 or # and §111A-111B-111C

PubH 111A,111B,111C Statistical Methods Laboratory (Biometry) (see PubH 111A,B,C, page 168)

2,2,2 cr; prereq §110A,110B,110C

121f-122w-123s Theory of Statistics

3-3-3 cr, §131-132-133; prereq Math 10 for 121, Math 43 for 122, Math 44 for 123, or equiv; staff

Univariate and multivariate distributions, law of large numbers, sampling, likelihood methods, estimation and hypothesis testing, regression and analysis of variance and covariance, confidence intervals, distribution-free methods.

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 nonparametric procedures for one-sample and two-sample problems, regression, analysis of variance.

Math 133B-134B Probability with Technological Applications

3-3 cr; prereq Stat 131, Math 153...or Stat 131, Math 148-149...or #

Spectral analysis of stationary processes, linear and nonlinear transformations, recurrent events, random walk and diffusion, Markov chains, Poisson processes.

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.

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.

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 108 or 133 or #

Probability theory and its applications with 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.

191f-192w-193s Analysis and Design of Experiments

3-3-3 cr; prereq 123 or 133, and matrix theory

Theory and applications of the general linear model, regression, analysis of variance, and design of experiments.

194 Introduction to Correlation and Multivariate Analysis

3 cr; prereq 133 and Math 131A or #

The 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. Classification problems and the discriminant function.

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. For he should 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.

202 / Course Offerings and Major Requirements

The Lower Division curriculum outlined below satisfies the Arts College distribution requirements. At the same time it specifies a number of modifications. Therefore the freshman who intends (or is seriously considering) entering a theological seminary should study the program carefully, talk it over with specially designated Lower Division advisers, and also discuss it as soon as possible with one of the major advisers. Such consultation will be useful whether or not the student decides to elect the interdepartmental program.

In planning their Lower Division program students should see the General Distribution Requirements listed on page 7, as well as the special requirements and recommendations listed below. (See also p. 226.)

LOWER DIVISION

- A. **Freshman English:** Engl A-B-C (if eligible); otherwise Comp 1-2-3
- B. **Foreign Language:** Greek strongly recommended
- C. **Social Science:** Hist 14, 15, 16 (required; may be fulfilled by Hist 50, 51, 52 and 6 cr in other departments [excluding history and psychology])
- D. **Natural Science:** Psy 1-2 (required) and 9 credits in mathematics or physical science. Laboratory requirement may be met by taking Psy 4-5
- E. **Humanities:** Phil 2 (required) and 10 credits in other departments (excluding history and mathematics). Engl 21, 22, 23, 37, 38, 39, Comp 27-28, Spch 5 recommended
- F. **Health:** PubH 2 (Personal and Public Health, 2 cr) or PubH 3 (Personal Health, 2 cr) or equivalent

UPPER DIVISION

The following are specific requirements, not all of which need be met by Upper Division courses. However, at least 60 credits must be earned in Upper Division courses for graduation.

- A. **Fine Arts:** 9 credits minimum selected from art, music, theatre arts
- B. **History:** 18 credits minimum in medieval and modern history (at least 9 modern)
- C. **Language and Literature:** 9 credits minimum in English; 9 credits minimum in Greek, Hebrew, Latin, modern foreign language, foreign literature in translation, or humanities
- D. **Philosophy:** 21 credits minimum, including history of philosophy (Phil 50,51,52)
- E. **Social Science:** 12 credits minimum in anthropology, economics, political science, sociology, speech, psychology

Tibetan/see East and South Asian Languages

Zoology (Zool)/College of Biological Sciences

See also listings under Biology

● **Major Sequence in Arts College—Zool 51, 52, 53, 66, 91 or 92, 94 and 8 additional credits in courses numbered 50 or above.**

Students will not be admitted to this major after the spring quarter of 1967 but should pursue work toward the B.A. in biology. See requirements under biology.

UPPER DIVISION COURSES

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

51f Cell Biology

3 cr; prereq Biol 2 or 50, GeCh 4-5; Hooper

Dynamic aspects of cell structure and macromolecular organization, with emphasis on current research.

52f General and Comparative Embryology

5 cr; prereq Biol 2 or 50; Spratt
Embryological development of invertebrate and vertebrate forms.

53w Comparative Anatomy

5 cr; prereq soph, Biol 2 or 50; Huver
Comparative study of vertebrate systems, tracing the development of various structures from lowest forms to man.

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.

66,67,68 (see Gen 66, Biol 70, 71)

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 and Fishes

5 cr (formerly 6 cr); prereq Biol 2 or 50; offered at Lake Itasca Biology Session only

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; Beer
Distinguishing characteristics and life histories of various mammal groups, particularly those represented in the state.

91f Comparative Animal Physiology

5 cr; prereq Biol 2 or 50, GeCh 5, or §; Schmid

Introduction to animal physiology, emphasizing functional aspects of organ systems from a comparative viewpoint.

92s General Physiology (see Biol 110 and 111)

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.

94 Ecology (see Biol 80 and 81)

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 per qtr; prereq sr, major in a biological science, §; staff
Discussion of biological topics of current interest.

99f,w,s Individual Work in Some Special Discipline

Cr or; prereq Biol 2 or 50 and §; staff

107f Protozoology

4 cr; prereq §; Kerr
Introduction to taxonomy, morphology, physiology, development, and genetics of free-living protozoa.

110s Animal Behavior

3 cr; prereq 91 or 92 or equiv and §
Survey of effector mechanisms, their nervous and endocrine control, and behavior patterns of animals.

112f Advanced General Physiology

3 cr; prereq 91 or 92 or equiv and §
Topics of current interest in physiology.

114f Sensory Physiology

3 cr; prereq 92 or equiv and §; offered 1967-68 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 (formerly 6 cr); prereq 15 cr in zoology; offered at Lake Itasca Biology Session only

Advanced taxonomic and ecological survey of local fauna, detailed and independent ecological study of several taxonomic groups.

116w Population Dynamics

2 cr; prereq 94 or §...Math 44 recommended; offered 1967-68 and alt yrs; Williams

Seminars and lectures on verbal and mathematical population theories; emphasis on relationship to laboratory and field data.

204 / Course Offerings and Major Requirements

117w Theoretical Biology

3 cr; prereq #; offered 1966-67 and alt yrs; Williams

A consideration of the role of semantic and mathematical theory in biology, including philosophical foundations and methodology. Detailed examples drawn from various fields of biology.

118w Experimental Ecology

3 cr; prereq 9 cr in biology or equiv and 3 cr in ecology and #; for companion lab course see Ent 201; Chiang

Environmental factors affecting animal populations.

119su Limnology

5 cr (formerly 6 cr); prereq 15 cr in zoology incl Biol 2 or equiv; offered at Lake Itasca Biology Session only; Underhill

Conditions for life in water and distribution of aquatic animals.

121f 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.

125f Insect Morphology

5 cr (formerly 4 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 (formerly 4 cr); prereq 125, OrCh 42 or 62, #; Brooks

Reproductive behavior, embryology and postembryonic development of insects.

127s Insect Metabolism and Co-Ordination

5 cr (formerly 4 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 1966-67 and alt yrs; Cook

Lectures on history, the species concept and higher categories, systematic procedures, and zoological nomenclature.

135su Field Ornithology

5 cr (formerly 4 cr); prereq 15 cr in zoology; offered at Lake Itasca Biology Session only

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; staff

140 Biological Microscopy

4 cr; prereq 15 cr in zoology, entomology, or botany, and #; offered when demand warrants; Richards

Necessary elements of optics, use and limitations of various types of microscopes, interpretation of microscopical data. Laboratory, demonstrations, plus project in field of student's interest.

143su Animal Parasites

5 cr (formerly 6 cr); prereq 15 cr incl Biol 2 or 50; offered at Lake Itasca Biology Session only

Parasites of local fauna with special reference to helminths.

144f Medical Entomology

3 cr; prereq 15 cr incl 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 incl 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 cr incl Biol 2 or 50 and #; Wallace

Worm parasites of man and animals, their structure, life histories, and biological relationships.

153f Molecular Biology

3 cr; prereq 51, Phys 9 or equiv and #; offered 1966-67 and alt yrs; Benolken

Quantitative analysis of cellular processes which may be treated on a molecular basis: osmotic pressure, Brownian motion, ion distribution, phase separations, intermolecular forces.

155f,156w,157s Biophysics

3,3,3 cr; prereq 28 cr distributed between physics and biology, and #... physical chemistry and general physiology recommended; schedule ar; 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.

162su Vertebrate Ecology

5 cr (formerly 6 cr); prereq Biol 80 or equiv; offered at Lake Itasca Biology Session only; Marshall, Tester

Field work on populations and their relationships to local environments; habitat

analysis and ecological research methods. Individual and team research projects, field trips, and lecture.

164w Cytology

3 cr (formerly 2 cr); prereq 51 or ‡;

Luykx

Principles and methods of experimentation; organization, function, and ultrastructure of cells and cell components; cell growth and cell heredity.

165s Advanced Cytology

2 cr; limited to 10-15 students; prereq

160 and ‡; schedule ar; Luykx

Selected topics in current cytological research.

166w-167s Cytology Laboratory

2-2 cr; prereq ‡; Luykx

Phase contrast microscopy, cytochemical methods, autoradiography; demonstration of optical equipment; individual projects.

195su Problems in Ornithology, Ecology, and Limnology

Cr ar; prereq Biol 2 or 50 and ‡;

offered at Lake Itasca Biology Session only; staff

Principles and further work in special lines adapted to needs of individual students.

196su Special Problems in Entomology and Vertebrate Ecology

Cr ar; prereq ‡; offered at Lake Itasca Biology Session only; Cook, Marshall, Tester

Advanced work in entomology and ecology and ample opportunity for individual research, especially in various faunistic studies.

Entomology, Fisheries, and Wildlife/College of Agriculture, Forestry, and Home Economics

Students in the Arts College may elect courses in entomology, fisheries, and wildlife by arrangement with the department, but before registering for any course they should get the approval of the Scholastic Committee. See the *Bulletin of Agriculture and Forestry*.

Section III

PREPROFESSIONAL CURRICULUMS 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 curriculums in the Arts College that are prerequisite for entrance into the various professional schools are listed below.

A. SCHOOL OF ARCHITECTURE

This 6-year curriculum is intended for students who wish to combine with their professional training more general education than is offered by the 5-year professional curriculum in architecture. It normally leads to the bachelor of arts degree (B.A.) with a major in architecture at the end of 4 years and the bachelor of architecture degree (B.Arch.) at the end of 6 years.

The work of the first 4 years constitutes a modified version of the curriculum prescribed for the Arts College major in architecture. The following procedures and program of studies should be adhered to in order to complete the work required for the two degrees in the proper sequence and in the normal time.

First and Second Years—The first 2 years' work may be taken at the University of Minnesota in the Lower Division of the Arts College, or at other accredited institutions. During this period the student should complete the requirements for entrance to the Upper Division as stated on page 8 (see also p. 226). These requirements should include the following:

(Credits shown in parentheses)

High school or college equivalents of higher algebra, trigonometry, and solid geometry	Phys 1A-2A-3A—Physical Science Laboratory (3)
Math 15—College Algebra (5)	Art 23A-24A-25A—Drawing and Painting I (6)
Math 42-43—Analytic Geometry and Calculus I and II (10)	
Phys 1-2-3—Introduction to Physical Science (9)	Approved electives to make a minimum total of 90 credits

Third and Fourth Years—During these years the student is registered in the Upper Division of the Arts College as a regular candidate for the B.A. degree with a major in architecture. Such a candidate must secure the approval of the School of Architecture. Application forms (AR 110) may be obtained from the School of Architecture or from the Office of Admissions and Records.

Applications should be submitted not later than June 1 preceding the beginning of the academic year for which admission is being sought.

The following courses should be included:

Arch 51-52-53—History of Architecture (9)	MM 92,93—Statics and Solid Mechanics for Architects (8)
Arch 81-82-83—Architectural Design (18)	Approved electives to make a minimum total of 180 credits acceptable for the B.A. degree.
Arch 91-92-93—Architectural Design (18)	
Art 60A-61A-62A—Drawing and Painting II (6)	

One of the following sequences must also be included in the third or fourth year in order to permit completion of the curriculum in 6 years. Credit for such, however, may not be counted in the 180 credit B.A. degree requirement:

CE 78-79-80—Elementary Structural Design Arch 71-72-73—Building Technology

Fifth and Sixth Years—During these years the student is registered in the Institute of Technology. Before doing so, he must obtain the approval of the School of Architecture as a candidate for the B.Arch. degree by petitioning for change of college from CLA to IT. See the *Bulletin of the Institute of Technology* for specific course sequence leading to the B.Arch. degree.

B. 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

All applicants to the School of Business Administration for the fall quarter, 1967, and thereafter, must meet the following requirements (different requirements that will be in effect *until* the fall quarter of 1967 are noted at the end of this section):

(Credits shown in parentheses)

I. Business and Economics Courses—(15)

Sophomore Courses:

Acct 24-25-26—Principles of Accounting (9)
Econ 1-2†—Principles of Economics (6)

208 / *Preprofessional Curriculums*

2. Freshman English—(9-15) (satisfaction of Arts College Freshman English requirement)

Engl A-B-C—Freshman Composition and Literature (15)
Comp 1-2-3—Freshman Composition (12)
Comm 1-2-3—Communication (12)
Exemption from requirement

3. Mathematics—(10 or more)

Math 10 (or Math 15)—College Algebra (5)
Math 40—Calculus (5)
(Math Z—Preparatory Mathematics, may be needed to qualify for Math 10 or 15)

4. Social Sciences—(15)

Psy 1-2† (6)
Soc 1 (3)
6 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)

5. Natural Sciences—(9)

In a single natural science to be selected from botany, chemistry, geology, physics, zoology, or NSci 4-5-6. All courses must include laboratory. This requirement can be met currently in the Arts College 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, 1A-2, 2A-3, 3A—Physical Science (12)
NSci 4-5-6†—Physical World (12)
Geo 1-2—General Geology (8)

Note—Geo 1-2 does not meet the 9 credit requirement. A student must take an advanced laboratory course in geology such as Geo 62 to complete the 9 credit requirement.

6. Humanistic Courses—(10)

From at least two of the categories listed below. At least 5 credits must be taken in each category used to satisfy this requirement (4½ transfer credits will satisfy the 5-credit requirement). Art, English literature (which may include 6 credits of literature from Engl A-B-C), foreign literature, humanities, music, philosophy, speech and theatre arts.

7. Electives to complete the approximately 90 credits required for admission.

8. Students planning to enter the B.S.B. accounting program are required to complete Comp 27—Advanced Writing (3) in addition to the above.

Prebusiness requirements for students admitted prior to fall quarter, 1967, vary from those stated above as follows (numbers refer to sections of the requirements):

1. QA 5—Elements of Statistics (4) is required in addition to Acct 24-25-26 and Econ 1-2
3. Math 40 is not required.
4. Psy 1-2 and Soc 1 are not required, but students must present 15 credits in two or more of the departments listed; at least 5 credits must be taken in each department used to satisfy the requirement (4½ transfer credits will satisfy the 5-credit requirement).

C. SCHOOL OF DENTISTRY

The 6-year dentistry program consists of 2 years of prescribed liberal arts work, during which 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. Predental course work can be begun at any time, but students are accepted into the School of Dentistry only in fall quarter.

Requirements for Admission

General—A minimum of 90 quarter credits (60 semester hours) from an accredited liberal arts college is required, 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 quarter credits. If the basic English course is less than 12 quarter credits, additional credits may be completed in composition, literature, etymology, or speech to satisfy the minimum requirement of 12 quarter credits.
2. *General biology or general zoology*—10 quarter credits
3. *Physics*—12 quarter credits
4. *General principles of chemistry*—12 quarter credits.
5. *Organic chemistry*—8 quarter credits. The course must contain both the 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 the 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 acceptable.

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, the requirements for admission described above are commonly met by the following courses, provided algebra and plane geometry have been taken in high school:

Comp 1-2-3 (12 qtr cr) or Comm 1-2-3 (12 qtr cr), or Engl A-B-C (15 qtr cr); Biol 1-2 (10 qtr cr); GeCh 4-5, 6 (14 qtr cr); OrCh 61-62 (10 qtr cr); Phys 1-2-3 and 1A-2A-3A (12 qtr cr); elective courses to include at least 20 credits in liberal arts subjects as listed above. It is recommended that additional electives be selected from the following courses: Math T, 10, 15, 40; AnCh 57A-B; Zool 53, Gen 66; Art 20; and Clas 48

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 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 *Bulletin of the School of Dentistry*, 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 8 and 9 of this bulletin and the graduation requirements listed on pages 11 to 13 (see also p. 226). 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.

D. 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 curriculums, 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.

Curriculums in Which Students Normally Begin Directly in the College of Education

Physical Education

Recreational Leadership

These curriculums are described in the *Bulletin of the College of Education*. Arts College students who decide on one of the above majors should transfer to the College of Education as soon as possible.

Curriculums in Which Students Normally Spend the Freshman Year in the Arts College

Art Education

Industrial Education

Business and Distributive Education

Music Education

Requirements for Transfer to the College of Education

1. Students planning to transfer to these majors are expected to complete 45 quarter credits with a 2.00 (C) average. Art education and music education students are also expected to present a 2.50 (C+) average on all courses taken in the major. During the freshman year students take CLA courses from the appropriate curriculum described in the *Bulletin of the College of Education*.
2. Art education students should include in their freshman year a minimum of 15 credits of art with at least one course in each of the 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 the 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 the freshman year.

Application Procedures

1. A student should apply for transfer *early* in the quarter in which he will meet the above-listed criteria (usually spring quarter of the freshman year).
2. The student makes application at the "Transfer" window (room 6) in Morrill Hall.
3. The student should complete the necessary clearances as outlined on the clearance form issued at the time of application for transfer.

Curriculums in Which Students Normally Spend Two Years in the Arts College Before Transfer

Biological Science	Geography	Physics
Chemistry	German	Political Science
Earth Science	History	Russian
Economics	Language Arts	Sociology
Elementary Education	Latin	Spanish
English	Mathematics	Speech
French	Nursery-Kindergarten- Primary (NKP) Education	Speech Pathology

Requirements for Transfer to an Academic Major in the College of Education (except speech pathology)

1. 90 quarter credits with a 2.00 (C) grade point average.

2. 15 quarter credits in a major field with a 2.50 (C+) grade point average.
3. 10 quarter credits in a minor field with a 2.00 (C) grade point average. (For those individuals taking broad field majors, the minors may be subdivisions of the broad field major and the student should present a minimum of 25 credits in the major.)
4. Freshman English: Comp 1-2-3 or Engl A-B-C or Comm 1-2-3 or Engl 10H-11H-12H or exemption.
5. 48 additional credits from the following categories as indicated:
 - a. *Communication, Language, or Symbolic Systems* (9 cr)—English and foreign language communication skills; linguistics, rhetoric, logic, philosophic analysis; mathematics.
 - b. *Physical and Biological Science* (12 cr)
 - c. *Man and Society*—Psy 1-2. In addition, 12 credits selected from among at least two of the following fields: history, geography, political science, sociology, anthropology and economics; or SSci 1-2-3 plus an additional 3-credit course in one of the social sciences.
 - d. *Artistic Expression*. 9 credits from literature in the original or in translation, humanities, art, and music.
6. PubH 5 or 50 (3 cr) or equivalent
7. Nonprofessional physical education courses (3 cr)

A student should plan carefully the Lower Division courses in his intended major which he can include in his pre-education work in the Arts College. He should see Section II of this bulletin and specific requirements in the *Bulletin of the College of Education* for courses to include in 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.

Application Procedures

1. Apply for admission to the College of Education at the "Transfer" window (room 6) in Morrill Hall *early* in the third quarter of the sophomore year. This allows sufficient time to schedule psychological tests and speech and health examinations prior to registration for the next quarter.
2. Complete the clearances as outlined on the 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.

214 / Preprofessional Curriculums

Requirements for Transfer to an Elementary or Nursery-Kindergarten-Primary Curriculum

1. 90 quarter credits with at least a 2.00 (C) grade point average to be considered for transfer
2. **Freshman English**
Comp 1-2-3 or Engl A-B-C or Comm 1-2-3 or Engl 10H-11H-12H or exemption
3. **Natural Science**
NSci 4-5-6 (or Geol 1 instead of 6) and Biol 1A-2A
(or) NSci 4-5 and Biol 1-2
(or) NSci 1-2-3
4. **Social Sciences**
Geog 1 or 4
Hist 23-24
Soc 1 and 3, or SSci 1-2-3
5. **Mathematics**
Math 5A and 5B
6. **Music, Art, and Speech**
Mus 4 (or exemption)
Art 1 or 2 or 3 or 4 or 47
Spch 5
7. **Psychology**
Psy 1-2
8. **Health and Physical Education**
PubH 5 or 50
Nonprofessional physical education courses (3 cr)
9. **Electives toward an academic minor**
Possible minors (30 cr) are listed under Elementary Education section in the *Bulletin of the College of Education*

Application Procedures

1. Apply for admission to the College of Education at the "Transfer" window (room 6) in Morrill Hall *early* in the third quarter of the sophomore year. This allows sufficient time to schedule psychological tests and speech and health examinations prior to registration for the next quarter.
2. Complete the clearances as outlined on the 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 the Degrees of Bachelor of Arts (from the College of Liberal Arts) and Bachelor of Science (from the 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. Little more than the normal 4 years for a Bachelor's degree may be needed if the student enters the program at the beginning of the junior year. For information on eligibility and the procedures for application, consult an Upper Division office or the College of Education (206 Burton Hall).

E. LAW SCHOOL

Requirements for Admission and for Degree in Law

The Law School offers the professional degree of bachelor of laws (LL.B.) 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 *Bulletin of the Law School*. 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.

F. 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.

G. COLLEGE OF MEDICAL SCIENCES

The principal curriculums 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 credits) 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

English: Engl A-B-C—Freshman Composition and Literature (15 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 A-B-C (15 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 in order 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. Appropriate introductory courses in these subjects are the following:

(Credits shown in parentheses)

Gen 66—Principles of Genetics (3)
Psy 1-2—General Psychology (6)

PCh 107-108—Physical Chemistry (6) (requires additional preparation in calculus for most premedical students)

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 *Bulletin of the Medical School* 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 (except Item F, Public Health) 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, and Section I, pages 11 to 13.) 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 trans-

fer 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.

The minimum quarter-credit requirement for the first year is 45 plus a current Red Cross First Aid Certificate for the standard course. These 45 credits must include:

Group A—Freshman English (1 academic year)

Group B or E—Foreign language or humanities (8) (credits for the literature portion of Freshman English courses may be used to fulfill this requirement)

Group C—Social science (8) (a course in cultural anthropology required††)

Group D—Natural science: GeCh 4-5; and NSci 3**

The remaining credit requirement must be fulfilled by course selections from any of those grouped as B, foreign language; C, social science; D, natural science; and E, humanities in the *Bulletin of the School of Nursing*. For a detailed description of these groupings refer to information about Plan B of the basic program in the *Bulletin of the School of Nursing*.

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 in nursing, see the *Bulletin of the School of Nursing*.

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 entire fourth year (12 months) is spent in clinical experience in the laboratories of the University Hospitals.

The following courses or their equivalents are prerequisites for admission to the junior year:

(Credits shown in parentheses)

Engl A-B-C—Freshman Composition and Literature (15) or Comp 1-2-3 (12) or	Comm 1-2-3 (12) or exemption from the requirement
---	---

** Students who transfer from another college may substitute 8 quarter credits of general chemistry for GeCh 4-5; 5 quarter credits of biology for NSci 3.

†† Students who have not taken cultural anthropology will need to complete this requirement through summer enrollment or through Extension Division by end of winter quarter, sophomore year.

222 / Preprofessional Curriculums

GeCh 4-5, 6—General Principles of Chemistry (14)
AnCh 57A-B—Quantitative Analysis (5)
OrCh 61-62—Elementary Organic Chemistry (10)
Biol 1-2—General Biology (10)
Zool 65—Histology (5)
Anat 4—Elementary Human Anatomy (5)
Math 10—College Algebra and Analytic Geometry (5)

Phys 2-3—Introduction to Physical Science (6)
MicB 53—General Microbiology (5)
MedT 10-11-12—Orientation in Medical Technology (3)
MedT 30-31-32—Case Presentations (3)
Electives—limited to those subjects that satisfy general education group requirements

The *Bulletin of the Division of Medical Technology*, 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 Building (telephone: 339-7311, extension 2601).

Advisers—All students in this course should consult advisers in the Medical Technology office, C-205 Mayo Building. Registration each quarter must be reviewed by one of these advisers.

4. 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 the fall quarter of the junior year, the 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.

To be eligible for admission to the junior year of the Course in Physical Therapy, a student must have completed all courses and credits in items 1 and 2:

(Credits shown in parentheses)

1. Freshman Composition—minimum of 9 quarter credits
2. Physical and Biological Sciences

General Biology (10)
Elementary Human Anatomy (5)
Human Physiology (4-5)

General Chemistry (10)
Physics (5-6)
Personal and Community Health (2-4)

3. In addition from the following categories, a total of 45 quarter credits with a minimum of 9 quarter credits in each category:

Man and Society

Psychology (9 qtr cr including
General Psychology required for
course in physical therapy)
Sociology
Social science
Anthropology
History
Political science
Economics

Communication, Language, and Symbolic Systems

Foreign language
Speech
Philosophy
Mathematics

Artistic Expression

Art
Humanities
Theatre arts
Literature

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 *Bulletin of the Department of Physical Medicine and Rehabilitation*.

5. 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 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 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.

The following courses or their equivalents are prerequisites for admission to the junior year:

(Credits shown in parentheses)

Engl A-B-C—Freshman Composition and Literature (15) or Comp 1-2-3 (12) or Comm 1-2-3 (12) or exemption from the requirement	PMed 1—Introduction to Occupational Therapy (1)
Biol 1-2—General Biology (10)	PMed 4—Orientation to Occupational Therapy (2)
Anat 4—Elementary Anatomy (5)	PMed 5—Therapeutic Recreation (2)
Psy 1-2—General Psychology (6)	PubH 3—Personal Health (2)
Soc 1—Man in Modern Society (3)	GC 7C—Physical Science: Elements of Chemistry (5)
Phsl 2—Human Physiology (4)	Ind 2—Wood Processing I (3)
Art 1—Principles of Art (5)	Ind 12—Handicrafts (3)
ArEd 53—Weaving (3)	Ind 15—Graphic Arts I (3)
CPsy 80—Child Psychology (3)	Clas 48—Technical Terms of Science (3)

In addition, students should elect courses to fulfill requirements for the following categories under the system developed by the Council on Liberal Education:

Communications, Language, Symbolic Systems (minimum of 9 cr)	Artistic Expression (minimum of 9 cr)
Foreign language	Art
Mathematics	Humanities
Philosophy	Literature
Speech	Theatre Arts
	Music

(Five of these credits may be taken during the senior year)

For more detailed information the student should consult a special adviser in the Occupational Therapy office, 860 Mayo Building (telephone: 339-7311, extension 2721). See *Bulletin of the Department of Physical Medicine and Rehabilitation*.

Advisers—All students in this course should consult a special adviser in the Occupational Therapy office and have their program reviewed each quarter. This applies to students who are still in the Arts College.

For detailed information about the individual subjects of the study in these curriculums (course numbers and titles, credits, prerequisites, etc.) see Section II of this bulletin.

H. 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)	Math 10—College Algebra and Analytic Geometry (5)
GeCh 6—Principles of Solution Chemistry (4)	Math T—Trigonometry (3)
	Comm 1-2-3—Communication (12)
	Electives (6 to 8)

Students enrolled in the Arts College for the prepharmacy year usually take, in addition to the above courses, PhmT 1A-1B-1C (3 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—Elementary Organic Chemistry (10)
Phys 1-2-3—Introduction to Physical Science (9)	Econ 1-2—Principles of Economics (6)
Phys 1A-2A-3A—Introduction to Physical Science Laboratory (3)	Electives (not less than 12)

The College of Pharmacy and the School of Business Administration offer an optional combined course requiring, in addition to the courses of the pharmacy curriculum, 55 additional credits in business administration and economics and leading to the degrees of bachelor of science in pharmacy (B.S. in Pharm.) and bachelor of science in business (B.S.B.).

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 over-all C average in courses taken while enrolled in the College of Pharmacy is required for graduation. In addition, all candidates for the degree of bachelor of science in pharmacy are required to pass a comprehensive examination covering the professional studies in the College of Pharmacy.

I. 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 *Bulletin of the Graduate School* and the special *Bulletin on Graduate Education for Public Administration*.

J. 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 *Bulletin of the Graduate School* and the special *Bulletin of the School of Social Work*.

Section IV

Prospective Graduation Requirements for B.A. Degree

These graduation requirements have been adopted by the faculty but their date of implementation has not yet been set. They are presented for the information of prospective students. The requirements will likely go into effect for entering freshmen in 1967 or 1968 and for entering transfer students 2 years later.

● 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 78) before registration for one of these courses.

● 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:

High School Study	Additional in College
4 years	5 credits in same language
3 years	10 credits in same language
2 years	15 credits in same language
1 year	20 credits in same language
None	25 credits in one language

Above table shows the usual relationship between high school and college study; placement in the college course usually is determined by examination.

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.

● Distribution

Complete 9 credits in each of six of the following areas, including work from at least one area from each of groups A, B, and D and from two areas from group C.

Group A: Communication, Language, Symbolic Systems

Area 1 Linguistics, rhetoric, logic, and philosophic analysis

Area 2 Mathematics, statistics

Group B: Physical and Biological Sciences

Area 1 Physical universe (with lab)

Area 2 Biological universe (with lab)

(If both of these areas are elected, only one need be with laboratory.)

Group C: Man and Society

Area 1 Analysis of human behavior

Area 2 Analysis of social, economic, and political institutions

Area 3 Development of civilization: historical and philosophical studies

Group D: Artistic Expression

Area 1 Literature

Area 2 The Arts

Notes:

1. Courses normally used to satisfy these requirements are designated by the faculty. More advanced courses may be used only with appropriate approval.
2. At least 3 credits must be offered from a department to count. No more than two departments may be used in each area. No more than 12 credits may be used from one department for all groups (even though courses from some departments may be used in more than one group).
3. Courses used for Freshman English and Foreign Language requirements may not be used for distribution requirements.

● **Upper Division**

Complete at least 75 Upper Division credits, of which at least 30 must be in courses outside the major department.

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 1966.

Names of major advisers in Arts College appear in italics.

Example: *Anwar Chejne*

Aerospace Studies

Chairman: Lt. Col. James Suttie
Capt. John J. Denice
Major John C. Gill
Capt. Dewey E. Johnson

Brooks Cavin
Robert Cerny
Roger Clemence
Carl Graffunder
Dennis Grebner
Alonzo Hauser
Thomas Hodne
Robert Hysell
Hosni Iskander
Peter Lee
Kay Lockhart
Roger Martin
Valerius Michelson
Richard Morrill
John Myers
Leonard Parker
Hugh Peacock
John Rauma
James Stageberg
Milo Thompson
Duane Thorbeck
Walter Vivrett
George Winteroud

American Studies

Chairman: Bernard Bowron
Assistant Chairman: *Mary C. Turpie*

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 the information on American Studies in the *Graduate Bulletin*.

Anatomy

Head: Arnold Lazarow

Anthropology

Chairman: E. Adamson Hoebel
Richard Adams
Donald Bender
Luther Gerlach
Elden Johnson
Robert Kiste
Frank Miller
Rupert Murrill
Ladislav Novak
Perti Peltó
Michael Salovesh
Harvey Sarles
Robert Spencer

Architecture

Head: Ralph Rapson
Bruce Abrahamson
Herbert Baldwin

Art History

Chairman: Carl D. Sheppard, Jr.
Norman Canedy
Sheila McNally
Marion Nelson
Robert Poor
Sidney Simon
Hylton Thomas
Donald Torbert
Dimitri Tselos
Melvin Waldfogel

Art Studio/see Studio Arts

Astronomy

Chairman: Willem J. Luyten
Karlis Kaufmanis

Adviser in College of Education

Willem J. Luyten

Biochemistry

Head: *L. M. Henderson*

D. R. Briggs
Stanley Dagley
J. E. Gander
R. L. Glass
Robert Jenness
S. Kirkwood
I. E. Liener
R. Lovrien
H. Schlenk
M. O. Schultze
H. R. Warner

Biology

Dean: *Richard S. Caldecott*

Ernst C. Abbe
V. Elving Anderson
Robert M. Benolken
Ann Bent
David R. Briggs
Alan J. Brook
Peter J. Chapman
Ralph E. Comstock
William Cunningham
Stanley Dagley
A. Orville Dahl
Frank Enfield
Albert W. Frenkel
John E. Gander
Robert L. Glass
Eville Gorham
John W. Hall
H. O. Halvorson
Lavell M. Henderson
Robert K. Herman
William S. Herman
Vivian S. Hiatt
Mary W. Hollinshead
Alan B. Hooper
Charles W. Huver
Robert Jenness
Norman S. Kerr
Samuel Kirkwood
Donald B. Lawrence
Irvin E. Liener
Rex E. Lovrien
Walter Lundberg
Peter V. Luykx
William H. Marshall
David J. Merrell
Thomas Morley
Magnus Olson
Gerald B. Ownbey
Douglas C. Pratt
Sheldon C. Reed
Norma M. Reiners
William Reiners
Robert P. Rhea
Murray D. Rosenberg
Hermann Schlenk
William D. Schmid
Otto H. Schmitt

Max O. Schultze
Donald P. Snustad
Leon A. Snyder
Thomas K. Soulen
Nelson T. Spratt
James C. Underhill
Jack Van't Hof
Houston R. Wade
Franklin G. Wallace
Dwain W. Warner
Huber R. Warner
Frederick M. Williams

Advisers in College of Education

Magnus Olson
Thomas K. Soulen

Botany

Chairman: Ernst C. Abbe
Alan J. Brook
William P. Cunningham
A. Orville Dahl
Albert W. Frenkel
Eville Gorham
John W. Hall
Donald B. Lawrence
Thomas Morley
Gerald B. Ownbey
Douglas C. Pratt
William A. Reiners
Thomas K. Soulen
Jack Van't Hof

Advisers in College of Education

Thomas K. Soulen
John W. Hall

Chemistry

Chairman: *Stuart W. Fenton*

Child Psychology

Director: *Harold W. Stevenson*
William R. Charlesworth
Paul C. Goldin
John H. Flacell
Willard W. Hartup
John P. Hill
Ann E. Jones
Sally J. Kilmer
Nancy C. Laubengayer
Carl P. Malmquist
Shirley G. Moore
Corinne H. Nirenstein
Herbert L. Pick, Jr.
Merrill F. Roff
Britton K. Ruebush
Mildred C. Templin
John C. Wright
Robert C. Wirt

Classics

Chairman: *Robert P. Sonkowsky*

Gerald M. Erickson
John Ferguson
Margaret M. Forbes
Alexander D. MacDonald
William A. McDonald
Sheila McNally
Viktor Pöschl
R. Joseph Schork
Donald C. Swanson
Hermann Weber

Adviser in College of Education

Margaret M. Forbes

Comparative Literature

Chairman: G. Robert Stange

East and South Asian Languages

Chairman: Edward M. Copeland

Ya-ku Chang
Vasant S. R. Khokle
Chun-jo Liu
Owen B. Loveless
Richard B. Mather
Amy T. Matsumoto
Paul W. Staneslow
Reiko Tsukimura
Stephen S. Wang

Economics

Chairman: O. H. Brownlee

Francis M. Boddy
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
Jacob Schmookler
Norman J. Simler
Harlan M. Smith

Hugo Sonnenschein
Morris F. D. Teubal
John G. Turnbull
Neil Wallace

Adviser in College of Education

Harlan M. Smith

English

Chairman: John W. Clark

Harold B. Allen
Eberhard Alsen
Bernard Bowron
Lonnie J. Durham
Jon L. Erickson
Charles H. Foster
Richard J. Foster
Edward M. Griffin
Clifford Haga
David B. Haley
J. Dennis Hurrell
Gerhard J. Joseph
Joseph Kwiat
J. C. Levenson
Charles S. Levy
Archibald I. Leyasmeyer
Raymond D. McClure
Toni A. McNaron
Samuel H. Monk
Franz Montgomery
Robert E. Moore
Gordon W. O'Brien
Arthur W. Plumstead
Peter J. Reed
Martin Roth
William A. Rosendahl
James L. Scoggins
G. Robert Stange
Martin Steinmann
Margery W. Stricker
Allen Tate
Mary C. Turpie
Leonard Unger
Sarah H. Youngblood

Adviser in College of Education

Rodger Kemp

Family Studies

Chairman: Gerhard Neubeck

Director of Family Study Center: *Reuben Hill*

Joan Aldous
Richard Hey
David Holland
Elnora Huyck
John Kokosh
Helen Ludwig
Katherine Randolph
David Torbett

Genetics

Head: Ralph E. Comstock
 V. Elving Anderson
 Franklin D. Enfield
 Robert K. Herman
 Vivian S. Hiatt
David J. Merrell
 Sheldon C. Reed
D. Peter Snustad
L. A. Snyder
 Houston R. Wade

Geography

Chairman: *John W. Webb*
Russell B. Adams
Ward J. Barrett
John R. Borcher
Jan O. M. Broek
Mei-Ling Hsu
 Robert C. Lucas
 Fred E. Lukermann
Eugene Cotton Mather
Philip W. Porter
John G. Rice
Joseph E. Schwartzberg
 John A. Wolter

Advisers in College of Education

Russell B. Adams
 Ward J. Barrett

Geology and Geophysics

Chairman: Tibor Zoltai
 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. Swain
 William C. Walton
 Paul W. Weiblen
Herbert E. Wright, Jr.

Adviser in College of Education

George R. Rapp, Jr.

German

Chairman: *Edwin F. Menze*
 Evelyn Coleman
 Erhard Friedrichsmeyer
 Frank Hirschbach
 Ida Kimber
Herman Ramras
 Anne Russell
 Donald Steinmetz
Wolfgang Taraba
 Andrew Török
 Harriet Viksna
 Gerhard Weiss
 John Whiton
 Cecil Wood
 Frank Wood

Advisers in College of Education

Edwin F. Menze
 Cecil Wood

History

Chairman: Robert S. Hoyt
 Associate Chairman: *W. Donald Beatty*
Josef L. Altholz
Paul W. Bamford
Robert F. Berkhofer
Hyman Berman
Kinley J. Brauer
Clarke A. Chambers
Harold C. Deutsch
George D. Green
John R. Howe
 Alfred H. Jones
Tom B. Jones
Philip D. Jordan
Erle V. Leichty
Rodney C. Loehr
Byron K. Marshall
James D. Muhly
John K. Munholland
Paul L. Murphy
David W. Noble
 Thomas S. Noonan
Otto P. Pfanze
 Richard L. Rudolph
Darrett B. Rutman
Timothy L. Smith
 Allan H. Spear
Theofanis G. Stavrou
Romeyn Taylor
 John A. Thayer
 James D. Tracy
David H. Willson
William E. Wright

Advisers in College of Education

Josef L. Altholz
 Robert F. Berkhofer
 Timothy L. Smith

Home Economics

Director: Louise A. Stedman
Suzanne Davison
Gertrude Esteros
Isabel Nobel
Robert Sirny

Interdisciplinary Programs

Communication Program

Chairman: Daniel V. Bryan
Sara C. Coiner
Marlene Cranney
John M. Elzey
Orley I. Holtan
Dale Huffington
J. Vernon Jensen
Sally A. McNail
Don E. Norton
Judith A. Robinson
Robert E. Tembeck

Foreign Study

For information contact T. G. Stavrou,
History Department.

Humanities Program

Chairman: Robert J. Ames
Eberhard Alsen
Eugene Atkin
Daniel Bryan
Fred Hallberg
Stephen Hult
Johanna Kheim
George Kliger
Joseph Kwiat
Lynn Loudon
Albert Milgrom
John Munholland
Mischa Penn
Marvin Powell
Herman Ramras
Clement Ramstrand
Robert Scott
John Smaby
Dana Sutton
Wolfgang Taraba
Robert Tembeck
Gaylord Todd
James Tracy
Joseph Waldauer
Hermann Weber
Frank Wood

Natural Science Program

Chairman: Mark Graubard
James A. Dahl
Russell K. Hobbie
Charles L. Matsch

Steven T. Spees
James H. Werntz

Personal Orientation

Program Chairman: John G. Darley

Social Science Program

Chairman: David Cooperman
Hyman Berman
Martin Dolan
Nikolai Tor Dahl
George Green
Paul Murphy
Mordecai Roshwald
Michael Salovesh
Allen Spear
Richard E. Sykes
Robert L. Utlaug

International Relations and Area Studies

Director: Burton M. Sapin
Assistant Director: Robert E. Riggs

General International Relations Major

Jan O. M. Broek
Edward Coen
Robert Holt
Walter W. Klein
Charles McLaughlin
John K. Munholland
Raymond Nixon
J. John Penikis
Robert E. Riggs
Harlan Smith
John E. Turner

Area Studies

West Europe
Scandinavia: *Alrik Gustafson*
British Isles: *Samuel H. Monk*
France: *Armand Renaud*
Germany: *Edwin F. Menze*
Russia and Eastern Europe
Theofanis G. Stavrou
East and South Asia
Romeyn Taylor
Latin America
W. Donald Beatty
Preparation for Foreign Service
Charles McLaughlin
Burton M. Sapin

In addition to these advisers, students may consult other advisers who are listed in the special bulletin, *Programs in International Relations and Area Studies*, or inquire in the Center for International Relations and Area Studies, 1246 Social Science Building.

Journalism and Mass Communication

Director: *Robert L. Jones*

James S. Barden
Roy E. Carter, Jr.
Mitchell V. Charnley
Edwin Emery
J. Edward Gerald
Donald M. Gillmor
George S. Hage
Virginia A. Harris
Robert Lindsay
Raymond B. Nixon
R. Smith Schuneman
John C. Sim
Phillip J. Tichenor
Harold W. Wilson

Adviser in College of Education

John C. Sim

Library School

Director: *D. K. Berninghausen*

Nancy J. Freeman
Edith V. Kromer
Errett W. McDiarmid
Luwell E. Olson
John Parker
Marie Samanisky
Raymond Shove
Wesley Simonton
Yvonne Van der Boom
Frederick Wezeman

Linguistics

Chairman: *Walter Lehn*

Mathematics

Head: *Steven Orey*

Associate Head: *David A. Storvick*

Alfred Aeppli
Loren E. Argabright
Donald G. Aronson
Kenneth R. Berg
Melvyn Berger
Lincoln Bragg
George U. Brauer
Robert M. Brooks
Robert H. Cameron
John R. Cannon
R. V. Chacon
Isaac Chavel
Edward Cline
Erwin Engeler
Paul C. Fife
Krzysztof Frankowski
Bert E. Fristedt

Gebhard Fuhrken
Harry Furstenberg
Lisl Gaal
Steven Gaal
Jesus Gil de Lamadrid
Henry H. Glover
Leon W. Green
Heinrich Guggenheimer
Karl Gustafson
Laurence R. Harper
William A. Harris, Jr.
Jack Indritz
Naresh Jain
Benton Jamison
Howard B. Jenkins
James T. Joichi
Richard K. Juberg
Charles S. Kahane
Donald Kahn
Gerhard Kalisch
G. Kallianpur
John Kelingos
Gordon Keller
George H. Knightly
Fulton Koehler
Jay A. Leavitt
Bernard W. Lindgren
Walter Littman
John Locker
Ottmar Loos
Warren S. Loud
Edward S. Loye
Morel Marcus
Albert Marden
Lawrence Markus
Charles A. McCarthy
Norman G. Meyers
Willard Miller, Jr.
Chester L. Miracle
William D. Munro
Johannes Nitsche
Peter V. O'Neil
Daniel Pedoe
Clifford Perry
William F. Pohl
Frank Polansky
Marian B. Pour-El
William E. Pruitt
Edgar Reich
Peter A. Rejto
J. Ian Richards
Nestor Riviere
Joseph Rosenstein
Arthur Sagle
Wayne Schmaedeke
George R. Sell
James Serrin
Yasutaka Sibuya
Robert Sine
John M. Slye
Lawrence Smolowitz
Donald R. Snow
Marvin L. Stein
Warren Stenberg
Charlotte Stribel
James E. Thompson
Hugh L. Turriffin
Chih-yi Wang

Hans F. Weinberger
Carroll O. Wilde

Advisers in College of Education

Heinrich Guggenheimer
James T. Joichi
Warren S. Loud
Chester L. Miracle
David A. Storvick

Microbiology

Head: Dennis W. Watson

Dwight L. Anderson
Robert W. Bernlohr
S. Gaylen Bradley
Gerhard K. Brand
Martin Dworkin
Robert A. Good
Wendell H. Hall
Alan B. Hooper
James J. Jezeski
Russell C. Johnson
A. G. Karlson
Yoon Berm Kim
Robert K. Lindorfer
Louis H. Muschel
Gerald Needham
Joseph C. Olson
Peter G. W. Plagemann
James T. Prince
Palmer Rogers
Edwin L. Schmidt
Henry M. Tsuchiya
John A. Ulrich
Lewis W. Wannamaker

Middle Eastern Languages

Chairman: *Anwar Chejne*
Jonathan S. Paradise
Hachemi Saada
Henry Toledano

Military Science

Chairman: Col. William D. Beard
Major Charles R. Chase
Capt. Kent E. Harrison
Capt. James F. Iaconis

Music

Chairman: Roy A. Schuessler
Rhadames Angelucci
Dominick Argento
Martin Beckerman
Frank Bencriscutto
Paul Binstock
Stephen Chenette
Marvin Dahlgren

Paul Fetter
Elliott Fine
Ray Fitch
Heinrich Fleischer
Paul Freed
Irving Godt
Daniel Goode
Carl Hane
Robert Jamieson
Paul Knowles
Robert Laudon
Mary Malcolm
Lawrence Malmberg
Duncan McNab
Joseph McSpadden
Frances Miller
Emil Niosi
Paul Oberg
Marcella Oja
Emil Opava
Gerald Prescott
Johannes Riedel
John Sambuco
Charles Schwartz
Richard Sieber
Daniel Tetzlaff
Paul Walton
Lawrence Weinman
Bernhard Weiser
J. Cloyde Williams
Steven Zellmer

Naval Science

Head: Capt. J. M. Marshall, USN
Lt. J.G. Steven R. Clossen, USN
Cdr. Edward O. Dietrich, USN
LCdr. Leon L. Pierce, USN
Lt. Kenneth M. Royalty, USN
Major James D. Shubert, USMC
Lt. Donald E. Taylor, USN
LCdr. Clifford H. Totten, USN

Northwest European Language and Area Studies

Director: Arik Gustafson

Philosophy

Chairman: Karl H. Potter
May Brodbeck
S. Marc Cohen
Herbert Feigl
William H. Hanson
Douglas Lewis
Homer E. Mason
Gareth B. Matthews
Grover Maxwell
Jeffrie G. Murphy

Francis V. Raab
Ralph Ross
D. Burnham Terrell

Physical Education for Men

Chairman: Deane E. Richardson

Physical Education for Women

Chairman: Eloise M. Jaeger

Physics

Head: Morton Hamermesh
Associate Head: J. Morris Blair
Benjamin F. Bayman
Mark Bolsterli
Ronald E. Brown
Warren B. Cheston
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
Paul J. Kellogg
John Lilley
Homer T. Mantis
Michael Moldover
Alfred O. C. Nier
Edward P. Ney
Lewis H. Nosanow
Robert Pepin
Carl H. Poppe
Peter G. Roll
Keith Ruddick
Hiroschi Suura
Yau-Chien Tang
Frank Verbrugge
Cecil J. Waddington
Clifford N. Wall
William R. Webber
James H. Wernitz
Walter V. Wehmann
John R. Winckler
William Zimmermann

Adviser in College of Education

George D. Freier

Physiology

Chairman: Maurice B. Visscher
Marvin B. Bacaner
James S. Beck
H. Mead Cavert
Charles Edwards
Irwin J. Fox
Eugene Grim
Rodney B. Harvey
John A. Johnson
J. S. Lee
Nathan Lifson
Victor Lorber
Carlos Martinez
Richard Purple
Carlo Terzuolo

Political Science

Chairman: Francis J. Sorauf
Charles H. Backstrom
Richard N. Blue
Harold W. Chase
Eugene Eidenberg
William H. Flanigan
Edwin Fogelman
Robert S. Gerstein
Robert T. Holt
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

Psychology

Chairman: John G. Darley
Ralph F. Berdie
James G. Boulger
James N. Butcher
John P. Campbell
Marvin D. Dunnette
George W. England
Paul W. Fox
Norman Garmezey
Irving I. Gottesman
A. Jack Hafner
Starke R. Hathaway
Gordon T. Heistad
Vivian H. Hewer
James J. Jenkins
David L. LaBerge
Lloyd H. Lofquist
Howard P. Longstaff

David T. Lykken
Kenneth MacCorquodale
Paul E. Meehl
Norman Miller
J. Bruce Overmier
Robert E. Phillips
Herbert Pick
Warren W. Roberts
Wallace A. Russell
William Schofield
Auke Tellegen
Travis I. Thompson
Milton A. Trapold
Robert G. Warnken
Karl E. Weick, Jr.
Robert D. Wirt
John I. Yellott, Jr.

Public Administration

Chairman: George A. Warp

Public Health—Biostatistics

Chairman: Gaylord W. Anderson

Adviser for Biostatistics

Byron W. Brown

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. Narvóez

Slavic and East European Languages

Wassilij Alexeev

Sociology

Arthur L. Johnson

Speech and Theatre Arts

Ernest G. Bormann

Rhetoric

Chairman: R. G. Nichols

Romance Languages

Chairman: Walter T. Pattison

Carlota Brack
Yvonne Bretoi
Santiago A. Cúneo
Cecilia deGregory
James Dunlop
John E. Fadell
Rodolfo O. Floripe
Claude Francis
Richard Franklin
Russell G. Hamilton, Jr.
Barry T. Hughes
Tobin H. Jones

Peter W. Lock
 Lawrence C. Mantini
 Richard A. Narváez
 Arshi Pipa
 Armand A. Renaud
 Blandine M. Rickert
 Peter Robinson
 Robert S. Rudder
Dorothy Rundorff
 Mireille Rydell
 Livia Seim
 Arturo Serrano-Plaja
 Sibylle Sinval
 Constance Sullivan
 Gaylord Todd
Joseph P. Waldauer

Advisers in College of Education

French: Lawrence C. Mantini
 Portuguese: Russell G. Hamilton, Jr.
 Spanish: Rodolfo O. Floripe

Scandinavian

Chairman: Alrik Gustafson

Nils Hasselmo
 Marion John Nelson
 Stewart P. Oakley
 Lillemor Saether
 Johanna Saesvuo
James Allen Simpson

Slavic and East European Languages

Acting Chairman: *Adele K. Donchenko*

Wassilij Alexeev
Tatiana Prokopov
Marilyn J. Sjoberg

Adviser in College of Education

Adele K. Donchenko

Social Work

Director: John C. Kidneigh

Miriam Cohn
 Beulah Compton
 Edward Francel
 Susan Goldman
 Joann Gannon
 James Goodman
 Dolph Hess
 C. V. Hinn
 Dagny Johnson
 Franz Kamps
 Gisela Konopka
 Lawrence Merl
 Eugene Milstone
 Mayo K. Newhouse

Anne W. Oren
 Joyce Peltzer
 Alvin Rackner
 Ida Rapoport
 H. Etta Saloshin
 Lyndell Scott
 Annalee Stewart
 Thomas H. Walz
 Dorothy Whitmore
 Helen Yesner

Sociology

Chairman: *Elio D. Monachesi*

Joan Aldous
William S. Bennett
Nancy L. Carlson
 George A. Donohue
 Bertram L. Ellenbogen
 Harold Finestone
 Robert E. Franz
 Robert L. Fulton
Walter M. Gerson
Edward Gross
Teresa Haubenhofner
 William P. Hawkinson
Reuben L. Hill
Arthur L. Johnson
Barbara Knudson
Don A. Martindale
Scott G. McNall
Joel I. Nelson
 Charles E. Ramsey
Arnold M. Rose (on leave)
Gregory P. Stone
Murray A. Straus
Irving Tallman
 David A. Ward
William L. Zwermer

Advisers in College of Education

Reuben L. Hill
 Arthur L. Johnson
 Murray A. Straus

Departmental Faculty Representative to Honors Council

Walter Gerson

Speech, Communication, and Theatre Arts

Chairman: Kenneth L. Graham

Associate Chairman: *William S. Howell*

Harvey L. Adey
Arthur H. Ballet
 H. Wesley Balk
Leonard Bart
 Robert Baruch
Ernest Bormann
Bernard L. Brock

Donald R. Browne
 Paul Cashman
Joseph Chaiklin
 Ivan Dusek
 Lauren Ekroth
 Roger Erickson
 B. Aubrey Fisher
 Virginia Fredricks
 Judith Gaines
 Sheldon Goldstein
 Frederick Greenberg
 Sir Tyrone Guthrie
 Brian Hansen
Ernest Henrikson
 Theodore Herstand
 Richard Hoel
 Gordon Howard
J. Vernon Jensen
Wendell J. Josal
Maxine Klein
Frank Lassman
 Gertrude Lippincott
 Merle Loppnow
 K. Scott McCoy
Richard McDermott
 Richard Martin
Robert Moulton
 Ralph Nichols
 Charles Nolte
 Gene L. Piché
 Robert Reynolds
 Hertha Schulze
Robert L. Scott
George L. Shapiro
Gerald Stegel
 David Smith
 Donald K. Smith
Robert Sonkowsky
 Clark Starr
 Mildred Templin
David W. Thompson
 Dixon Ward
Ronald Wendahl
Frank M. Whiting
 Donald Z. Woods
 E. W. Ziebarth

Advisers in College of Education

Lee Adey
 Arthur Ballet
 Bernard Brock
 Virginia Fredricks
 Kenneth L. Graham
 Richard McDermott
 Gene L. Piché
 Clark Starr

Statistics

Chairman: *Bernard W. Lindgren*
 Jacob E. Bearman
 Byron W. Brown
 Oswald H. Brownlee
Robert J. Buehler

John S. Chipman
 Raymond Collier
 Ralph E. Comstock
 Delbert Hastings
 Leonid Hurwicz
 Benton Jamison
 Gopinath Kallianpur
 Elmer W. Learn
 Gayle W. McElrath
 Richard B. McHugh
 John Neter
 Hiroshi Oodiara
 Steven Orey
 William E. Pruitt
 Edgar Reich
 Merrill F. Roff
 Harold Ruben
 James Sentz
 Robert N. Shoffner
 Milton Sobel
 Charlotte Stribel
 Horace L. Thomas

Studio Arts

Chairman: *Malcolm H. Myers*

Peter Busa
 F. H. Chaffey
Allen Downs
 Milton Howard
Jerome Liebking
Warren MacKenzie
Katherine Nash
 Zigmunds Priede
Walter Quirt
Herman Rowan
 Mario Volpe

**Theological Training,
 Preparation for**

Director: William A. McDonald

Robert S. Hoyt
Joseph Kwiat
Homer E. Mason
Richard Mather
Gareth Matthews
Timothy Smith

Zoology

Chairman: Magnus Olson

Robert M. Benolken
 William S. Herman
Alan B. Hooper
Charles W. Huver
Norman S. Kerr
Peter V. Luykx
 William H. Marshall
 Robert P. Rhea

Murray D. Rosenberg
William D. Schmid
Otto H. Schmitt
Nelson T. Spratt
James C. Underhill
Franklin G. Wallace

Dwain W. Warner
Frederick M. Williams

Adviser in College of Education

Magnus Olson

PREPROFESSIONAL CURRICULUMS IN COLLEGE OF LIBERAL ARTS

Medical Technology

Director: Ruth F. Hovde

Sandra J. Benson
Karen J. Bisset
Donna J. Blazevic
Patricia H. Bordewich
Kathleen J. Clayson
Esther F. Freier
Lorraine M. Gonyea
Mary J. Klun
Elizabeth S. Lundgren
Barbara R. Merritt

Verna L. Rausch
E. Anne Stiene

Physical Medicine and Rehabilitation, Course in Physical Therapy

Director: Wilbur L. Moen

John D. Allison
Martin O. Mundale
James F. Pohilla
Helen V. Skowlund
Henry C. Wessman

Index

Page		Page	
A			
25	Abbreviations and Symbols	56	Child Psychology
21	Absences, Excuses	64	Chinese
50	Accounting (Business Administration)	21	Class Attendance
15	Additional Courses	15	Class Attendance Until Cancellation
1	Administrative Officers	4	Class Reservations Office
7	Admission Requirements	57	Classics Department
22	Adult Special Students	62	Courses
10	Advanced Standing Students	19	Classification of Students
111	Advertising Journalism	4	College Offices
19	Adviser for Foreign Students	6	College Organization
17	Advisers for Students	12	Combined Arts and Professional Courses
26	Aerospace Studies	12	Combined Degree Program
28	American Studies		Communication
15	Amount of Course Work	101	Interdisciplinary Programs
29	Anatomy	109	Journalism
29	Anthropology	191	Speech
11	Approval of Upper Division Program	64	Comparative Literature
130	Arabic	78	Composition
131	Aramaic	18	Conduct Committee
33	Architecture	23	Correspondence Study
206	Combined Degree Program	17	Counselors for Students
34	Art	25	Courses
36	History	15	Additions
40	Studio	16	Auditing
206	Arts and Professional Courses, Combined	15	Cancellation
10	Associate in Liberal Arts Degree	15	General Extension Division
42	Astronomy	16	Graduate School
21	Attendance, Class	16	Honors Sections
15	Attendance Until Cancellation	25	Lower Division
196	Audiology	25	Numbering
16	Audited Courses	15	Other Colleges
23	Awards	17	Prerequisites
B			
11	Bachelor of Arts Programs	14	Registration
128	Bacteriology (Microbiology)	16	Repetition
43	Biochemistry	14	University College
44	Biology	25	Upper Division
167	Biostatistics-Public Health	16	Without Credit
1	Board of Regents	20	Credits
45	Botany	15	Credit Load, Maximum and Minimum
182	Bulgarian	20	Explanation
19	Bureau of Student Loans and Scholarships	10	Required
19	Bureau of Veterans Affairs	11	Residence
50	Business Administration	26	Listing
207	Prebusiness Programs	D	
207	School of	180	Danish
C			
17	Cancellation from College	193	Debate, Speech
15	Cancellation from Courses	13	Degree Requirements
15	Change of Registration	10	Associate in Liberal Arts
51	Chemistry	11	Bachelor of Arts
			Bachelor of Science (see under departments)
		226	Future
		13	Present
		211	Dental Hygienist, Degrees

Page

- 209 Dentistry
 210 Arts
 210 Combined Degree Program
 209 Pre dental Program
 2 Departmental Chairmen, Heads,
 Directors, Offices
 12 Departmental Major and Minor
 Distribution Requirements
 226 Future
 7 Present
 17 Dropping from College

E

- 64 East and South Asian Languages
 182 East European Languages
 68 Economics
 111 Editorial Journalism
 211 Education, College of
 212 Combined Degree Program
 212 Preprofessional Requirements
 73 Educational Psychology Courses
 171 Efficient Reading, Rhetoric
 18 Employment Office, Student
 74 English
 78 Classification
 78 Exemption from Requirement
 78 Freshman English, Composition
 78 Preparatory
 12 Proficiency Test
 205 Entomology
 23 Evening Classes
 22 Examinations
 22 Credit
 22 Demonstrating Proficiency in Pre-
 requisite Courses
 7 Entrance
 22 Final
 22 Final, Makeup of
 21 Exclusion from College
 19 Exemption from Regulations
 15 Extension Credit Transfer
 23 Extension Division

F

- 228 Faculty
 17 Faculty Advisers for Students
 228 List of
 20 Failures, Rules Governing
 79 Family Studies
 Fees and Expenses (see *Bulletin of
 General Information*)
 14 Late Registration
 Tuition (see *Bulletin of General
 Information*)
 22 Final Examination Schedule
 34 Fine Arts
 180 Finnish
 19 Foreign Student Adviser
 102 Foreign Study
 171 French
 19 Freshman Classification
 78 Freshman English; Composition

Page

G

- 23 General Extension Division
 Courses
 5 General Information
 80 Genetics
 81 Geography
 85 Geology and Geophysics
 89 German
 5 Goals of Arts College
 20 Grade Point Average
 20 Grade Points
 20 Grades
 16 Graduate School Credit
 13 Graduation with Honors
 Graduation Requirements
 226 Future
 13 Present
 112 Graphic Arts, Journalism
 58 Greek

H

- 19 Health Service
 131 Hebrew
 16 High School Courses, Repetition
 65 Hindi
 92 History
 99 Home Economics
 13 Honors Programs
 16 Honors Sections
 7 Honors Student Council
 14 How to Register
 19 How to Study, Clinic
 105 How to Study Course
 102 Humanities

I

- 20 Incompletes
 65 Indian
 12 Interdepartmental Major
 101 Interdisciplinary Programs
 7 Intermediary Board
 106 International Relations and Area
 Studies
 174 Italian

JKL

- 67 Japanese
 109 Journalism and Mass Communication,
 School of
 19 Junior, Classification
 14 Late Fee
 60 Latin
 215 Law
 215 Combined Degree Program
 215 Courses in Arts and
 215 Prelaw Course
 19 Legal Aid Clinic
 7 Liberal Arts Intermediary Board
 11 Liberal Arts Major
 117 Library School

Page	
118	Linguistics
26	Listing Credits
19	Loans
7	Lower Division
17	Advisers
25	Course Numbering
226	Distribution Requirements, Future
8	Distribution Requirements, Present
13	Honors
4	Offices
7	Programs for Entering Upper Division

M

182	Macedonian
112	Magazine Journalism
17	Major Advisers
228	List of
10	Major, Prerequisites for
	Major Sequence
11	Upper Division
12	Modification
79	Marriage
109	Mass Communication
121	Mathematics
15	Maximum Credit Load
215	Medical Sciences
215	College of
219	Combined Degree Program
220	Graduate Program
221	Medical Technology
215	Medicine
216	Premedical Course
128	Microbiology
130	Middle Eastern Languages
132	Military Science
15	Minimum Credit Load
12	Minor Sequence
37	Motion Pictures, Art
134	Music
137	Applied
142	Education

NO

104	Natural Science
143	Naval Science
111	News, Journalism
144	Northwest European Language and Area Studies
180	Norwegian
220	Nursing
223	Occupational Therapy
24	Official Daily Bulletin
191	Oral Interpretation
6	Organization of College
67	Oriental
18	Orientation Programs
15	Other Colleges

PQ

196	Pathology, Speech
105	Personal Orientation

Page	
19	Personnel Services
17	Arts College Faculty Advisers
228	List of
18	Petitions
224	Pharmacy
145	Philosophy
40	Photography, Art
112	Photojournalism
	Physical Education
148	Men
149	Women
222	Physical Therapy
151	Physics
155	Physiology
18	Placement Services
45	Plant Physiology (see also <i>Bulletin of Agriculture and Forestry</i>)
182	Polish
156	Political Science
176	Portuguese
207	Prebusiness Course
209	Pre dental Course
215	Prelaw Course
216	Premedical Course
78	Preparatory English Composition
224	Prepharmacy Course
206	Preprofessional Curriculums
17	Prerequisites for Courses
10	Prerequisites for Major
15	Privilege Fees
21	Probation
226	Prospective Graduation Requirements
163	Psychology
191	Public Address
167	Public Administration
224	Preprofessional
167	Public Health-Biostatistics
112	Public Relations
5	Purpose of College

R

112	Radio-Journalism
191	Radio-Speech Major
168	Radio and Television
112	Journalism
191	Speech
171	Reading, Efficient
19	Reading Clinic
20	Readmission to College
1	Regents
14	Registration Procedures
15	Changes
14	Dates
14	Late Fee
19	Regulations, Arts College
19	Regulations, Exemption Petitions
169	Religious Studies
16	Repetition, College Courses
16	Repetition, High School Courses
11	Residence Requirement
171	Rhetoric
171	Romance Languages
171	Romanic
183	Russian

Page

S

	Sanskrit
64	Classics
68	East and South Asian Languages
20	Satisfactory Progress
179	Scandinavian
19	Scholarship, Application
20	Scholarship Average
23	Scholarships Available
18	Scholastic Committee
20	Scholastic Probation
50	Secretarial Training
16	Senior, Classification
184	Serbo-Croatian
182	Slavic and East European Languages
184	Slovenian
105	Social Science
225	Social Work, School of
184	Social Work Courses
185	Sociology
19	Sophomore, Classification
176	Spanish
22	Special Students
19	Speech Clinic
191	Speech, Communication, and Theatre Arts
193	Speech
196	Speech Science, Pathology, and Audiology
198	Theatre Arts
200	Statistics
19	Student Activities Bureau
18	Student Conduct Committee
19	Student Counseling Bureau
19	Student Employment Office
19	Student Housing Bureau
7	Student Intermediary Board
17	Student Personnel Services
18	Student Scholastic Committee
40	Studio Arts
19	Study Skills Clinic

Page

15	Subjects in Other Colleges
18	Swedish
26	Symbols

T

168	Television
112	Television-Journalism
191	Television Speech Major
68	Thai
198	Theatre Arts
201	Theological Training, Preparation
68	Tibetan
10	Transfer Students
	Tuition (see also <i>Bulletin of General Information</i>)
50	Typing

UVW

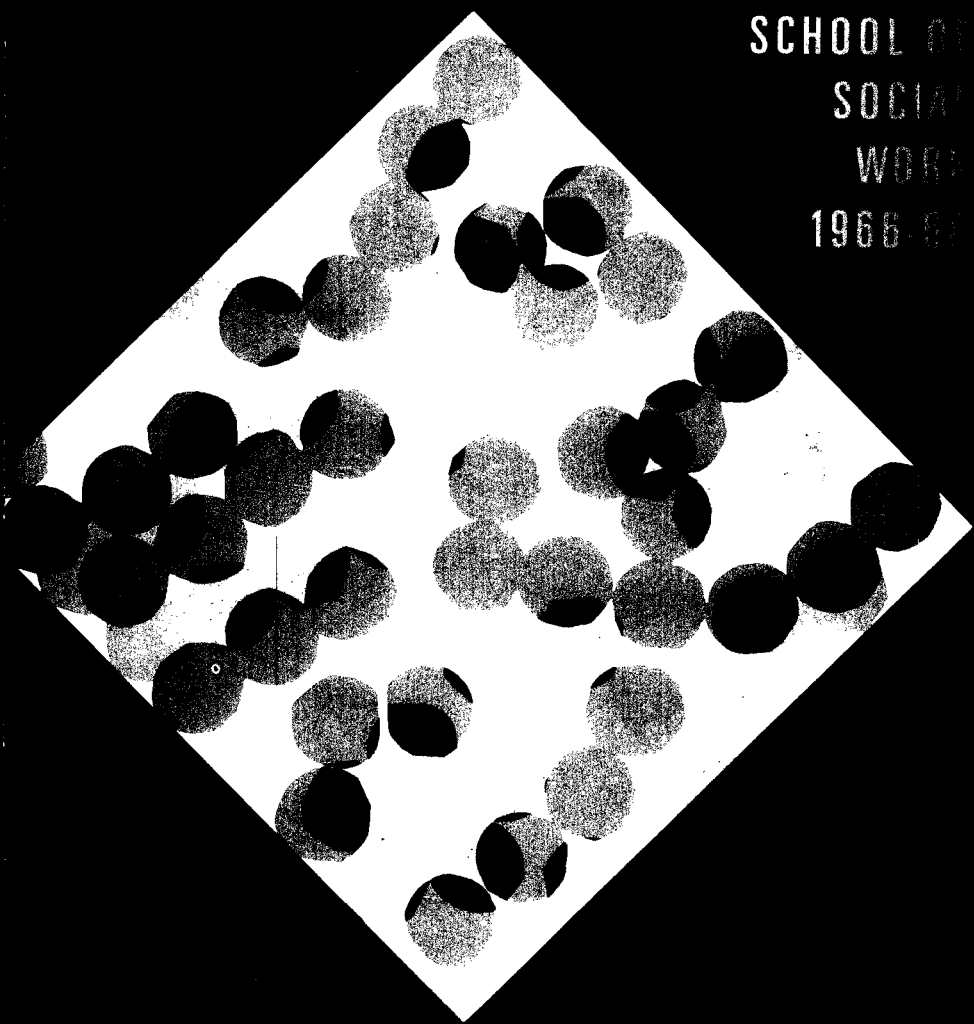
14	University College
19	University Health Service
6	Upper Division
10	Admission Requirements (also see under specific departments)
10	Application for Entrance
25	Course Numbering
18	Major Advisers
228	List of
11	Major Sequence
4	Offices
11	Program Approval
11	Programs for B.A. Degree
12	Requirements
11	Residence Credits
19	Veterans (also see <i>Bulletin of General Information</i>)

XYZ

202	Zoology
-----	---------

UNIVERSITY OF MINNESOTA BULLETIN

SCHOOL OF
SOCIAL
WORK
1966-67



UNIVERSITY OF MINNESOTA

Board of Regents

The Honorable Charles W. Mayo, M.D., Rochester, First Vice President and Chairman; The Honorable Marjorie J. Howard (Mrs. C. Edward), Excelsior, Second Vice President; The Honorable Daniel C. Gainey, Owatonna; The Honorable Bjarne E. Grottum, Jackson; The Honorable Albert V. Hartl, Fergus Falls; The Honorable Robert E. Hess, White Bear Lake; The Honorable Fred J. Hughes, St. Cloud; The Honorable Lester A. Malkerson, Minneapolis; The Honorable William K. Montague, Duluth; The Honorable George W. Rauenhorst, Olivia; The Honorable Otto A. Silha, Minneapolis; The Honorable Herman F. Skyberg, Fisher.

Administrative Officers

O. Meredith Wilson, Ph.D., President
William G. Shepherd, Ph.D., Vice President, Academic Administration
Laurence R. Lunden, B.A., Vice President, Business Administration
Stanley J. Wenberg, M.A., Vice President for Educational Relationships and Development
Bryce L. Crawford, Jr., Ph.D., Dean of the Graduate School
E. W. Ziebarth, Ph.D., Dean of the College of Liberal Arts

SCHOOL OF SOCIAL WORK

(909 Social Science Building)

Administration

John C. Kidneigh, M.A., A.C.S.W., Director of the School of Social Work

Instructional Staff

Annie Laurie Baker, M.A., A.C.S.W., Professor of Social Work and Director of Social Services, University Hospitals
Edward W. Francel, Ph.D., A.C.S.W., Professor of Social Work
John C. Kidneigh, M.A., A.C.S.W., Professor of Social Work
Gisela Konopka, D.S.W., A.C.S.W., Professor of Social Work
Anne Winslow Oren, Ph.D., A.C.S.W., Professor of Social Work
H. Etta Saloshin, Ph.D., A.C.S.W., Professor of Social Work
Lyndell Scott, Ph.D., A.C.S.W., Professor of Social Work
Dorothy A. Whitmore, M.A., A.C.S.W., Professor of Social Work
Werner Simon, M.D., Clinical Professor of Psychiatry

Volume LXIX

Number 6

March 15, 1966

UNIVERSITY OF MINNESOTA BULLETIN

Published semimonthly January 1 to December 15 inclusive. Second-class postage paid at Minneapolis, Minnesota. Send change of address notices and other communications to Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

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

Miriam Cohn, M.S.S.A., A.C.S.W., Associate Professor of Social Work
 Beulah R. Compton, M.A.S.W., A.C.S.W., Associate Professor of Social Work
 Mayo K. Newhouse, M.S.W., A.C.S.W., Associate Professor of Social Work
 Helen Yesner, M.S.W., A.C.S.W., Associate Professor of Social Work
 A. Boyd Thomes, M.D., Clinical Associate Professor of Internal Medicine
 Dagny Johnson, M.S.W., A.C.S.W., Assistant Professor of Social Work
 Franz X. Kamps, M.S.W., A.C.S.W., Assistant Professor of Social Work
 Lawrence Merl, M.S.W., A.C.S.W., Assistant Professor of Social Work
 Eugene Milstone, M.S.W., Assistant Professor of Social Work
 Ida Rapoport, M.S.W., A.C.S.W., Assistant Professor of Social Work
 Frances Skinner, M.S.W., A.C.S.W., Assistant Professor of Sociology, Duluth Campus
 Susan Goldman, M.S.S.A., A.C.S.W., Lecturer in Social Work
 James Goodman, M.S.W., A.C.S.W., Lecturer in Social Work
 Dolph Hess, M.S.W., A.C.S.W., Lecturer in Social Work
 Thomas Walz, M.S.W., A.C.S.W., Lecturer in Social Work
 Daniel Wiener, Ph.D., Lecturer in Clinical Psychology
 Joann Gannon, M.S.W., A.C.S.W., Instructor in Social Work
 Charlotte V. Hinn, M.S.W., A.C.S.W., Instructor in Social Work
 Joyce Peltzer, M.S.W., A.C.S.W., Instructor in Social Work
 Alvin Rackner, M.S.W., A.C.S.W., Instructor in Social Work
 Annalee Stewart, M.S.W., A.C.S.W., Instructor in Social Work

Field Work Agencies

Anoka State Hospital	Kenny Rehabilitation Institute
Amherst Wilder Child Guidance Clinic	Loring-Nicollet Center
Big Sisters Association	Lutheran Social Service
Capitol Community Center	Merrick Community Center
Children's Service, Inc.	Minneapolis Public Schools
Council House for Senior Citizens	Minneapolis Rehabilitation Center
Edward F. Waite Center	Minnesota Department of Corrections
Family and Children's Service (Minneapolis)	Minnesota Department of Public Welfare
Family Service, Inc. (St. Paul)	Northeast Neighborhood House
Hamm Foundation Clinic	Pillsbury Citizens Services
Hennepin County Court Services	Ramsey County Welfare Board
Hennepin County General Hospital	Robbinsdale Public Schools
Hennepin County Mental Health Center	St. Paul Board of Education
Hennepin County Welfare Board	University of Minnesota Hospitals
Home of the Good Shepherd	Urban League
Jewish Community Center of Minneapolis	Veterans Administration Hospital
Jewish Community Center (St. Paul)	Veterans Administration Regional Center
Jewish Family and Children's Service (Minneapolis)	Washburn Memorial Clinic
Jewish Family Service (St. Paul)	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.

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 pre-social work level, (b) the graduate professional level consisting of 2 years of study, research, and field work leading to the basic professional degree of master of social work, and (c) the advanced program of study and research leading to the Ph.D. degree.

Undergraduate Curriculum

The following 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.

The student wishing to select the pre-social work major qualifies for entry into it by completing Lower Division requirements in the College of Liberal Arts. The requirements for admission to the Upper Division (within which the pre-social work major is located) are given under the heading "Lower Division Programs for entering the Upper Division" in the *Bulletin of the College of Liberal Arts*. The specific subject requirements are set forth in that bulletin and must include the following courses in the 2 years' work:

(Credits shown in parentheses)

Required

Soc 1 and 3—Introduction to Sociology (6)	Anth 2A—Introduction to Anthropology (2)
Soc 45—Social Statistics (5)	(with option to substitute Anth 100)
Pol 1-2 or 5—American Government and Politics (6 or 5)	Econ B-C—Scope, Methods, and Application of Economics (6) (with option to substitute Econ 50A-B)
Psy 1-2—General Psychology (6)	

Pre-Social Work Major

The pre-social work major is offered in the Upper Division of the College of Liberal Arts and is subject to requirements for the degree of bachelor of arts which are given under the heading "Requirements of the Upper Division" in the *Bulletin of the College of Liberal Arts* except that the requirement of a major sequence and one or two minors are replaced by the pre-social work major outlined below. It is an interdepartmental sequence leading to the bachelor of arts degree in sociology, providing a liberal education including information about social welfare and a wide range of knowledge in the social and behavioral sciences and the humanities. It is focused on pertinent issues in social welfare, including a description of some aspects of social work practice, and that body of social scientific and humanistic knowledge which broadens and deepens the student's understanding of the individual in a socially responsible society. The pre-social work major is designed to: (a) prepare the student for graduate professional education in social work, (b) prepare the student to qualify for some social welfare positions for which full professional education is not required (but a B.A. degree is required), and (c) provide sufficient knowledge about social welfare programs and social work activities so that the student is able to think critically about problems, issues, and approaches to social welfare in his community.

The Upper Division requirements of the pre-social work major are outlined below:

Anth 165—Culture and Personality (3)	Soc 141—The Family (3)
(or) Soc 120—Social Psychology (3)	(or) Soc 126—Family Development (4)
CD 80—Child Psychology (3)	One of the following:
CD 81—Adolescent Psychology (3)	Pol 161—Problems of Democracy (3)
Psy 144-145—Abnormal Psychology (6)	Pol 162—Recent Political Thought (3)
Soc 53—Elements of Criminology (3)	Soc 170—Analytical Social Theory (3)
Soc 90—American Social Welfare (5)	Soc 171—Social Life and Cultural Change (3)
Soc 91—Introduction to Social Work Process (3)	Soc 172—Backgrounds of Modern Social Thought (3)
Hum 54—Humanities in the Modern World (or 6 Upper Division credits in the humanities, approved by adviser) (5)	One of the following:
PA 124—Government and Social Welfare (3)	Soc 118—Delinquent Behavior (3)
(or) Soc 103—Law and the Legal System for Correctional and Social Workers (3)	Soc 152—Sociology of Medicine and Medical Institutions (3)
	Soc 112—World Population Problems (3)

Two of the following:

- Soc 144—Social Stratification and Mobility (3)
- Soc 123—Minority Group Relations (3)
- Soc 140—Social Organization (3)

- Soc 145—Urban Sociology (3)
- Soc 146—Industrial and Occupational Sociology (3)
- Soc 162—Rural Social Institutions (3)

Satisfactory completion of 4 years' work of this curriculum leads to the degree of bachelor of arts.

Details regarding the undergraduate course will be found in the *Bulletin of the College of Liberal Arts*.

Professional Social Work Study

Professional social work study is carried on in the School of Social Work at the graduate level. The student must be eligible for admission to the Graduate School of the University of Minnesota.

Master of Social Work Program

The course of study which leads to the degree of master of social work has as its purpose the following:

Social work is a profession which, together with other professions, contributes to the social, psychological, and physical growth and well-being of individuals, groups, and communities. Social work education is education for the profession, that is, education for practice in a defined area of service. By virtue of its professional nature, social work education purposefully aims at developing in the student a conscious philosophy and a set of attitudes, and aims at imparting a body of knowledge and a set of identifiable skills, which are based on scientific method and are basic and distinctive to the social work profession. The following are basic to social work practice:

1. A substantial body of knowledge about:
 - a. Human behavior in dynamic interaction with the physical environment, the social and political structure of society, as well as human behavior involving interpersonal relationships and individual capacities, needs, and aspirations.
 - b. Social policy, especially those parts of it from which social welfare programs and social work services derive.
 - c. Social work methods of practice.
2. Some degree of competence in:
 - a. The use of social work methods to help persons, individually or in groups, to utilize better their own powers or social opportunities to the end of solving social difficulties, to realize better their potentials for effective community living or to protect persons who lack the power to make constructive use of their social situations.
 - b. The use of scientific method and skills in participating in and interpretation of social work research.
 - c. Participating in community organization process which equates welfare services to community needs.

TYPICAL PROGRAMS OF STUDY FOR MSW PROGRAM

First Graduate Year

Fall Term

SW 210—Field Instruction in Social Work (3)
SW 225—Social Policy and Programs I (4)
SW 248A-B—Concepts of Human Growth and Behavior in Social Work Practice I (3-2)
SW 265—Social Casework I (3)
(or) SW 275—Social Group Work I (3)

Winter Term

SW 211—Field Instruction in Social Work (4)
SW 226-227—Social Policy and Programs II-III (2-2)
SW 249A-B—Concepts of Human Growth and Behavior in Social Work Practice II (2-2)
SW 266—Social Casework II (2)
(or) SW 276—Social Group Work II (3)
SW 285—Research (2)

Spring Term

SW 212—Field Instruction in Social Work (4)
SW 250—Concepts of Human Growth and Behavior in Social Work Practice III (2)
SW 260—Principles of Administration in Social Work (2)
SW 267—Social Casework III (2)
(or) SW 277—Social Group Work III (3)
SW 286—Research (2)

Second Graduate Year

Fall Term

SW 215—Field Instruction in Social Work (6 or 5)
SW 251—Concepts of Human Growth and Behavior in Social Work Practice IV (2)
SW 268—Social Casework IV (2)
(or) SW 278—Social Group Work (2)
SW 271—Community Organization (2)
SW 287—Special Studies in Social Work (3)

Winter Term

SW 216—Field Instruction in Social Work (6)
SW 252—Concepts of Human Growth and Behavior in Social Work Practice V (2)
SW 269—Social Casework V (2)
(or) SW 279—Social Group Work V (2)
SW 287—Special Studies in Social Work (4)

Spring Term

SW 217—Field Instruction in Social Work (6)
SW 228—Social Policy and Programs IV (3)
SW 253—Concepts of Human Growth and Behavior in Social Work Practice VI (2)
SW 270—Social Casework VI (2)
(or) SW 280—Social Group Work VI (2)
SW 287—Special Studies in Social Work (2)

Group work students add:

SW 262—Supervision in Social Group Work (2)

- 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 precedence 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 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 six 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 six consecutive courses plus some courses in program development, 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.

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 including a 9-credit degree project (as indicated) 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. A Master's degree research project consisting of 9 quarter credits must be completed. Each student will participate in the planning and execution of a research project which is presented in a completed written research report. Usually students work within a small group in the preparation of the research project, but individual student projects may be permitted with special consent.
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. Not more than 9 credit hours earned in extension courses will be accepted to apply on degree requirements and then only if the grade received is B or better and the course (a) was taught by a member of the graduate faculty, (b) is numbered above 100, (c) carries the same title and content as a corresponding course in the regular curriculum.

7. The candidate must successfully pass a written examination and/or an oral examination conducted by a committee of three or more members of the graduate faculty.
8. All credits offered for the degree must have been earned within 7 years preceding the quarter in which the degree was conferred.
9. Following the completion of 40 graduate credits not less than 15 of which must have been earned at the University of Minnesota and not later than the opening of the quarter preceding the quarter in which the degree is to be conferred, the student shall submit, through his major adviser, a program of all credits presented for the degree upon the appropriate degree program form.

Advanced standing not to exceed 45 quarter credits may be granted for work done in other schools of social work accredited by the Council on Social Work Education, limited by the above regulations.

Normally, students are not admitted for part-time work at this school. An exception is made for employed social welfare workers in the Twin Cities area who are admitted under certain conditions to an organized part-time study program. (Further particulars can be secured on request.)

ADMISSION TO THE M.S.W. PROGRAM

Professional social work education is graduate study in the School of Social Work which is within and under the standards of the Graduate School. Admission is based on evidence that the applicant has personal and academic qualifications which meet Graduate School standards and give promise of success in graduate education and practice in the profession of social work.

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

Fift

A HIST

During 1967-68 the School of Social Work at the University of Minnesota celebrates its 50th year. Among special events of the year will be the annual conference meeting of the Council on Social Work Education, January 22-26, 1968.

The first course in this University on a social work topic was titled "Poverty" and was offered in 1915 by the late Dean (of Washington University) Frank J. Bruno, then director of the Minneapolis Associated Charities. Through hundreds of courses, thousands of students have studied social work at this University since then. Under the directorship of Professor Arthur J. Todd, the Regents established in 1917 the Training Course for Social and Civic Work which was later to be renamed the School of Social Work, a program which included undergraduate and graduate courses. The first Master's degree was conferred in June 1918.

It was a time of ferment and change. With the close of World War I the American community created additional welfare programs simultaneously searching for better qualified workers to render welfare services. The profession of social work was emerging from its lay past. This process was accelerated by the establishment within universities of professional education for the field. The University of Minnesota was one of the earliest among universities to establish social work education within its offerings. The Training Course, later to be named the School of Social Work, appeared shortly after schools of social work began in America. Minnesota became a charter member in 1919 of the American Association of Training Schools for Professional Social Workers (to be replaced later in history by the present Council on Social Work Education).

Under the leadership of F. Stuart Chapin (1922-1949) and Miss Gertrude Vaile, associate director (1929-1946) the school matured, and in its development expanded in size and became graduate in level. During this era the great depression and World War II brought stressful demands to which the school responded by providing partial professional education to many hundreds of students, on leave from their demanding emergency relief and welfare positions, who often did not stay long enough to take the Master's degree.

Following World War II a new era in the history of the school began. Professor John C. Kidneigh, after serving as associate director (1946-49), became director in 1949. Due to deaths and retirements of older members, a completely new and enlarged faculty drastically revised the graduate program, initiated the M.S.W. (as contrasted with the

Years

NOTE

M.A.) degree under a curriculum organized into sequences, established the Ph.D. program, and revised the undergraduate preprofessional program. Enrollments rose steadily (from an average of 35 full-time graduate students in the decade 1936-46 to more than 125 full time) and as standards for admission were more clearly specified and raised, the student body is now unmatched in quality of intellect and purpose.

As faculty members were elected or appointed to national association's leadership offices and as the alumni of the school increased in numbers and in many cases rose to prominence and professional responsibility, the influence of the school on the nation became significant. (For example, both the director of the school and one of its alumni have served as president of the National Association of Social Workers.) Standards for social work and for social work education have been directly influenced by the activity and contributions of the school's faculty and its alumni.

Nearly a thousand graduate degrees in social work have been conferred since the first Master's degree was conferred in 1918. Of these, 125 Master's degrees were conferred prior to 1946. More than 30 Ph.D. degrees, all of which were conferred since 1950, as well as all the M.S.W. (as contrasted with the M.A.) degrees have been conferred since 1949.

Throughout the history of the school the social agencies in Minnesota have provided strong support to the school. The Minnesota community, long noted for its relatively well developed social services, has many agencies of high quality in a complete range of the kinds of social services known to America. In co-operation with the school, these invaluable resources have been used for field work teaching—a very important ingredient in social work education. The example set by Professor Arthur J. Todd, first director of this school and a founder and second president of the Minneapolis Council of Social Agencies, has been followed by succeeding directors and faculty members of the school in becoming deeply involved in community agency organizations and programs.

Furthermore, the leadership of the University has appreciated and supported the school as a valuable part of this great educational institution. The contribution of the school and its faculty to the broader University purposes has been considerable.

With the first half century of the school's service now reached, it is probable that the school will write an even more significant page in history during the next 50 years.

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 Science 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. Another important part of summer offerings is the 1- to 2-week institutes for employed social workers with topics that vary in accordance with subjects of current interest to social workers.

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.)

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 student must plan to devote at least one 12-month year to full-time study in residence (preferably beginning in June but possibly beginning in September). He 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 *Bulletin of the Graduate School*.

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. A single transportation allowance for travel to the School of Social Work may be paid to accepted applicants (either MSW or doctoral level) coming from a distance requiring a fare in excess of \$25.

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 MSW 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 Vocational Rehabilitation Administration.

U.S. Veterans Administration Stipends—Under an arrangement with the school a stipend of \$3,000 for a 9-month year involving a field work placement (requiring 700 clock hours) in a Veterans Administration hospital or clinic may be paid students in the second graduate year of study. Stipends of \$5,000 are available from the Veterans Administration for doctoral students with research specialization if found eligible by the school and by the Veterans Administration.

OTHER STIPENDS

Donald Abbott Miller Memorial Fellowship—Tuition scholarship for graduate social group work student.

Archib 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 per cent to 50 per cent of time, involving payment for services rendered from \$1,100 to \$2,200 per academic year, are available in limited number.

FELLOWSHIPS FROM OTHER SOURCES (Not administered by the school)

In addition to these scholastic 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.

St. Paul Social Welfare Scholarships, awarded to Minnesota residents who are eligible for admission to graduate school of social work for a duration of 2 academic years. Amount based on need, to a maximum of \$200 per month, with commitment to accept employment for at least 2 years in a Ramsey County social agency. Apply not later than February 28 to St. Paul Social Welfare Scholarship Committee, Greater St. Paul Community Chest and Council, Inc., 400 Wilder Building, St. Paul, Minnesota 55102.

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 16, N.Y.

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 16, N.Y.

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 10, N.Y. 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 17, N.Y.

Nina Morais Cohen Scholarship, established by the Minneapolis section, National Council of Jewish Women, to qualified beginning graduate social work student. Amount is \$225, and may be renewed for a maximum of 2 years. Apply to Director, Bureau of Student Loans and Scholarships, University of Minnesota, Minneapolis, Minnesota 55455.

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 16, N.Y.

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 17, N.Y.

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 21, N.Y.; 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.

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 (\$27 per quarter)	81.00
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.

Students seeking assistance in securing living quarters should communicate with the Student Housing Bureau, Eddy Hall, University of Minnesota, Minneapolis, Minnesota 55455.

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 MSW 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. (4-2-2-3 cr)

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 MSW degree)

243. **International Social Welfare.** (3 cr; 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. (3-2 cr; prereq ¶210 or ‡)

249Aw-Bw. **Concepts of Human Behavior II.** Continuation of SW 248. (2-2 cr; prereq 248A-B or ‡)

250s. **Concepts of Human Behavior III.** Psychological factors associated with individual and group development as applied to social work practice. (2 cr; prereq ‡)

251f-252w. **Concepts of Human Behavior IV-V.** Psychosomatic and psychiatric illness; implications for social work practice. (2-2 cr; prereq 250)

253s. **Concepts of Human Behavior VI.** Use of concepts in social work practice. (2 cr; prereq 252, 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. (2 cr)

261. **Supervision in Social Casework.** Principles of supervision applied to supervisory process in agencies offering casework services. (2 cr; prereq 260 and ‡)

262f. **Supervision in Social Group Work.** Principles of supervision and consultation applied to the supervision of volunteers, sub-professionals, and others working in agencies offering group work services and community programs. (2 cr; 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. (2 cr; 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. (3 or 2 cr; prereq ¶210)

266w-267s. **Social Casework II-III.** Continuation of SW 265 emphasizing a critical analysis of casework process and development of skill. (2 cr per qtr; prereq 265 and ¶211-212)

268f-269w-270s. **Social Casework IV-V-VI.** Advanced casework method focused primarily on treatment methods. (2 cr per qtr; 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 co-ordination of social services. (2 cr)

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. (3 or 2 cr; 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. (3 cr per qtr; prereq 275 and ¶211-212)
- 278f-279w-280s. **Social Group Work IV-V-VI.** Advanced group work method focused on treatment and community action. (2 cr per qtr; prereq 277 and ¶215)
- 285w-286s. **Research.** (2-2 cr; 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)
- 295f,w,s.* **General Seminar: Social Work Methods.** (Cr ar; prereq #)
- 298f-299w-300s. **General Seminar: Social Work.** (Cr ar; prereq MSW degree in social work and admission to doctoral program)